The London School of Economics and Political Science

Transformations in the Korean and Brazilian Processes of Capitalist Development between the mid-1950s and the mid-2000s: The Political Economy of Late Industrialisation

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Declaration

I certify that the thesis I have presented for examination for the MPhil/PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

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Abstract

This thesis examines the specificities of Late-industrialisation, focussing on Korea and Brazil. The growth and development experience of both economies between the mid-1950s and the mid-2000s is explained in terms of their pattern of integration into the international division of labour. Challenging conventional accounts, the thesis does not consider these patterns as resulting simply from economic policies and institutions, but rather determined by global economy developments and their interaction with local structural factors that affect the conditions of valorisation of capital in different productive sectors.

This thesis argues that the Brazilian process of capitalist development revolved around the appropriation of land rent – i.e. extraordinary profits available due to the monopoly of an irreproducible means of production, land. Industrial capital was able to maximise profits despite producing for domestic markets at relatively small scale. Capital compensated for its high production costs by appropriating a portion of the abundant land rent. Since the late-1960s, industrial capital in Korea maximised profits through the production for world markets, taking advantage of relatively cheap and disciplined labour. Due to skill-replacing technological changes associated with computerisation and electronics-based automation, and its own historical origins and characteristics, Korean labour became particularly productive when performing simplified, though increasingly complex, activities as an appendage of machinery or in the manual assembly of components.

The analysis and findings are supported by a three-pronged methodology. First, a model that measures intersectoral income transfers and assesses the value of land rent that supported the process of capital accumulation in each country. Secondly, an analysis of the global steel, motor-vehicles and semiconductors industries, and their development in Korea and Brazil. Thirdly, an appraisal of the historical development of social and political processes in the two countries and their role in shaping the evolution of economic, welfare and labour policies and political institutions. The research shows the intrinsic unity of these three factors, revealing specific transformations in Korea and Brazil as part of the realisation of the global process of capitalist development.

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Introduction

When in 1979 the second oil shock was followed by a sharp increase in international interest rates, the Korean and Brazilian economies shared several characteristics. First, both had been growing substantially during the previous 15 years. Secondly, in contrast with their earlier experiences, post-1964 growth was characterised by a sharp expansion of non-traditional exports. Thirdly, both had experienced a significant state-led development of the heavy industry sector during the 1970s. Fourthly, both were highly dependent on imported oil and external finance to the point that, by 1979, they were two of the three most indebted economies in the 'developing world'. Such were the similarities that authors as diverse as Balassa (1979), Warren (1980) and Fröbel et al. (1980) did not hesitate to highlight them. Brazil and the Republic of Korea (hereafter Korea) were usually included among the most successful Newly Industrialising Countries (NICs). More than three decades later, there is no doubt that the differences between the Korean and Brazilian economies were then much larger than their apparent similarities. Their post-1980 experience is more than clear in this respect: unlike Brazil, Korea suffered neither the 'debt crisis' nor 'lost' the decade of the 1980s and, though it faced, as Brazil, a severe financial crisis during 1997-98, Korea came back on track more rapidly than the latter. Moreover, while Korea has become a global industrial power, Brazil has endured a process of deindustrialisation.

Though several explanations have been advanced to account for the performance difference between the two countries, the debate has recently centred on the analysis of national economic policies, and the political/cultural institutions that shape them. Some of the explanations are focused in these two countries. In others, the contrast between Korea and Brazil falls within a broader interregional comparative analysis. On the one side, 'neo-liberal' authors, such as Balassa (1988, 1990), Krueger (1979, 1990), World Bank (1993) and Ranis (1990, 1995), attribute remarkable Korean economic growth to the 'free trade' or 'market-friendly' policies allegedly implemented since the 1960s. These policies, it is suggested, 'got the prices right' and promoted an 'export-led' growth strategy, which contrasted with the previous model of development based on import-substituting industrialisation (ISI), and allowed Korea to maximize its latent comparative advantage in productions intensively using its abundant 'hard-working'

and allegedly relatively skilled labour. The non-implementation of this policy shift was, for these authors, the main cause of Brazil's underperformance relative to Korea. On the other side, 'statist' authors, such as Amsden (1989), Mesquita Moreira (1995), Evans (1995) and Kolhi (2004) argue that, on the contrary, Korea's fast economic growth was based on the creation of a strong, autonomous 'developmental state' which 'disciplined' not only labour but also capital, and solved a number of 'market failures' and 'coordination problems' by deliberately 'getting the prices wrong' and by conspicuously but selectively intervening in economic processes. For these authors, the poor or inefficient implementation of these same policies in Brazil caused its underperformance relative to Korea.

The goal of the present thesis is to advance an alternative analysis, by revisiting ideas first developed by such authors as Fröbel et al. (1980), Gereffi (1995) and Iñigo Carrera (2008) to re-evaluate recent nation-centred 'market friendly' and 'statist' approaches. For this purpose, the thesis is structured as follows. The next section of this introductory chapter critically surveys the aforementioned debate between 'neo-liberal' and 'statist' authors. This literature survey is followed by the presentation of the general guidelines of an alternative approach to the transformations in the world economy leading, since the late 1960s, to the formation of a New International Division of Labour (NIDL). This is done through the reconstruction of the approach's origins in the above-mentioned pre-existing literature. The last part of this introduction details the main hypotheses and aims of the thesis, namely, the re-evaluation of the comparative analysis of the processes of economic development and industrialisation in Korea and Brazil between the mid-1950s and the mid-2000s from the standpoint of a revised NIDL framework. The rest of the thesis presents the methodology, sources, and quantitative, qualitative and historical analyses supporting the main hypotheses.

Nation-centred accounts: Neoliberals v Statists

Original formulations of the neo-liberal account of the East Asian NICs' fast economic growth *vis-à-vis* other developing countries usually focused on the study of specific national experiences, notably the cases of Korea and Taiwan. The elimination of restrictions previously imposed on external trade (e.g. exchange rate reform and reduction of domestic markets protection) was regarded in these studies as the key

growth-promoting policy.[1] This strategy supposedly allowed these countries to gain from their specialisation in production intensively using their most abundant factor of production, labour. Neo-liberal authors contrasted this experience with Latin America's, notably Brazil's, stubborn support for domestic-market-oriented industrialisation programmes intensively using their least abundant factor of production, capital. The shift to more capital-intensive heavy and, later on, durable-consumer goods and high-tech industries taking place in Korea, and to lesser extent Taiwan, since the 1970s and 1980s, respectively, however, partially undermined these orthodox interpretations. These changes required more interventionist state policies than those 'free-trade' ones previously implemented, and still in place in Hong Kong, Singapore and the Southeast Asian NICs (e.g. Malaysia, Indonesia and Thailand), where light industry and services remained the core of their integration in world markets. Since then, neo-liberal accounts, as those reviewed below, began to be structured in the form of interregional comparative analysis (i.e. the East Asian NICs' performance and policy-making are compared with that of NICs in other regions of the 'developing world', in most of the cases in Latin America).

'Statist' or 'institutionalist' authors have always focused mainly on the analysis of those East Asian countries which have pursued a more interventionist set of policies and political institutions: Korea and Taiwan. They have contrasted these cases with those Latin American countries, notably Brazil, Mexico and Argentina, which have followed seemingly similar patterns of industrial promotion but have developed different institutional settings. Nevertheless, some studies also stress the importance of the state in the promotion of growth and development in supposedly 'free market' Singapore and Hong Kong, thus also giving to this argument a regional perspective.[2] Statist authors thus contest the neoliberal comparison between export- and domestic-market oriented processes of industrialisation. Conversely, they claim that countries in each region, notably Korea and Brazil, pursued both types of trade policies. They thus explain differences in their growth and developmental outcomes by pointing to the institutional background or context under which policies came through and were finally put into practice.

Interestingly, when faced with the task of explaining the deep financial and economic crisis Korea suffered in 1997/8 'neoliberal' and 'statist' authors look in the

[1] See Fei and Ranis (1975); Frank et al. (1975); and Krueger (1979).
[2] See e.g. Castells (1992).

opposite direction. 'Statist' authors point at the formerly unnoticed liberalisation programme initiated in the early 1980s and deepened through the 1990s;[3] their neoliberal counterparts blame the strong (and allegedly distorting) intervention of the state in the financial and banking sector they had previously ignored.[4]

The next two sub-sections review in more detail the controversy between 'neo-liberal' and 'statist' explanations of the differential paths of development and growth experienced by Korea and Brazil since the 1960s. The review is followed by the presentation of several critical comments.

Neoliberal approaches

Orthodox neo-liberal accounts of the so-called first tier Asian NICs' (i.e. Korea, Taiwan, Hong Kong and Singapore) 'economic miracle', as presented by Balassa (1988, 1990) and others such as Fei and Ranis (1975), argue that 'neutral' trade policies implemented since the 1960s were the key factor promoting economic growth in the region. According to the authors, these policies, consisted in the implementation of a uniform (i.e. non-selective) and stable system of incentives which, by simply avoiding discriminations against exports, enhanced the export orientation of these economies. Moreover, in these authors' view, this policy was complemented by the reduction or even elimination of import tariffs, the liberalisation of capital markets, the 'flexibilisation' of labour markets, the development of an efficient and 'export-oriented' bureaucracy, and the reduction of state participation in economic activities apart from the provision of 'public goods'. Hence, production for world, rather than domestic, markets resulted in the allocation of resources according to these countries' comparative advantage in labour-intensive production. This permitted the exploitation of economies of scale and ensured full capacity utilisation by expanding the size of the market, and stimulated competitive behaviour leading to the implementation of technological changes and innovations. All these allegedly enhanced productivity and therefore economic growth in the region.[5]

These kinds of policies contrasted markedly, it was suggested, with the import-substituting industrialisation strategy pursued in the region before the 1960s, and in

[3] See Chang (1999); Wade and Veneroso (1998).
[4] See Pomerleano (1998).
[5] See Frank et al. (1975) for an earlier version of these arguments based on the Korean case.

Latin America during most of the post Second World War (WWII) era. This strategy of industrialisation and development, the argument goes, discriminated against exports by combining an overvalued currency with domestic market protection. In this sense, Brazil's incapacity, despite its efforts during the late 1960s and early 1970s, to carry out fully the policy shift from import-substituting to export-oriented industrialisation explains its post-1980 underperformance relative to Korea.[6]

Despite its supposedly theoretical consistency, authors within this school of thought soon realised, however, that their interpretation of policy-making in the East Asian NICs, especially in Korea and Taiwan, was rather simplistic. Krueger (1990), for instance, suggests that other kinds of policies were implemented in these countries apart from those strictly prescribed by orthodox neoclassical theory (i.e. the provision of 'public goods' and market liberalisation). These included 'moderate' restrictions on international trade and interventions in the financial and capital markets when necessary. That was particularly noticeable in the case of Korea. Unlike in Latin America, however, this type of policy was successful, according to this author, because the outward orientation of the East Asian economies imposed the necessary discipline to make them effective, by reducing the space for the expansion of rent-seeking in both private and public sectors, and gave their government the necessary flexibility to liberalise markets when the costs of those interventions (i.e. restrictions to free trade) became higher than their benefits.

The wide range of criticisms that these orthodox neo-liberal positions received (see below), led some authors sharing the overall perspective to modify specific aspects of their account of the East Asian 'success' *vis-à-vis* other developing countries, such as those in Latin America. For instance, in 'The East Asian Miracle', the World Bank (1993) recognises that in several fast growing East Asian countries (notably Japan, Korea and Taiwan), governments intervened much more in the economy than was previously accepted within this school of thought. Nevertheless, it argues that these interventions, unlike in Latin America and elsewhere in the 'developing world', were circumscribed to particular sectors, subjected to strict performance conditions and, above all, 'market-conforming'. Moreover, 'The East Asian Miracle' contends that policy interventions only worked (when they did) because of the existence of 'strong' fundamentals (i.e. stable macroeconomic variables) and 'healthy' institutions (i.e. stable

[6] See e.g. Balassa (1990).

governments and corruption–free bureaucracies able to impose contest-like practices when granting subsidies).

According to this account, East Asian countries succeeded in achieving high and sustained rates of economic growth because governments kept price distortions within reasonable bounds and because, despite the different concrete policies implemented in each East Asian country, all government interventions shared a common approach that constituted the key element for economic success: public polices in those countries were directed towards creating a 'market friendly' environment. They achieved this, the argument goes on, not only by opening their economies to international trade, foreign capital and technology, but also by means of pursuing investments in 'human capital' (mainly primary and secondary education), increasing national savings through different means (e.g. high real interest rates and the strengthening of the banking system), creating a 'competitive' climate for businesses by 'freeing' labour markets from trade unions and wage regulations, and providing a stable political and macroeconomic environment thanks to their centralised governmental structures and orthodox budget management. This so-called 'market-friendly' approach to public policies materialised in a common set of measures, producing high rates of private physical and 'human' capital formation which were, it is argued, the engines of the substantial growth achieved in the region. The non-implementation of this 'market-friendly' approach elsewhere was, implicitly or explicitly, considered by this position as the cause of other 'developing' countries' relatively weaker and less steady growth processes.

Later works within this theoretical current, sometimes by the same authors, evidence a further shift to more moderated and less dogmatic positions which share several points with the explanations reviewed in the next section. Ranis (1989, 1995), for instance, argues that the key factors explaining East Asian 'success', in particular in Taiwan and Korea, *vis-à-vis* other 'developing' countries were the flexibility and pragmatism of governments to put forward those policies which allowed the private sector to develop by following changing market signals. These policies included not only investments in 'human capital' and technological development but also targeted interventions in specific industrial sectors to speed up learning processes. The key difference between Taiwan and, to lesser extent, Korea and the Latin American NICs was, according to this author, that the former never followed a doctrinaire approach to policy-making. For instance, Ranis (1995) suggests, in sharp contrast with other 'developing' countries, notably those in Latin America, both Taiwan and Korea

implemented only a 'mild' import-substitution strategy before the 1960s and managed macroeconomic fundamentals in a relatively orthodox manner throughout the post-1960s period. Finally, Stiglitz (1996, 2001), who took part in the World Bank (1993) study, goes further still in recognising the significance of specific industrial policies (e.g. subsidies) solving coordination failures and of cooperation enhancing measures dealing with problems of imperfect information (e.g. deliberation councils in Japan and Korea) in promoting growth in East Asia. Nevertheless, all these state interventions, Stiglitz (1996) argues, improved, complemented or created, rather than replaced, markets, and, together with a stable macroeconomic and political environment (gained through equity improving policies), were the key behind the East Asian 'miracle'.[7]

Neo-liberal authors in general do not find any singularity in the Korean case *vis-à-vis* its regional counterparts. What was singular of Korea – the state-led development of the heavy and automobile industries during the 1970s and 1980s, respectively – is understood by most of these authors as a 'temporal' erroneous deviation from a more 'free market' approach to policy making.[8]

Statist approaches

In contrast to the neo-liberal position, 'statist' authors have argued that the difference in the performance of the Korean and Brazilian economies after the mid-to-late 1970s cannot be simply attributed to the 'market friendly' or outward-oriented policies implemented in the former as opposed to more interventionist or inward-oriented ones implemented in the latter during most of the period. In his comparative study of the two economies, Mesquita Moreira (1995), for instance, argues that the key difference between Korean and Brazilian policy-making has not been that the former's state has pursued 'hands-off' or 'market-friendly' policies while the latter's has heavily intervened in the economy. Rather, the state intervened significantly in the economy in both countries. The difference, for this author, and for most of those reviewed in this section, springs therefore from the quality of state interventions in the field of industrial policy rather than in macroeconomic management. For Mesquita Moreira (1995), the Korean state was simply more efficient than the Brazilian in solving a number of

[7] A relatively similar position is advanced by Kuznets (1994) to account for the Korean developmental and growth experience.
[8] See World Bank (1993:129, 145); Kuznets (1994: 146); Ranis (1995: 531).

'market failures'. These included 'factor' market failures, like the lack of long-term credit for industrial projects, and 'product' market failures, like the existence of technological externalities and potential economies of scale, that typically characterise developing country economies and block growth and development. In Korea, Mesquita Moreira (1995) suggests that a combination of selective state interventions designed to solve the existing 'failures' in factor and product markets, and an outward-oriented strategy, resulted in strong long-term economic growth. Selective but strict industrial policy permitted the maximisation of the export-oriented trade policy, while, as Krueger (1990) argues, the outward-oriented strategy imposed some discipline over state's interventions in the economy since 'mistakes' were penalised by failures in the world market. Interventions in product markets included trade policies that aimed to promote exports and protect 'infant' industry, and industrial policies that fostered the development of large locally-owned industrial groups (*chaebols*) and limited the extension of Foreign Direct Investment (FDI). Interventions in factor markets included the control of the banking sector and policies to promote 'human' capital accumulation and investments in the development of a domestic scientific and technological base. For Mesquita Moreira (1995), all these interventions succeeded because they were in concordance not only with Korea's *static* comparative advantage, as argued by orthodox neo-liberal authors, but also with its *dynamic* ones. In Brazil, on the contrary, heavy and generalised (i.e. unselective) state support together with the excessive inward-looking orientation of the economy resulted in the development of an inefficient industrial structure and in the massive misallocation of resources. Moreover, Mesquita Moreira (1995) argues that the inadequate supply of financial resources for domestically owned industrial companies and the lack of investments in education and science and technology blocked the development of an internationally competitive nationally-owned manufacturing sector, as in Korea. Though sometimes addressed (e.g. partly during the 'miracle' of 1968-73 and partly during the Second National Development Plan of 1975-79), these deficiencies were never completely corrected in Brazil. Furthermore, according to Mesquita Moreira (1995) these problems were enhanced by the heavy reliance, unlike in Korea, on foreign industrial capital which crowded the domestic markets and inhibited the attainment of minimum efficient scales of production. In summary, Mesquita Moreira (1995) concludes that it was not the excess of interventions that caused failure in Brazil but their relatively low quality. This was further evidenced,

according to this author, by the fact that, in contrast to the Korean case, industrial policy was never in concordance with Brazil's static and dynamic comparative advantages.

This position is to a large extent shared by Rodrik (1994), through his order of explanation is slightly different. For Rodrik, the cause of Korean (and Taiwanese) economic success is to be found in the efficacy of government's interventions in solving several 'coordination failures' springing from the imperfect tradability of key inputs and technologies and from the existence of scale economies. These 'coordination failures' had been allegedly blocking the potentially high returns on investments using the available skilled labour. According to Rodrik (1994), state interventions, like investments subsidies, tax incentives and administrative guidance managed to produce coordinated private investments in different industrial sectors, improved productive efficiency and thus international competitiveness. This virtuous cycle led to the acceleration of the growth process.[9]

From a more heterodox perspective, Amsden (1989) reinforces these points by claiming that state interventions in the economy to promote industrialisation have been common to all 'late-industrialisers', including Korea and Brazil. Governments in these countries strongly subsidised domestic industry and even created public enterprises in the branches of production where private capital did not enter. Moreover, in the Korean case, Amsden (1989: 79-81) argues, the state went even further and performed the role of entrepreneur, deciding, planning and actively promoting, by means of subsidies, market protection and output quotas, the development of specific industrial sectors, products, firms and markets.[10] "Therefore, it may be said that growth has been faster in Korea not because markets have been allowed to operate more freely but because the subsidisation process has been qualitatively superior: reciprocal in Korea, unidirectional in most other cases. […]. This does not simply mean close cooperation, which is sometimes the way business-government relations in Korea and Japan are simplistically depicted. Nor does it simply mean that sometimes the government wields the carrot and at other, unrelated times, the stick. It means that in direct exchange for subsidies, the state exacts certain performance standards from firms. The more reciprocity that

[9] Though this account seems plausible for the 'big push' of the 1970s, it is in clear contradiction to the pre-1970s experience when labour-intensive light industries predominated. First, equipment and inputs for these industries was largely tradable internationally. Backward links were thus not necessary for their profitable emergence. Thirdly, these industries did not enjoy large returns to scale. See Michell (1988: 125-33).

[10] In the words of Wade (1990), the state in Korea and Taiwan 'governed', rather than supplemented, the market.

characterizes state-firm relations in these countries, the higher the speed of economic growth".[11] Korea's particularly strong performance then, Amsden (1989) claims, was owed to fact that there the state managed to discipline capital, not only labour, through the imposition of performance standards in exchange for the subsidies and protection granted to it.

This perspective is shared by other authors such as Chang (1993), Evans (1995), and Kohli (2004). In sharp opposition to the authors reviewed in the previous sections, Chang, for instance, suggests that macroeconomic policy in Korea was far from prudentially managed and was completely subordinated to, and sometimes sacrificed by, an industrial policy aimed at promoting technological development. For his part, Kohli (2004), in a comparative study of Korea, Brazil, India and Nigeria, puts forward an interpretation which runs similar to that of Amsden (1989). In contrast to the neo-liberal accounts reviewed above that oppose Latin American import-substituting to East Asian export-oriented industrialisation; Kohli (2004: 390) argues that "[b]oth Korea and Brazil simultaneously pursued both import substitution and export promotion, with the state intervening to provide a variety of subsidies for both sets of activities." The difference in these countries' economic performance, Kohli stresses, has been due to the effectiveness with which these policies have been pursued. The Korean state has been simply more effective than the Brazilian in implementing, rather than in designing, those growth promoting policies.

Finally, in modified versions of the 'statist' approach, Kay (2002) and others have included another dimension to the debate by arguing that agrarian policies were as important as trade and industrial strategies in promoting growth and development in Korea and Taiwan *vis-à-vis* their Latin American counterparts. According to Kay, agrarian policies, including widespread land reforms at the beginning of the process of industrialisation, not only removed the bases of landowners' political power, thus reducing their opposition to industrialisation, but also expanded the domestic markets and allowed the implementation of productivity enhancing programmes in the rural sector which increased the mass of resources transferable to the urban sector without worsening the living conditions in the countryside. In contrast Latin American countries, Brazil included, despite several efforts to solve the 'agrarian problem', did not reform fully their land tenure systems and consequently suffered from landowner

[11] Amsden (1989: 145-6)

opposition to the process of industrialisation, tight domestic markets and the long-term underperformance of the agrarian sector. Interestingly, this position is also shared by Weeks (1998: 18) who, from a Marxist perspective, suggests that the agrarian reforms implemented in East Asia before the beginning of the process of industrialisation helped to remove completely pre-capitalist social relations of production in those countries and thus allowed a full capitalist development there. In Latin America, on the contrary, the remaining pre-capitalist social relations prevailing in the rural sector kept blocking the normal development of these capitalist economies.

Some criticisms

However precise in their analysis of particular economic policies and state institutions, the approaches reviewed above have several limitations. First, it is apparent that policies included in both the 'market-friendly' and 'interventionist' approaches were implemented simultaneously in Korea and Brazil though with different degrees of intensity across the period. Secondly, it is also evident that, despite the relatively extensive intervention of the state, Korea followed an overall export-oriented pattern of industrialisation, a developmental path, and integration in the world economy *qualitatively* similar to that of other Asian Tigers (e.g. Hong Kong and Singapore) and Southeast Asian NICs (e.g. Indonesia, Malaysia and Thailand) which implemented much less interventionist policies,[12] and did not purse land reform programmes despite having large agrarian sectors. Notwithstanding the much heated debates, the main problem with these accounts lies not in their inability to discover the exact mix of policies and institutions that facilitated and promoted growth in Korea (East Asia) and hindered it in Brazil (Latin America) but, conversely, in exclusively basing their explanations of the differential national economic performances in these factors.

Effectively, when trying to account for the cause behind particular policy-making, all the limits of these approaches become evident. Some authors, such as Balassa (1988), Krueger (1990), World Bank (1993), and Mesquita Moreira (1995), seem to believe that economic policies are simply the product of enlightened (or confused) government bureaucrats. The problem is that these authors assume what should be explained: why bureaucrats in Korea and Brazil have implemented different

[12] See e.g. World Bank (1993); Perkins (1994).

policies. Indeed, it is nowadays widely recognised, even by those who previously made the opposite a core part of their argument, that Korean state officials were as corrupt as the Brazilian ones throughout the period under study.[13] Unsurprisingly, in a less naïve manner, most of the above-mentioned scholars tend to explain the specificity of public policies, the degree of success in their implementation, and their outcome, in both countries by pointing to the societal, institutional and political background prevailing in each country.

Amsden (1989), for instance, argues that state autonomy due to historical and political circumstances, such as WWII and the Korean War, the elimination of landowners through an extensive land reform, and the 'reciprocal' nature of state/business relations due to cultural values, explain the particular success in promoting growth of public policies in Korea. Rodrik (1994) suggests that special (i.e. singular) initial conditions, like the high level of average education and the egalitarian distribution of income, reduced rent-seeking and thus increased the effectiveness of government interventions there. Chang (1993), in turn, points to the 'corporatist' ideology predominant among a military leadership educated in Japanese-style institutions as the main determinant of Korean 'strong' state and growth-promoting policy-making. In a similar manner, Kohli (2004) signals the Japanese colonial legacy as the main factor in the development of a 'cohesive', extended and far reaching state apparatus in Korea, with the capacity to design, implement and fully enforce growth-oriented policies. Evans (1995), for his part, suggests that the 'embedded autonomy' of the Korean bureaucracy - i.e. a relationship with the business leadership close enough to learn about its necessities but relative autonomous in the final decision-making not to follow vested interests - allowed it to do so. For Ranis (1989), the secularism (i.e. the pre-eminence of material over spiritual values), egalitarianism (i.e. the value given to 'even' opportunities), and 'organic' nationalism (i.e. the subordination of individuals to the state's authority and to the 'common good') embedded in the Korean and Taiwanese societies are the key institutional factors behind their flexible, pragmatic and therefore successful policy-making *vis-à-vis* other developing countries, notably the Latin American. Kay (2002), finally, points at the poor natural endowments as the main reason behind the low rent-seeking prevailing in Korea's public and private sector and behind the emergence of an autonomous and efficiently-run state with the capacity to

[13] See Kang (2002a, 2002b).

implement welfare maximising policies. All these authors signal the lack, weak or sporadic development of these factors in Brazil as the key to its underperformance after the mid-1970s.

Besides the questionable historical accuracy of some of these formulations (e.g. the existence of low levels of rent-seeking, high educational attainments and even income distribution in Korea),[14] the key question that remains to be answered is why Korean cultural and political institutions became a stimulus for growth only after the mid-1960s, given that most of these factors were stressed by authors like Rostow (1958) during the late 1950s as the cause of Asian poor economic performance *vis-à-vis* Latin America.[15] Or, why a 'corporatist' military leadership could gain control of the Korean state and impose its particular type of growth-promoting programme over the rest of the society while failing to do so consistently in Brazil. As Chibber (1999: 324-7) argues, during the first years of military government in Korea (i.e. 1961-64), economic policy did not differ greatly from the previous period, despite the 'corporatist' ideology of its leadership. Moreover, these accounts can neither explain why it was only by the mid-1970s that Brazilian cultural and political institutions became an obstacle to growth. Or, why policies maximising Korea's comparative advantage in production intensively using relatively cheap and disciplined labour began to be implemented only around the mid-1960s.

Indeed, these explanatory gaps become critically evident in Kohli's detailed and exhaustive historical analysis of Korean and Brazilian development experiences. Despite all his efforts, this author is unable to explain fully why, in Korea, the allegedly efficient and 'cohesive' (i.e. developmental) state inherited from the Japanese fell pray of the corrupt and incompetent Rhee regime, and was only restored twenty years after the end of the colonial period. Equally, Kolhi struggles when accounting for the much more volatile capabilities of the Brazilian state: from being 'cohesive' during the corporatist 1933-45 Estado Novo to 'non-cohesive' during the populist 1945-64 period, back to 'cohesive' during 1964-1973, and back again to 'non-cohesive' thereafter. It seems that every time that there is period of fast industrial growth accompanied with political closure, the ideal features of cohesiveness are found in the Korean and Brazilian states, and vice versa, in a typical *cum hoc ergo propter hoc* fallacy. What is

[14] This will be discussed in detail in Chapter 4 and Part II.
[15] See also Chang (1993: 150-1) on this. Moreover, Chibber (1999) convincingly suggests that, in Korea, improvements in the quality of state institutions, like the bureaucracy, were usually contemporary with, rather than predated, the post-mid-1960s transformations.

still missing is the presentation of the objective factors that made the state change in both directions.

Towards an alternative approach

After reviewing different accounts on Korean (or East Asian) and Brazilian (or Latin American) comparative development, two related conclusions can be put forward. First, it can be argued that, despite their valuable contributions, all the approaches reviewed thus far have somehow failed to give a solid and complete explanation of the reasons behind the dissimilar growth performances enjoyed by the Korean and Brazilian economy since the late 1970s. The reason for this failure lies in that these approaches are one-sided; they take particular manifestations of these national processes of capitalist development as if they were the cause of their own specificity.[16] Secondly, it can be argued that they all suffer from this explanatory problem because, despite their many differences, all the accounts reviewed above share one theoretical perspective: they all regard the process of capitalist development (i.e. capital accumulation) as being nationally based. In the best of the cases, the global economy appears as the context or environment to which national strategies adapt, react or integrate with more or less degrees of autonomy. They all thus signal the specific economic policies implemented by national states or the political/cultural institutions that shape them as the ultimate cause behind economic performance. The problem with these approaches is that, on the contrary, the process of capitalist development is *essentially* global and national only in its *form* of realisation; and the subject of this worldwide process is *capital* rather than the *state*.[17]

In capitalism the state is not an autonomous entity existing side-by-side with the market and interacting with it under different forms determined by their circumstantial relative strength.[18] On the contrary, the state and its institutions are forms of realisation, mediations, of the process of autonomous regulation of social human life through the exchange of commodities, namely, the process of capital accumulation. The role of the

[16] No matter how accurately a real existent form (e.g. an economic policy or a political institution) is described; if it is taken abstracted from its own determination, our knowledge of it will always be incomplete and appear as unilateral. See Marx (1973: 100-07).
[17] See Fröbel et al. (1980: 8); Burnham (1994: 226-9); Iñigo Carrera (2008: 148-64).
[18] See Fine and Rustomjee (1996) on this point with reference to statist accounts of the South Korean 'economic miracle'.

state in capitalism, therefore, is not to maximise 'social welfare'.[19] The state in capitalism is the political representative of society's total capital (i.e. social capital), the subject of the contemporary process of social production and consumption.

The *historical specificity* of capitalism resides in that the production of goods and services useful for human life is organised not through *direct* relations among individual members of society, but *indirectly* through the exchange of the products of labour processes performed privately and independently of each other.[20] When producing for the market, then, 'economic agents' produce not only goods which are potentially useful for others, they also produce their own *general* social relationship; they produce goods that are exchangeable, commodities (Marx, 1972; Iñigo Carrera, 2008). The exchange of commodities thus resolves the allocation of society's labour capacities to satisfy society's consumption needs; organises the contemporary process of human life. In this process, individual members of society enter into relations with each other, and thus exist for one another, as "persons whose will resides in these objects, . . . as representatives of, and, therefore, as owners of, commodities" (Marx, 1972: 84–5). Because of its impersonal character, this form of organisation of human life, in contrast to its historical predecessors, can and must be universal or global.

The production of goods with the capacity to attract one another in the market — the production of value — thus becomes itself the object of the production process, and the participation of each individual private independent producer in the appropriation of society's total production, thus its individual process of metabolism, is limited by the amount of value he produces. The valorisation of value — the production of surplus-value — is the most potent form of expanding that participation and therefore of expanding the reproduction of human life in capitalism. The objectified general social relationship, the value-form, thus becomes the immediate *automatic* subject of the production and consumption processes, a self-expanding mass of value; it becomes capital.

[19] Also see Clarke (1992) for a critique of this naïve conceptualisation of the state as an ideological form of existence of the *capitalist* state.

[20] "The wealth of those societies in which the capitalist mode of production prevails, present itself as 'an immense accumulation of commodities,' its unit being a single commodity." (Marx 1972: 35). "Only such products can become commodities with regard to each other, as result from different kinds of labour, each kind being carried on independently and for the account of private individuals." (Marx 1972: 42). See Iñigo Carrera (2008) for the identification in the work of Marx of the *private* character of social labour in capitalism as the source of the exchangeability of use-values, that is, as the historical specificity of commodities.

Nation-state policies, however extensive and universal their reach, are *direct* forms of organising the process of social metabolism. They resolve the allocation of a limited amount of resources (notably from the perspective of the world market) *directly*, through the 'conscious' and 'voluntary' actions of individuals who, though collectively-organised as members of antagonistic social classes, are, nevertheless, themselves representatives, *personifications* of the commodities they own (i.e. through the political actions of collective *personifications* of commodities). Nation-state policies are, therefore, forms of realisation of the general *indirect*, self-regulating way of organising the allocation of resources through the exchange of commodities — the process of valorisation of value on an expanded scale. Ultimately, to produce self-sustained outcomes, state policies have to be validated by markets; they have to allow capital's normal valorisation. In other words, they are concrete forms of realisation, manifestations, of the process of human life through capital accumulation.[21] Nation-

[21] It is regarding the conditions for the use and normal reproduction of labour-power (the commodity that determines the specificity of the capitalist mode of production) that Marx discovers state policies as forms of realisation, mediations, of economic determinations. "[T]he value of the labour-power includes the value of the commodities necessary for the reproduction of the worker, or for the keeping up of the working-class. If then the unnatural extension of the working-day, that capital necessarily strives after in its unmeasured passion for self-expansion, shortens the length of life of the individual labourer, and therefore the duration of his labour-power, the forces used up have to be replaced at a more rapid rate and the sum of the expenses for the reproduction of labour-power will be greater; just as in a machine the part of its value to be reproduced every day is greater the more rapidly the machine is worn out. It would seem therefore that the interest of capital itself points in the direction of a normal working-day." (Marx, 1972: 266). "Capital that has such good reasons for denying the sufferings of the legions of workers that surround it, is in practice moved as much and as little by the sight of coming degradation and final depopulation of the human race, as by the probable fall of the earth into the sun. […] But looking at things as a whole, all this does not, indeed, depend on the good or ill will of the individual capitalist. Free competition brings out the inherent laws of capitalist production, in the shape of external coercive laws having power over every individual capitalist." (Marx, 1972: 269-70). "The changes in the material mode of production, and the corresponding changes in the social relations of the producers gave rise first to an extravagance beyond all bounds, and then the opposition to this called forth a control on the part of Society which legally limits, regulates, and makes uniform the working-day and its pauses." (Marx, 1972: 298-9). Moreover, Marx also discovers here that the necessity of capital to impose a normal working-day through legislation (i.e. state regulation) cannot take other form of realisation than the struggle between the class of individuals who sell their labour-power (and personify this commodity) in exchange of a wage and the class of individuals who buy it (personifying capital). In other words, he discovers the determination of, and struggle between, social classes in capitalism as being a form of realisation (i.e. determined by) the autonomously regulated process of capital accumulation. "The history of the regulation of the working-day in certain branches of production, and the struggle still going on in others in regard to this regulation, prove conclusively that the isolated labourer, the labourer as 'free' vendor of his labour-power, when capitalist production has once attained a certain stage, succumbs without any power of resistance. The creation of a normal working-day is, therefore, the product of protracted civil war, more or less dissembled, between the capitalist class and the working-class." (Marx, 1972: 299). Based on this analysis, Iñigo Carrera (2008) develops his account of the state as the political representative of social capital. This approach to the relationship between capital accumulation (or the market) and the state is followed in the present thesis. See also Clarke (1992) for a similar approach which, however, identifies the capital-labour antagonistic relationship as the underlying determining factor (or subject) of the process of social reproduction in capitalism.

state policies and institutions, then, are not 'independent variables' that autonomously shape and determine national economic performances. On the contrary, they *mediate* the integration of the world market and the formation of the IDL — the global unity of the process of capitalist development — through the specific determination of each national portion of world capital.

When observed from the perspective of national processes of capital accumulation, policies and institutions may seem to be the main determinant behind their development. When looked at from a global perspective, the importance of national factors is largely diminished. In fact, parallel to the accounts reviewed before, another group of authors have attempted to explain the differentiated developmental and growth experiences among developing countries, and implicitly the cases of Korea and Brazil, by taking a different starting-point, namely, the analysis of the dynamics of the global process of capitalist development. Most, but not all, of these authors have worked within, or relatively close to, the world-system approach. As the following review will make evident, however, even some of the authors working within this tradition have been slowly shifting towards nation-centred explanation of developing countries comparative development, abandoning, in that way, the rational kernel of the original formulations. While Fröbel et al. (1980) in the original theory on the *New International Division of Labour* centred fully on the dynamics of global capital accumulation, the evolution of Gereffi's Global Commodity Chains approach, though initially working within the same theoretical benchmark, expressed a move from a world-market to nation-centred explanations. The rest of this section will critically review these two approaches and, subsequently, introduce an alternative account on contemporary transformations and developments in the global economy put forward by Iñigo Carrera (2008) that complements as well as supersedes them. This latter approach will frame the comparative analysis of Brazilian and Korean long-term development pursued in the thesis.

It should be stressed here that this is not to argue, as mainstream economists do, that an autonomously and abstractly determined state intervenes in the economy to solve the 'failure' of markets (i.e. their deviance from a theoretically constructed type of market structure which only seems to exist in economics textbooks) due to their allegedly inherent, or circumstantial depending on the case, imperfections or under-development. On the contrary, the previous analysis argues that the *general* autonomous regulation of the processes social production and consumption through the market (i.e. through the exchange of commodities) realises, comes about, through its opposite, the direct regulation through the emergence and development of specific political and cultural institutions, including the state and its policies.

By the mid-1970s, it was evident not only that industrial production was viable in the 'developing' world but also that, in some parts of it, notably East Asia, industrial exports were rapidly becoming the main form of integration into the global economy. Several explanations emerged then to account for this phenomenon which marked a departure from the previously prevailing 'classical', international division of labour inherited from the colonial system. Among these new explanations was the theory on the New International Division of Labour (NIDL) developed by Fröbel et al. (1980).

According to Fröbel et al. (1980), the fast post-1960s expansion of manufactured exports from the 'Third World' was not *simply* a consequence of nation-state economic policies trying to promote them or the design of Multinational Corporations (MNCs) attempting to costs-cut through off-shoring or subcontracting, as often argued. Rather, it was the result of changing objective conditions in the process of valorisation of industrial capital on a global scale. First, there were significant improvements in communications and transport methods leading to strong reductions in transportation costs. Secondly, there was a simplification of several manual labour processes in manufacturing production, as a result of the intensification in the technical division of labour, which could then be performed by unskilled workers. Thirdly, there were large industrial reserve armies (i.e. surplus populations) in the 'periphery' as a consequence of technological developments in the primary sector, such as the Green Revolution, and rapid population growth –the so-called demographic explosion. According to these authors, these 'new' objective conditions allowed industrial capital to relocate several production processes to the 'periphery' and take advantage of the low-cost labour-power available there by establishing 'world-market factories'. Contrary to what is usually claimed by some of their critics (see, e.g., Schoenberger, 1988), MNCs were considered by these authors (Fröbel et al., 1980: 46) as the institutional mediation of the process rather than the subject of these changes which, by affecting the geographical location of productive units and the direction of trade flows, were leading to the emergence of a new type of IDL.

The fast growth of manufacturing production and exports, and of national incomes, in the East Asian NICs is understood by these authors as a result of those processes. Yet, though the vast pool of relatively cheap and unskilled labour-force existing in East Asia, especially in Korea, made the region *particularly* suitable for the

development of 'world-market factories', Fröbel et al. (1980) did not think that these processes were *specific* to that region. These authors argued, 'world-market factories' were, by the mid-1970s, being established in most of the 'periphery', including Brazil among other Latin American countries.

These hypotheses were at the forefront of the discussions on the contemporary process of internationalisation of capital until the late 1980s, yet have been abandoned after receiving a wide range of criticisms on both theoretical and empirical grounds. In the first place, as critics, like Jenkins (1984), have rightly highlighted, the initial formulations of the NIDL theory contained untenable sweeping generalisations which could not account for national or regional developmental differences. Contrary to the predictions emerging from their analysis of the global economy, the development of world-market-oriented industrial sectors did not spread evenly across the 'Third World'. Moreover, especially during the period covered by their study, late-1960s to late 1970s, while the East Asian NICs were becoming major producers of garments and electronic goods for the world markets, South American industrial sectors remained practically unaffected by these changes and continued producing mainly for domestic consumers, even if Brazil and other countries in the region also hosted some 'world-markets factories' in Export Processing Zones as was noted. In the second place, also contrary to the predictions of Fröbel et al. (1980), some of those countries which developed world-markets-oriented industrial sectors experienced continuous industrial upgrading and fast and steady increases in real wages. In this sense, the impressive developmental and growth record of the first generation of East Asian NICs, especially Korea, seems to undermine a theory which made export-oriented industrialisation based on low wages in unskilled-labour-intensive industries the centre of its argument. In the third place, the development of industrial production for world markets based on the use of a relatively cheap and low-skilled workforce to perform simplified labour-processes was not exclusive of the post-late-1960s. Japan's pre-1960s industrialisation had been similarly based.[22] What was new, however, by the late 1960s, was the replacement in several industrial productions of the, increasingly expensive, Japanese labour-force by that of some of its poorer neighbouring countries, such as the former colonies of Taiwan and Korea. Above all, what was then new were the rapid advances in the automation of industrial productions and the computerisation of the calibration of the machinery for

[22] See Sugihara (2003: 96-9) on the historical origin and development of the so-called 'industrious revolution' in East Asia.

repetitive processes which, directly or indirectly, multiplied the extent of those three 'conditions', in particular the quantity of simplified labour processes that could be performed by a relatively cheaper and less skilful workforce.

Though it has never been mentioned by their critics, the main problem with Fröbel et al.'s (1980) approach to the NIDL, and the cause of their inability to grasp fully the transformations at stake, including the interregional differentiation just mentioned, was that they failed to locate their origin in the increased mechanisation of large-scale industry and its impact upon the differentiation of the skills of the different parts of the industrial labour-force rather than in the intensification of the manual division of labour. The mechanisation of large-scale industry, rather than the technical division of manual labour, is the most potent and developed form of increasing labour productivity and therefore the rate of valorisation of industrial capital.[23] As will be seen below, the post-1960s intensification of the manual (i.e. *manu*facturing) division of labour has been a consequence of the development of labour productivity through the mechanisation of large-scale industry – often referred to as the system of *machino*facture.[24]

Global Commodity Chains and the NIDL

Like Fröbel et al. (1980), Gereffi (1995, 1998) claims that the economic development of developing countries since the 1970s, notably the emergence of export-oriented industrialisation processes, has been affected, and determined, by the changes taking place in the global economy. Since then, Gereffi (1995: 100) argues, "the world economy has undergone a fundamental shift toward an integrated and coordinated global division of labor in production and trade." In this process, according to Gereffi (1995: 105), a new global division of labour replaced "[t]he classic core-periphery relationship in which the developing nations supplied primary commodities to the industrialised countries in exchange for manufactured goods." This transformation, according to him, has been led by MNCs' necessity to minimise costs at every stage in the production process and has manifested itself in the location of several industrial activities in developing countries, something that became possible, as Fröbel et al. (1980) suggested, due to technological developments in the communications, transport

[23] See Marx (1990: 508-17); Iñigo Carrera (2008: 15-23).
[24] See Kaplinsky (1989).

and production methods. However, in contrast to the position presented by Fröbel et al. (1980), based on Kaplinsky (1989), Gereffi claims (1995) that technological advances in production processes were not centred on the intensification of the technical division of manual labour but on development of 'flexible' automation systems which reduced the size of industrial plants and of 'entry barriers' in various manufacturing sectors, thus permitting their relocation out of industrially advanced countries.

According to Gereffi (1995), the NIDL has manifested itself in the emergence and consolidation of a global manufacturing system in which MNCs follow broadly two commercial strategies. They can directly control different stages in the production of a good/commodity, its 'value chain', by offshoring specific parts of industrial labour-processes to NICs or by subcontracting them to firms there, thus developing 'producer-driven' commodity chains. Alternatively, MNCs can control the design and marketing of goods whose integral production is subcontracted to lower-cost NIC firms, thus developing 'buyer-driven' commodity chains. Irrespective of the 'governance' structure of the commodity chain (i.e. whether is producer or buyer driven), countries thus connect to them in one or several of the, increasingly more complex and value-adding, following forms: as producers of raw materials; as assemblers of parts in unskilled-labour-intensive industries; as producers of parts and components; as producers of finished consumer goods for contracting MNCs; as producers of finished consumer goods under own brands. In this context, the fast economic growth of East Asian NICs in the last three decades, *vis-à-vis* other developing countries, is understood to have been the result of the region's especial capacity to upgrade continuously industrial structures and move up the value-added ladder within *Global Commodity Chains* (GCCs).

Though Gereffi's explanation of the evolution of the global economy contributes to the understanding of the different business 'models' taken by the NIDL and thus of the nature and forms of the international fragmentation of industrial labour-processes, it is not without problems. Indeed, the limits of the GCCs approach become evident when trying to account for the reason behind countries' specific insertion in each section of a commodity value chain, especially East Asian NICs' successful industrial upgrading and South American inability to follow suit. Gereffi's inability to resolve adequately these questions is manifest in his recurrent emphasis on local political or cultural factors as the main determinants of countries' or regions' specific integration in the GCCs.

While in his original formulation of this analysis, Gereffi (1989: 530) points at the unspecific and ambiguous "differences in government policies, economic organisation and social structure" as the most "important determinants of how NICs have responded to opportunities and constraints in the world economy", in later works he concretised that "[t]he key factor [explaining East Asian 'success'] probably lies with an abundant supply of local entrepreneurs" (Gereffi 1995: 129). The latter is allegedly manifest in their capacity to increase productivity through adaptive innovations and to develop efficient networks of suppliers, both necessary to succeed in world markets and to increase the value-added content of their exports. The question that remains to be answered is why it was only after the mid-to-late-1960s that East Asian entrepreneurs became 'innovation-friendly'. It should be mentioned here that though the existence of networks reducing 'transaction costs' can explain the division of labour within the East Asian countries/region, it cannot explain the region's form of integration in the global division of labour *vis-à-vis* other developing countries. Probably taking notice of these problems, in later versions Gereffi returns to more unspecific assertions and concludes that "[w]hile government policies have been facilitative in many cases, the developmental state *per se* can only be given secondary credit for East Asia's ability to benefit from, rather than being exploited by, global commodity chains. The reasons for this must be sought at a structurally deeper level in the institutions and culture of these nations –factors which are clearly 'more than the market, more than the state'." (Gereffi 1998: 58-9).

Undoubtedly, Gereffi's account supersedes the nation-centred explanations reviewed in the first section of this introduction. It is clear that for this author, East Asian institutions are not growth-promoting *per se* but only under the current form of the international division of labour. The explanation, however, remains incomplete since it does not elucidate in what form these political and cultural institutions have helped the East Asian NICs to 'benefit from, rather than be exploited by, modern GCCs'. In many respects, this position also constitutes an advance with respect to Fröbel et al.'s account of the origins of the NIDL. Unlike these authors, Gereffi (1995) recognises the development of 'flexible' automation as being at the centre of the technological changes at stake in the formation of the NIDL. However, though promising, this is exactly where the cause of Gereffi's explanatory problems lays. Indeed, Gereffi exclusively focuses on the impact that technological changes in production processes (i.e. 'flexible' automation) have allegedly had on plant sizes and

not on the effect they have had on industrial labour-force skills requirements. For this reason, Gereffi is unable to discover which specific East Asian institutional factors allowed the region's 'successful' integration into the modern GCCs. Moreover, empirical studies have convincingly shown that the development of 'flexible' automation only reduced production scales at product level (mainly by reducing the time setting and calibrating the systems of machinery) but not at plant and firm level (see, e.g., Alcorta 1999). These developments therefore have not resulted in the reduction of minimum efficient scales or minimum investment requirements, as suggested by Kaplinsky (1989) and Gereffi (1995) when explaining the expansion of the production of industrial goods for the world markets from developing countries in the last three decades or so.

Development of the system of machinery of large-scale industry and the NIDL

In order to overcome the limitations of the accounts on the development of the global economy reviewed in the previous two sub-sections, another approach to the NIDL was advanced by Iñigo Carrera (2008). In the first place, like Fröbel et al. (1980) and Gereffi (1995), this approach considers the process of capitalist development, the contemporary form of reproduction of human society, as being essentially global. In other words, the world market is not regarded as the 'context' in which national markets develop or simply the sum total of national economies interconnected through external trade and capital flows. National economies are seen as "organic elements of one all-embracing system, namely a world economy which is in fact a single world-wide capitalist system".[25] In the second place, and also in agreement with Fröbel et al. (1980), Iñigo Carrera (2008) considers nation-state policies not as autonomous forces that determine the specific structure of national markets and, therefore, of national processes of capital accumulation, but as mediations of the global unity of the process of capitalist development. It is here where Iñigo Carrera parts company with these authors. Unlike them, he locates the origin of the NIDL in the transformations in the production of relative surplus-value on a global scale.

Following Marx (1990), Iñigo Carrera (2008) sustains that in capitalism the development of labour productivity, the most potent lever of the process of capital

[25] See Fröbel et al. (1980: 8). As Marx (1990: 702) put it, '[…] the world market, whose integral parts are the individual countries.'

accumulation, takes its most advanced form in the mechanisation of large-scale industry, a process which reproduces in a differentiated form the characteristics of the labour-force as an active subject in the productive process. First, this process expands, as a condition for its own continuous development, the productive characteristics of the portion of the labour-force involved in scientific and technological development (i.e. directly or indirectly involved in the production of the increasingly mechanised means of production) and in charge of the technical organisation of the progressively more complex (and scientifically based) production processes. Secondly, it increasingly reduces, at the same time, the skills required to operate the machinery or to work as an appendage of the mechanised systems, and in the manual assembly of inputs and parts. Thirdly, it progressively transforms into a surplus for the needs of the process of capital accumulation, the portion of the labour-force replaced by the increasingly mechanised systems of machinery and not reabsorbed by the expansion of the scale of production. It is believed that this process of skills differentiation within the modern industrial labour-force has been on the basis of the recent differentiation of national processes of capitalist development.

Iñigo Carrera (2008) argues that though these processes are inherent to the development of labour productivity through the mechanisation of large-scale industry, their extension has been multiplied by the material form of technological developments taking place in the global capitalist economy since the mid-1960s and, crucially, after the mid-1970s 'microelectronics revolution'. Technological developments began then to be centred on the automation of the systems of machinery and the computerisation of their calibration for serial repetitive production.[26] These developments have accelerated codification of tacit knowledge, previously embodied in the manual industrial worker and largely acquired through lengthy on-the-job learning-by-doing processes, and its objectification as an attribute of the machinery.[27] Their effect on the structure of skills of the industrial labour-force has been twofold. First, they have accelerated the process of skills differentiation between those performing the most complex productive tasks and those performing the simplest ones, notably through the simplification of the operation of machines and the transformation of its operator into a controller or watcher.[28] Though this has been most notable in the 'continuous flow' or 'process'

[26] See Hoffman and Kaplinsky (1989); Alcorta (1999), for a synthetic introduction to these developments.
[27] See Balconi (2002).
[28] See Alcorta (1999: 164).

industries, like steel and petrochemicals, it has also been important in the serial mechanical industries, like motor-vehicles and white-goods.[29] Secondly, the new technological base has generated, as its own condition of existence, a multitude of production processes subjected to the intervention of low-skilled manual labourers, like the assembly of electronic appliances and microelectronic components. These have been at the base of the production of automated, robotised and computer-aided systems of machinery.

According to Iñigo Carrera (2008), then, these technological developments, and the revolution on the communications (e.g. telecommunications) and transportation methods (e.g. containerisation, larger ocean-going ships) to which they have given place, explain why industrial capital has been increasingly able to relocate internationally the different parts of labour processes where the relative price and characteristics of the different national labour forces (through their impact upon labour productivity and thus unit labour costs) best satisfies profit maximising requirements. This, for Iñigo Carrera, represents the specific characteristic of the NIDL. It does not mean that MNCs have been the single subject of this process as is sometimes argued by such authors as Schoenenberg (1988), Gereffi (1995) and Sklair (2001), among others. Irrespective of the 'nationality' of industrial capitals, this process, directly or indirectly, minimises total production costs and thus increases the rate of valorisation of global total capital, the *real subject* of the process of accumulation.[30] MNCs, the so-called 'national champions', the recently emerging 'global suppliers' and the 'production networks' established amongst them have constituted institutional mediations of the NIDL.[31]

Although entailing a leap forward in the internationalisation of productive activities and trade flows as Gereffi (1995) argues, these transformations, however, have not eliminated, according to Iñigo Carrera (2008), the importance of national economies and states. On the contrary, he claims that this process has been riding on the continued existence and reinforcement of the role of that national mediation as the basis on which capital has been able to internationally fragment the labour-force according to the different costs and characteristics of its members. In the first place, the relocation of simplified manual labour processes has been guided by the search for national labour-

[29] See Aglietta (1979: 122-30); Balconi (2002; 2007) for the general trend. See ILO (1963) for the steel and Watanabe (1987) for the automobile industries.
[30] See Fröbel et al. (1980: 46); Iñigo Carrera (2008: 65-8).
[31] See Starosta (2010).

forces whose attributes include not only relatively low wages but, in addition, the disciplined subordination to central and hierarchically organised collective (i.e. large-scale) work processes and the habituation to labour-intensive activities, such as the wet-rice cultivating Asian societies.[32] The latter, Iñigo Carrera (2008) argues, has been the main East Asian institutional singularity explaining the nature of the region's insertion in the NIDL. These features have particularly increased the productivity of East Asian labour when functioning as an auxiliary of the increasingly automated systems of machinery or in the manual assembly of electronic parts and components needed for their production.[33] In the second place, Iñigo Carrera suggests that this process has come about through the emergence and consolidation of particular national public policies and political/ideological institutions, such as those signalled by 'neoliberal' and 'statist' authors reviewed above. In those countries that, by the mid-1960s, began to act as sources of relatively cheap and disciplined labour-power to perform the simplest parts of the industrial labour processes (i.e. East Asian countries), state actions concentrated in the creation and later conservation of the necessary conditions to produce under that specific base. These included the promotion of exports, liberalisation of imports of inputs used in export activities, political repression of trade unions and, when necessary, the forced centralisation of private industrial capital or its concentration under public ownership (e.g. in Japan, Korea and Taiwan). In fact, the development of industrial productions using cheap and disciplined labour of rural origin to perform manual simple labour processes had already begun in Japan with the textile, clothing and footwear industries well before the advanced automation and robotisation of large-scale industry multiplied the bases for its expansion – as the 'industrious' revolution metaphor reveals.[34]

Furthermore, Iñigo Carrera (2008) claims that these processes have not been static as Fröbel et al. (1980) suggested in their original theorisation on the NIDL. On the

[32] Wet-rice cultivation has, among others, the following two characteristics. First, it is highly labour-intensive, notably during implantation and harvest periods. Secondly, whatever their extent and complexity and, consequently, degree of centralisation, all irrigation systems have required the 'cooperation at various levels between the farmers in a single water control unit' (Bray 1986: 67).

[33] It should be noticed here that this explanation contrasts with the already classical Lewis 'model' in that the latter assumes that low-cost surplus peasant labour can be transformed into internationally competitive industrial labour-forces under any circumstance. In other words, it assumes that low wages can always compensate for low productivity. For the Lewis 'model', see Lewis (1954).

[34] In effect, the emergence of the Japanese textile industry as a global leader in the early decades of the 20th century already resulted from the previous replacement of mule-spinning machinery with ring-spinning machinery. The latter made possible the replacement of male semiskilled workers with young female unskilled workers of rural origin. See Silver (2003: 87-9).

contrary, they have taken shape in a wide and constantly changing range of combinations of relative cost and characteristics/productivity of the national labour forces. The aforementioned technological transformations have involved an ever wider range of industrial sectors, including relatively advanced ones, such as the steel and automobile industries. Moreover, the local peasant surplus populations in certain East Asian NICs (in Japan first and then in Korea and Taiwan) were sooner or later exhausted and the domestic labour-forces began to be reproduced under new conditions which, in turn, have enabled them to perform increasingly more complex labour processes. Productions in specific industrial branches, then, expanded in some countries while contracting in others where new and more advanced sectors developed, following a rhythm determined by the evolution of those factors – i.e. the technological changes and the relative cost and productivity of national labour-forces within the region.[35]

The NIDL, Iñigo Carrera (2008) concludes, superseded the 'classical' international division of labour based on the determination of some countries as producers of raw materials for the world market (whether or not accompanied by an incipient development of industrial productions for the domestic markets) and the concentration of advanced industrial productions in others. The presence of distinctive natural conditions, enhancing the productivity of labour in primary productions or simply permitting them in the former group of countries, played a crucial role in their form of integration into the capitalist world division of labour. The NIDL has tended to revolve around the international fragmentation of the different segments of large-scale industry workforce. Some countries have tended to concentrate within their boundaries the great bulk of the skilled labour-force and therefore of the most complex labour-processes (mainly the USA and the European Union but also partly in Japan lately). Other countries have been mainly transformed into sources of *relatively* cheap and disciplined labour for simplified, though increasingly complex, productions (e.g. East and then Southeast Asia).[36] Yet, a third group of countries has remained integrated into the international division of labour as producers of raw materials and therefore as

[35] The 'flying geese' theory reflects only the second of these factors. See Kasahara (2004). Moreover, this theory does neither explain why industrial production for world markets using a relatively cheap and disciplined unskilled of labour force could develop in Japan in the first instance.

[36] This does not mean that the first group of countries has exclusively concentrated skilled workers. On one hand, immigration from 'Third World' countries has helped satisfy the local demand for a great part of the unskilled labour force. See Sassen (1988) on this point. On the other hand, the dismantling of the 'welfare state' and the introduction of neo-liberal policies there since the 1980s has also played its part in the increase in the local supply of this type of labour. See Iñigo Carrera (2008: 72-6).

sources of appropriation of the extraordinary profits available there in the form of land rent.[37] At the same time, countries in this third group have been increasingly transformed into reservoirs of surplus-population (for instance, most of Africa and parts of Asia and South America),[38] and, in some cases, have eventually became new sources of cheap and disciplined labour-power (e.g. recently parts of South Asia, North Africa and the Caribbean Basin).

Aims of the thesis

This thesis will investigate the Korean and Brazilian developmental and growth experiences between the mid-1950s and the mid-2000s through the approach to the NIDL and the global economy introduced in the previous sub-section. The thesis will propose that the distinctive integration of these two countries into the *evolving* international division of labour explains their different developmental patterns since the mid-1960s and their dissimilar economic growth performance since the late 1970s. It also accounts for their specifically different political institutions. This thesis will argue that the inability of the Brazilian economy to transcend its narrow integration into the world division of labour as a supplier of raw or semi-processed materials has not been due merely to inconsistent or poorly implemented economic policies and institutions. It has resulted from the possibility for industrial capital there to maximise its profits producing in an internationally small scale for domestic markets and compensating the resultant high production costs through the appropriation of a portion of the abundant agrarian and mining land rents. These have been particularly large in Brazil not only due to its massive territorial area but also due to the relatively favourable natural conditions prevailing there for the production of several raw materials.[39] This thesis will also show that the Korean economy developed under the same specific base than the

[37] See Appendix A for an explanation of the determination of land rent in capitalism.

[38] The expulsion of the labour-force from the process of production and its transformation into surplus-population resulting from the increase in social labour's productivity not necessarily takes place where the 'labour saving' technical change is generated or implemented. When the technical change and the consequent increase in labour productivity are not evenly spread across national processes of accumulation, commodities produced under the new conditions in those countries where the technical change is generalised will, *ceteris paribus*, displace those produced under the old, obsolete conditions in those countries where the technical change is not implemented. The increase in the technical composition of capital and the consequent relative decrease in the demand for labour will then result in the increase, or relatively small decrease, in the demand for labour in the former, and the decrease in the demand for labour in the latter.

[39] See Iñigo Carrera (2006, 2007) for the original discovery of this specific form of capital accumulation in the analysis of the Argentinian experience.

Brazilian before the mid-1960s, complementing the limited land rent available for appropriation by industrial capital with the massive inflow of foreign aid and a portion of the profits normally freed by small agrarian capital. Subsequently world-wide technological changes associated with the computerisation and automation of industrial machinery changed Korea's 'competitive advantages' as they manifested themselves in sharp advances in the codification of technical knowledge and, thus, in the reduction of the tacit know-how and skills necessary to perform several industrial labour processes. This meant that industrial capital there began, by the early 1970s, to maximise its profits through the production of certain goods for world markets, taking advantage of the large local availability of relatively cheap and highly disciplined labour-power. Due to these (skill-replacing) technological changes and its own historical origin and productive characteristics, the Korean industrial workforce has become particularly productive when performing several simplified, though increasingly more complex, labour-processes as an appendage of the automated systems of machinery or in the manual assembly of components and parts.

The thesis will reconstruct the *singularities* of the processes of capitalist development in Korea and Brazil between the mid-1950s and the early 2000s in order to provide evidence in support of these hypotheses. In doing so, the thesis will also aim to support (both analytically and empirically) the general hypotheses about the functioning of the global economy presented above. The thesis will not only advance an alternative account of the limits of capitalist development in Brazil *vis-à-vis* Korea, but also explain the weaknesses of the process of economic growth and development in the latter as manifested in the severe 1997-98 economic crisis.

In order to test and support the hypotheses put forward above, the thesis is structured in two parts. The first part consists of four chapters, the first of which will present and describe the main characteristics and transformations of the economic, political and ideological forms taken by the process of capitalist development in Brazil and Korea from the mid-1950s to the mid-2000s. The second chapter of the first part will present key quantitative evidence supporting the analysis introduced in the preceding chapter. This quantitative analysis includes the measurement of land rent and the course of its appropriation by landowners and other social subjects. Evidence supporting the hypothesis regarding the specificity of capital accumulation in Brazil and Korea will come from the measurement of the magnitude of land rent appropriated by capital and from the assessment of its importance in supporting the process of

valorisation of capital. This chapter will also measure the size of net inflows of foreign credit and aid in both countries and assess their importance in supporting capital's rate profitability *vis-à-vis* the land rent. For these purposes, Chapter 2 revises pre-existing studies on these topics and advances an original model to pursue the relevant measurements. Appendix B and C at the end of thesis present the methodology and sources to estimate and reconstruct the time-series used in these measurements.

The third chapter of the first part will put forward some qualitative and quantitative evidence in support of the above mentioned hypotheses. The chapter summarises the main trends in the post-1950s processes of technological development on a global scale and their impact upon the structure of skills required from the industrial labour force. It also examines the specific cases of the global steel, automobile and semiconductors industries and traces their development in Korea and Brazil since the 1950s, analysing and comparing the bases for the valorisation of individual capital there. These sectors were selected because their development jointly expresses the main characteristics of the Korean and Brazilian processes of capitalist accumulation. The appendix attached to the chapter presents the methodology and sources used for the measurement of the determinants of the profitability of representative individual capital invested in these sectors in both countries. The quantitative and qualitative analyses presented in this chapter will show that Korea's competitive edge in world markets since the mid-1960s has sprung from the combination of relatively low wages and high labour productivity, in turn resulting from contemporary advances in industrial equipment automation and the characteristics of the local labour-force. They will also show how the specific characteristics of the Brazilian process of capitalist development have manifested themselves in a particularly limited type of industrialisation centred on the appropriation of a portion of land rent.

The last chapter of the first part, the fourth, puts forward a group of time-series expressing different aspects of the transformations in the process of capital accumulation in Brazil and Korea throughout the period under study. These time-series include measures of economic growth and industrial development, variables that show the type of integration of these economies in world markets, and others that reveal the evolution of the cost and quality of industrial labour-power. These time-series compare the evolution of these variables in Korea, Brazil and the USA. The chapter also includes a brief discussion of the structure and evolution of labour market institutions as

mediations of the conditions of purchase, consumption and reproduction of the labour-force, and thus of the specific forms of capitalist development, in these three countries.

In light of the findings and empirical evidence presented in the first part, the second part of the thesis puts forward a detailed political economy analysis of the historical development of Korean and Brazilian capitalism. This part analyses social and political processes, and their role in moulding the evolution of economic, welfare and labour policies and political/state institutions. It shows their intrinsic unity mediating the transformations in the specificity of the Korean and Brazilian processes of capitalist development as forms of realising the global integration of capitalism. The second part of the thesis is divided in five chapters each covering a period of approximately ten years: from the mid-1950s to the mid-1960s; from the mid-1960s to the early 1970s; from the early 1970s to the early 1980s; from the early 1980s to the early 1990s; and from the early 1990s to the mid-2000s.

The thesis ends with a chapter that synthesises the findings and offers some conclusions concerning the specific development of the processes of capital accumulation in Brazil and Korea, and on their long-term limits and potentialities.

Part I

The Specificity of the Brazilian and Korean Processes of Capitalist Development

Chapter 1

The State and Capital Accumulation in Brazil and Korea: An overview

The introductory chapter argued that national capitalisms are modes of existence of an underlying global process of capital accumulation. It also claimed that nation-state policies and institutions are manifestations (i.e. forms of realisation) of the process of capital accumulation and, therefore, mediate the global integration of capitalism through the specific determination of each national portion of world total capital.

This chapter will present a highly schematic analysis of the main specific economic and political characteristics of the Brazilian and Korean processes of capitalist development between the mid-1950s and the mid-2000s. This analysis intends to narrow down the general hypotheses regarding these countries' developmental experiences advanced above by providing a broad, highly stylised account of the trajectory of both societies during the fifty years under study. In doing so, this chapter will advance the main ideas developed in more detail throughout the thesis. The analysis pursued in the present chapter will also put forward some further elements in support of one of the main general theoretical argument advanced in the introduction to this thesis, namely, that political, institutional and ideological developments in both countries have realised the transformations in their economic formations and thus mediated the global integration and unity of capitalism.

1.1) Capital accumulation and the Brazilian state

By the end of WWII, the Brazilian state began to take an active role in the promotion of industrialisation. The methods it used did not differ *qualitatively* from those then implemented by other developing country states, including the Korean, trying to promote the local production for the domestic market of previously imported manufactured goods. The subsidisation of local industrial productions was the key method pursued by developing country states to achieve their *developmental* goals. Subsidies were allegedly used to compensate for the lower productivity of industrial labour due to the 'late-comer' status of these countries' industries and to speed-up the learning and catch-up process.[1] Subsidisation means, however, that resources from other

[1] See e.g. Amsden (1989); Kohli (2004).

sectors of the national economy or from outside it are transferred to a specific branch, in this case the industrial sector, to promote its growth and long-term development. Two issues arise when analysing the Brazilian experience, namely, the origin of the resources used to subsidise industrial capital and the duration of the subsidisation process.

It is sometimes argued that low wages were originally the main factor compensating for the low level of labour productivity and thus assuring industrial capital's normal valorisation in Brazil.[2] But, had low wages been enough, manufacturing firms would have produced for world markets instead of the protected domestic ones.[3] Inflows of interest-bearing capital (i.e. external credit), though re-established in the mid-1940s, were not quantitatively significant before the late 1960s strong expansion of the Eurodollar market. The idea that resources used to subsidise the industrial sector came from the agrarian sector, on the contrary, has received more widespread support.

It is generally agreed among specialists that economic policies in effect in Brazil between the end of WWII and the mid-1960s entailed a strong transfer of resources from the primary to other sectors of the economy to promote industrialisation. It is also frequently suggested that these transfers continued during the late 1960s and the 1970s, although with less intensity.[4] Much less support has been received for the argument that, though they were not important quantitatively during most of the 1980s, substantial transfers were effected during the post-1990, neoliberal period as is being argued in this thesis.[5] Strong differences arise, however, regarding the specific *qualitative* essence of these transfers of primary sector resources. Yet, the correct identification of the origin of these portions of social wealth is required not only to measure their *quantity* accurately but also to understand fully the underlying characteristics of the process, including its temporal extension.

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[2] See e.g. Anglade (1985: 55-6).

[3] See Salama (1978: 270-4); Jenkins (1984: 34). The almost constant expansion of local industrial productions and the continuous inflow of foreign investments in the manufacturing sector throughout most of the period under study rule out the possibility of persistent lower than normal profits in that branch of the Brazilian economy. Effectively, Newfarmer and Muller (1975: 144) showed that "Brazilian affiliates of U.S. firms experienced higher average rates of returns than comparably sized firms in the United States."

[4] See e.g. Syvrud (1974: 216-9); Oliveira (1986: 91-109; Graham, et al. (1987: 2-3); Carvalho and Brandão (1991a).

[5] Some authors recognise, however, the continuation of a 'policy-bias' against agriculture during the implementation of the Plan Real (1994-98). See e.g. Homen de Melo (1999).

Orthodox (i.e. neoliberal) authors, for instance, have argued that resources transferred to the industrial sector originated in 'agriculturalist's wealth'.[6] This opinion has been shared by some structuralist scholars who referred to it as the agrarian 'surpluses'.[7] That, however, could hardly be the case if those terms referred to a portion of the *normal* profits of agrarian capital. This, as any other productive capital, would have, on average, withdrawn from that sector of the economy, or contracted its scale of production, if it was not able to realise a portion of its *normal* profits and was thus not *normally* valorising there.[8] Given their magnitude, neither could those resources *normally* and solely come from the particularly low rural wages, notably before the promulgation of the 1963 Rural Worker Statute when they were around one-half of those paid in the manufacturing sector.[9] On the contrary, those resources could *normally* come from the remaining portion of the price of agrarian and mining goods, the *land rent*. Only the extraordinary profits (i.e. rents) available in the primary sector due to the monopoly over an irreproducible means of production, land, could be transferred to the rest of the economy without affecting the normal long-term reproduction of the primary sector. In Brazil, these rents have been particularly large due to the size of the country and the relatively favourable natural conditions for the production of raw materials prevailing in vast areas. Landowners, unlike agrarian capitalists, have had no choice but to 'accept', though not without resistance, the loss of a portion of the land rent as a condition to unproductively consume the rest of it. In the case of publicly-owned mining lands and water resources for electricity generation, the landowning state, could transfer the land rent to the rest of the economy without any political conflict whatsoever.[10]

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[6] See e.g. Gudin (1969).
[7] See e.g. Bacha (1978).
[8] On the contrary, agrarian production expanded continuously during those years. See Graham, et al. (1987: 8). Indeed, as Bacha (1978: 144) noticed, the fast expansion of coffee production during the period of high 'taxation' (i.e. 1947-54) is an indication that normal profitability was not being affected.
[9] Wage differentials between agricultural and industrial workers do not necessarily imply the payment of the rural labour-force below its value. Urban wages are normally higher than rural wages for, at least, two reasons. First, the cost of reproduction of the urban labour-force is higher than that of the rural labour-force because the productive attributes (skills) of former are more complex than those of the latter. Secondly, rural workers need, *ceteris paribus*, to consume comparatively less use values than their urban counterparts since they tend to have lower expenditures in transport, clothing, housing, etc. See Grinberg and Starosta (2009).
[10] The 'partnership' between landed property and industrial capital for the appropriation of land rent has been inherently problematic. Not only have they fought politically over the appropriation of the available rent. By lowering domestic prices of primary goods, the forms of land rent appropriation by capital have limited the intensive and extensive application of capital to land, and thus lifted a barrier to the growth of primary production and of the total rent available for appropriation. In other words, they have transformed

In Brazil, the process of 'subsidisation' of industrial capital's valorisation with a portion of land rent cannot be considered a form of 'infant industry' promotion, notably when the largest beneficiaries of that 'support' have been MNCs, and when it has extended well beyond the early stages of industrialisation. This process has constituted the *essential* characteristic of Brazilian capitalist development.

The accumulation of capital through the appropriation of a portion of land rent to complement *normal* surplus-value has come about through specific, though periodically changing, public policies as well as a wide range of economic and political institutions. These have mediated the transfer of primary sector surpluses to the rest of the economy and also the creation of the conditions necessary to allow their appropriation, mainly by industrial capital. In general terms, two types of mechanisms, indissolubly united, have given form to that process. Some policies have interrupted the turnover cycle of agrarian capital and separated from it a portion of land rent. These have included exchange rate overvaluation, taxes on commodity exports and state control over their domestic and international trade. All of these policies have transferred a portion of land rent to privately-owned industrial capitals, by setting domestic prices of raw materials below their international levels and, in the case of the overvaluation of the currency, by reducing the local price of foreign exchange for specific imports and profits repatriation.[11] These policies have also transferred a portion of land rent to the state not only directly (through the monopoly/control of foreign exchange markets and commodity trade or the taxation of raw material exports) but also indirectly (through the payment of relatively high import taxes and other duties with an overvalued currency). Simultaneously, other policies have allowed the appropriation of the separated portion of land rent by industrial capital either through 'market mechanisms' or direct state actions.[12] These have included the calibrated protection of domestic markets (stronger for final goods than for inputs and machinery), the provision of services, industrial inputs and credit at subsidised rates by state-owned companies and banks, and the regulated expansion of domestic markets through their activities (i.e. the purchase of locally produced goods at inflated prices and an oversized workforce). Though most of these mechanisms of land rent appropriation remained in effect during the entire period

into *marginal* portions of capital that, extensively or intensively applied on land, would have earned normal profits had rent-transferring policies not been implemented by the Brazilian state.

[11] Competitive pressures have passed the 'discount' from exporters to agrarian capitalists and from these onto landowners; and from internationally to domestically-traded commodities.

[12] What is said here for industrial capital holds, *mutatis mutandis*, also for its junior partners, namely, commercial and service capital.

discussed in this thesis, the specific policies and institutions involved in the process have varied significantly, expressing and mediating the objective conditions for the valorisation of capital prevailing in the Brazilian economy.

1.1.1) State-led process of import-substituting industrialisation (ISI)

Although several of the features that characterised the Brazilian political economy during the post-WWII era had been present before (e.g. the combination of an overvalued currency and selected market protection), it was only throughout the 1940s, with the withdrawal of most foreign capital invested in public utilities, that industrial capital became landowners' main partner in the appropriation of the land rent and that sate-owned enterprises (SOEs) began to play an active role in the process. Together, these policies and institutions promoted the full-scale process of ISI as a form of realising the appropriation of land rent by social actors (i.e. 'economic agents') other than landowners, notably industrial capital.

In effect, ISI policies and the populist regimes originally associated with them, both in their *nationalist* and *developmentalist* variants, did not constitute a 'model of development' implemented to solve an 'external restriction' (i.e. the decline in the terms of trade of Brazil's exports and the scarcity of external credit), to employ rural masses migrating to urban centres, or as a response to the emerging power of the industrial bourgeoisie and the urban working-class, as argued elsewhere.[13] Neither policies nor institutions introduced by the military regime after it took power in the mid-1960s entailed any structural departure from the previously implemented 'model' of accumulation. Both types of regimes (i.e. democratic/populist and military/authoritarian) expressed and mediated politically and ideologically the reproduction of a process of capitalist development based on the appropriation by industrial capital of a portion of the land rent.

The Populist Stage (1946-1964)

[13] See Tavares (1977), Cardoso and Faletto (1979) and Kaufman and Stallings (1989), respectively. The so-called 'external restriction' sprung from this specific form of capitalist development rather the engendered it. The ISI process began in Brazil in the late nineteen century; well before the 'external restriction' manifested itself. See Fishlow (1971).

As had been the case since at least the final part of the nineteenth century, between the end of WWII and the mid-1950s, the process of capital accumulation based on the appropriation of land rent gave place to the fast proliferation of small (by world market norms) nationally-owned industrial firms. In contrast to the pre-WWII experience, it also manifested itself in the creation of a large number of SOEs and developmental banks, in some cases through the nationalisation of foreign-owned companies in the public utilities and transport sectors. Though both types of capitals would subsequently support the valorisation processes of MNC subsidiaries, this stage in the development of Brazilian capitalism came about through the consolidation of a populist nationalistic regime, notably during the 'commodities boom' associated with the Korean War, when the land rent available to support the process of capital accumulation through industrialisation expanded strongly.[14] In the first place, the strong expansion of small nationally-owned firms and state-owned enterprises and banks needed to be represented ideologically and politically as first steps in the genesis of a process of economic development allegedly based on national autonomy and self-determination.[15] Moreover, wage increases and public welfare provision were also needed to upgrade industrial worker skills and make effective the enlargement of domestic markets for the expanding consumer goods output.[16] These developments, which were necessary for the reproduction of the process of capital accumulation under its specific form, realised through the consolidation of the so-called 'populist alliance' between the national bourgeoisie and the urban working-class.[17]

Through the mid-1950s, however, some of the features of Brazilian capitalism started to change when large flows of foreign capital began to arrive, attracted by the substantial growth of the domestic market that the enlarged land rent had allowed.[18] Unlike the previous period, which had created the conditions for the arrival of MNCs, this stage in Brazilian capitalist development could not be represented politically by a nationalistic government with an increasingly anti-foreign-capital rhetoric as the one in power in the first half of the decade. The 'populist alliance' thus became *developmentalist*.[19] To 'entice' MNCs, special concessions were then added to the

[14] See graph 1.1 at the end of this chapter for the evolution of international commodity prices. See also Radetzki (2006) for the analysis of post-WWII 'commodity booms'.
[15] See Skidmore (1986: 88-90) on the ideological positions associated with the populist nationalistic state.
[16] See Cardoso and Faletto (1979: 127-43); Wells (1983: 323-6).
[17] See Skidmore (1986, 54-62); Fausto (1999, 230-1).
[18] See Cardoso and Faletto (1979: 157-8).
[19] See Anglade (1985: 56-7); Skidmore (1986: 146-9).

previously implemented forms of land rent appropriation (e.g. exchange rate overvaluation, market protection and state sector activities). The Targets Plan (1956-60) launched to improve state provision of infrastructure and develop durable-consumer and capital goods industries provided the framework for this policy-shift.[20]

The establishment of MNCs producing durable-consumer, and later on, capital goods did not change the structure and underlying specific characteristics of the economy. Effectively, in sharp contrast to the strategies followed in their countries of origin or in other regions where they were then establishing (e.g. Canada, Western Europe and, later on, USA), MNCs did not open productive facilities in Brazil with the technical conditions needed for competition in world markets.[21] MNC factories had technical scales of production limited to the magnitude of the internationally small domestic market.[22] Newly established MNC subsidiaries compensated the extraordinary costs arising from their sub-optimal scale (for world market standards) by complementing their *normal* surpluses with a portion of the available land rent and of small-capital profits.[23]

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[20] See Kolhi (2004: 183) for an overview of the special treatment received by incoming MNCs.

[21] Until the 1980s, MNCs almost never exported a significant part of the production. For instance, in 1974, US MNCs in Brazil exported only 5.5% of their total output. On the contrary, US MNCs in Canada and Europe were, in 1970, exporting 19-23% of their production. See Avelãs Nunes (1990: 478-9). See also Salama (1978: 261-3).

[22] See Moran (2005: 284-6). The low average purchasing power of its relatively large population (60, 70 and 93 million in 1955, 1960 and 1970, respectively) limited the size of the Brazilian domestic market. The extremely high concentration of wealth made possible, however, the formation of a domestic market which during the mid-1960s amounted approximately to 10 million consumers with a consuming capacity similar to that of Western European inhabitants, alongside with 30 million consumers of significantly lower purchasing power. See Bacha (1986) who coined the term Belindia to refer to this situation. Though a market of that size could have been large enough to produce certain non-durable consumer goods, it was definitely not for durable consumer and capital goods. Indeed, by then, even national markets of around 40-50 million inhabitants of relatively high purchasing capacity were becoming small to accommodate minimum efficient scales of production, forcing Western European countries to merge their domestic markets. Moreover, Brazil was also characterised by having surprisingly low levels of concentration in the industrial sector. See Fajnzylber (1971: 285-7).

[23] "The valorisation of small capitals is not determined by the general rate of profit that governs the valorisation of normal ones, that is, those which have the scale to use the most advanced methods of production. Instead, it is governed either by the rate of interest that small capitals could yield if they closed down business and were turned into interest-bearing capitals (i.e. by the interest rate on the liquidation value of their productive assets, which is normally lower than the general rate of profit); or, ultimately, by the wage rate at which their owners would be paid if employed elsewhere. Now, if for whatever circumstances the price at which small capitals sell their product is below the price of production of normal capitals and above the price which regulates their own valorisation, small capitals could potentially appropriate an extraordinary profit. Their competition over its appropriation, however, would expand production and thus lower the commercial price of the product. The extraordinary profit would then be freed by small capitals and appropriated by those normal capitals with which they exchange on the market. In the case of small agrarian capitals selling their product directly, the surplus-value materialised in the extraordinary profits would be passed on to the consumers in the form of lower prices and would thus be ultimately appropriated by industrial capital in general under the form of lower wages for the same quality of labour-power." Grinberg and Starosta (2009: 766-7). See Marx (1981: 938-

However profitable for industrial capital, especially of foreign origin, since it could valorise using obsolete equipment, which in some cases was already amortised, and without investing in risky vanguard technological development, the reproduction of the Brazilian process of capital accumulation became structurally dependent on the evolution of the magnitude of land rent available for appropriation. This became necessary to compensate for the difference between local and world markets production costs, in turn resulting from the difference between local and world markets scales of production and their impact upon the technologies respectively used. Policies maximising the appropriation of land rent by industrial capital, the combination of an overvalued currency and market protection, precluded the production of manufactured goods for world markets. Moreover, by producing for domestic consumers, MNC subsidiaries became also able to valorise normally without competing with their parent houses and branches elsewhere.

The Military Regime Stage (1964-85)

By the mid-1960s, the political and ideological forms of realisation of the Brazilian mode of capitalist development would change again, this time more extensively. In 1964, a military coup d'état opened a new period in Brazilian politics, which lasted until early 1985. Nevertheless, despite the shared absence of democratic institutions, this period was far from uniform. In terms of economic and social policy patterns, as well as developmental and growth outcomes, it could be divided into four sub-periods the last of which marked the crisis of the 'state-led' process of ISI.

During 1963-66, the land rent available for appropriation in the Brazilian economy stagnated as a result of the fall in international commodity prices and two consecutive coffee harvest failures. At the same time, loan capital inflows became negative. Since the late 1950s, these had been incipiently complementing the land rent in sustaining the process of capital accumulation through ISI. The contraction of these sources of extraordinary social wealth manifested itself in the partial or total reversion of most of the policies and institutions that had been mediating their appropriation by capital. This policy-shift, which included exchange rate devaluation and a reduction in public sector employment, real wages and the amount of subsidies directly granted to

50, for the original discovery of this determination based on the analysis of small agrarian capitals; and Iñigo Carrera (2008: 121-136), for the generalisation to all productive capitals.

industrial capital, could not be administered by a government heavily supported by trade unions and some sectors of the local industrial bourgeoisie, as the one in power in the first part of the 1960s. A repressive military government with an orthodox economic policy-making team and an anti-populist ideology was far more suitable for that job. Inevitably, without those resources to support industrial sector's profitability and domestic demand, economic growth stagnated and unemployment mounted during the first years of military rule (1964-66).[24]

The second stage of the military regime (from mid-1967 to 1973) was marked, first, by a contraction and, subsequently, by a sharp expansion of the land rent available for appropriation, as the agricultural frontier expanded to the western part of the country and international commodity prices began to increase in the build-up to the 1973-74 'commodities boom'. Crucially, it was also marked by a substantial increase in the mass of external credits available to fund capital goods imports and SOE activities as Eurodollar markets boomed and large financial resources became available for Brazil.[25] As both sources of extraordinary social wealth expanded, some of the previously dismantled policies channelling these resources to industrial capital were reinstated. A period of fast growth (the so-called 'economic miracle') ensued.[26] The economic recovery, nevertheless, could not manifest itself in the re-establishment of democratic institutions. The land rent, now largely appropriated by capital through export taxes and state activities, contracted until 1971 and was thus partly complemented by a third source of extraordinary surplus-value: that arising from the squeeze of manual worker wages.[27] This development could hardly be supported by the 'popular sectors' of the Brazilian society. The 'hardliners' within the military thus took hold of the state apparatus while professional technocrats with *developmentalist* inclinations were in charge of economic policy-making. Fast economic growth was this time combined with strong political repression and the further strengthening of MNCs participation in the industrial sector. These elements solidified the emerging 'Triple Alliance' between domestic, foreign and state capital, which replaced the previous populist arrangements.[28]

[24] For an overview of the policies implemented during 1964-67, see Serra (1982); Lara Resende (1990).
[25] See Frieden (1987: 99).
[26] On the policies implemented during 1968-1973, see Anglade (1985).
[27] See Bacha (1977: 52-3); Zurron Ocio (1986: 8-11) on industrial wages evolution.
[28] See Cardoso and Faletto (1979); Evans (1979) for the analysis of these institutional developments.

The third stage of the military regime (1974-79) was marked by a sharp, though irregular, increase of the masses of land rent and interest-bearing capital inflows in the form credit available to sustain the process of capital accumulation. In general terms, these movements resulted from the early 1970s 'commodities boom' and the expansion of global credit supply to which the recycling of 'petrodollars' contributed.[29] With these resources in sharp expansion, the state-led developmental approach to policy-making received a strong revival through the implementation of the Second National Development Plan (1975-79), designed to deepen the ISI process by increasing the local production of industrial inputs and capital goods as well as the provision of infrastructure.[30] The exchange rate became again overvalued to complement export taxes as main forms of appropriation of the land rent by capital directly or through state intermediation. Subsidies to industrial exports increased sharply, this time focusing on durable-consumer goods like automobiles.[31] Economic growth proceeded strongly, though more erratically than during the previous, 'miraculous' period. As before, changes in the economic conditions manifested themselves in political and institutional transformations. A process of political 'distension' ensued and labour militancy increased, leading to a strong recovery of industrial wages across-the-board, crucially during 1976-80.[32] For the process of accumulation through the appropriation of land rent by industrial capital, universal wage increases were necessary not only to reproduce a labour-force undertaking increasingly complex and intensive activities, but also to expand the domestic markets for durable-consumer goods output.

The last stage of the military regime (from 1980 to 1984) marked the beginning of the crisis of 'state-led' ISI process. The second 'oil shock' was followed by a sharp rise in international interest rates and the concomitant reduction of the supply of credit to 'developing' countries. Crucially, it also initiated a period of long-term decline in non-oil commodity prices (only reversed partly after 2005).[33] With both the land rent in contraction and loan capital inflows in sharp retraction, most of the policies that had transferred these resources to industrial capital would be either reduced in their scope or

[29] See graph 1.1 for the evolution of international commodity prices. See Ruiz and Vilarubis (2007) for the recycling of 'petrodollars' and Kaminsky (2005) for the flows of capital to developing countries since the 1970s.
[30] See Batista (1992: 18-22).
[31] See Anglade (1985: 93).
[32] On the 1978-79 spike of working-class mobilisation, see Anglade (1985: 99-100); Skidmore (1985: 212-5).
[33] See graph 1.1 below. For the long-term evolution of commodity prices, see also Radetzky (2006); Ocampo and Parra-Lancourt (2010).

removed altogether during this period. The economy thus entered into its deepest crisis since the end of WWII. The previous process of political 'opening' came to a halt and trade union activism was increasingly matched with fierce political repression. In 1981-82, industrial wages thus started a process of strong contraction that partly compensated for the effect of the fall of state subsidies on capital's profits.[34]

1.1.2) Neoliberal stage of the ISI process

The early 1980s marked the beginning of a new orientation in public policy-making, namely, that associated with neoliberal structural reforms. However, despite the many changes in public policies, political institutions and their ideological representation thereafter, there was no structural departure from the earlier *specific* form of capitalist development. In other words, neoliberal economic and social policies, increasingly, though irregularly, implemented since the early 1980s, entailed a change in the *form* of reproduction of the Brazilian process of capitalist development not in its *essential characteristics*.

In general terms, with the combined mass of land rent and net interest-bearing capital (i.e. credit) inflows stagnating or growing more slowly than their requirement by capital, the previous scale of industrial production could not be sustained any longer. Policies that had been transferring these resources to industrial capital, thus sustaining its profitability, then slowly reversed into neoliberal programmes inspired by the so-called Washington Consensus. Import tariffs were sharply, though not universally, reduced while several SOEs were privatised (or closed altogether) and public sector employment and welfare expenditures were 'rationalised', thus eliminating some of the main forms of land rent transfer to, and appropriation by, industrial capital.[35] State policies supporting the process of ISI (e.g. the combination of an overvalued currency and market protection, subsidised state-bank loans, tax credits) became thereafter increasingly selective and limited.[36] Industrial capital remained, nevertheless, largely domestic-markets-oriented and, after the 1990s large-scale privatisation programme, began to compete, in the appropriation of the land rent, with capital invested in

[34] See Anglade (1985: 104-5).
[35] Neoliberal policies also realised, as in the industrially advanced countries, the acceleration in the process of differentiation of the productive attributes of the distinct portions of the Brazilian workforce.
[36] See Baumann and Paiva Franco (2002) for the importing-substitution experience during 1995-2000; Bonelli and Veiga (2003) for an analysis of sectoral policy during the neoliberal 1990s.

previously state-provided public utility services. Inevitably, without the necessary resources to compensate for the permanently growing productivity gap, industrial value-added, and to a lesser extend GDP, stagnated during large parts of the post-1980 period.

The realisation of these trends depended on the evolution of the extraordinary social wealth available for appropriation relative to its requirement by capital.[37] As the land rent contracted and capital outflows enlarged, the 1980s witnessed the 'terminal' crisis of the extended, 'state-led' ISI process through which capital accumulation had come about since the end of WWII. Conversely, during the middle part of the 1990s, as the land rent expanded again, thanks to commodity price and output increases, and interest-bearing capital flows to developing country economies like Brazil were re-established, the reproduction of the process of capital accumulation through limited, 'neoliberal' ISI enjoyed a mild recovery. The exchange rate then became, again, strongly overvalued and some forms of domestic-market protection and industrial capital subsidisation were enhanced while others reintroduced. This recovery, however, was sustained on increasingly weakened bases. The extended reliance on foreign loans and state-asset sales, as well as a sharp wage squeeze, were now necessary to supplement the land rent in sustaining capital's valorisation and the limited process of accumulation through ISI. Yet, these trends, which worsen during the global slowdown of 1999-2002, were partly reversed after 2004. Since then, the sharp expansion of the land rent associated with a new global-market 'commodities boom' and, to a lesser extent, the renewed inflow of external credits have given place to a strong surge in process of capital accumulation.

The long-term contraction of the combined masses of extraordinary social wealth, relative to capital's need of them to valorise normally, also resulted in a change in political institutions. Democratic institutions of government were reintroduced during the short-lived economic recovery of the mid-1980s. The sharp expansion of the industrial reserve army thereafter, however, made any return to politically-expensive authoritarian regimes unnecessary to force real wages down when the economic conditions worsened sharply (e.g. in 1988-92 and 1998-2003). Moreover, the military's nationalistic ideology made them relatively unsuitable to sell indiscriminately state-owned assets to foreign investors and, crucially, remove most forms of domestic market

[37] See graphs 1.1 and 1.2 below for the evolution of international commodity prices and of key variables in US credit markets. It can be seen in Kaminsky (2005) that, with the exception of the 1980s, interest-bearing capital flows to developing countries broadly mimicked the evolution of credit growth in the USA.

protection. Both of these policy measures were key parts of the reproduction of the process of capital accumulation through a limited ISI. Yet, despite sharing an overall neoliberal approach to economic and social policies, there have also been significant variations in the political constitution and orientation of post-mid-1980s democratically-elected governments. In general terms, more openly neoliberal governments have been in power during periods of relatively slow growth of the land rent (i.e. the 1990s) while pre-1964-style populist arrangements have governed during periods of relatively strong growth of the land rent (i.e. most of the 2000s).[38]

1.2) Capital accumulation and the Korean state

Despite their many differences, most scholars specialised in the political economy of Korea usually agree with the following claims. First, that before the late 1960s a significant transfer of resources from the agrarian sector to the rest of the economy, notably manufacturing, took place, supporting a 'mild' or 'easy' ISI process. Second, that through the 1960s the economy experienced a structural transformation moving from a mainly import-substituting to a largely, but not exclusively, export-oriented type of industrialisation. Third, that, as this transformation began to occur, the state became 'developmental', however this is defined.[39]

1.2.1) 'Mild' ISI process

During the second part of the 1940s, and for most of the 1950s, Korean society was either recovering from a military conflict or fighting one. Nevertheless, both during recovery periods – i.e. 1945-1950 and 1954-59 – and, arguably, also during the first half of the 1960s, the structure of the local economy did not differ *qualitatively* from its Brazilian counterpart, where capital was accumulating through the appropriation of a portion of primary sector surpluses. As in Brazil, this process came about through the implementation of a set of policies 'promoting' import-substituting industrialisation.[40] However, with a significantly smaller land rent available for appropriation than in

[38] For the evolution of public policies during the neoliberal era, see Novelli and Galvaio (2001-2); Saad-Filho and Morais (2005); Saad-Filho and Morais (2011).
[39] See authors reviewed above. See also Moon and Kang (1991a) on intersectoral income transfers.
[40] On Korean ISI during this period, see Westphal and Kim (1977: 1-2); Krueger (1979: chapter II); Hamilton (1986: 33-5).

Brazil, when accumulating under that specific form, capital was incapable of sustaining in Korea a process of industrialisation of similar extension and complexity as the Brazilian. Not even when land rent was complemented with a portion of small agrarian capital profits and massive US aid inflows. Effectively, the agrarian reform pursued in Korea in the ten years following the end of WWII transferred land ownership to the rural worker but did not end with the appropriation of a portion of agrarian wealth (the land rent and even a portion of small agrarian profits or of the value of labour-power) by other economic sectors. It just got rid of the old landowning class.[41]

The ISI process in Korea presented many of the features that characterised the Brazilian experience. The overvaluation of the national currency became a key method for channelling primary sector surpluses and foreign aid to industrial capital and its junior partners. A combination of import taxes and, crucially, quotas protected domestic productions of non-durable consumer goods and thus allowed industrial capital to effect the appropriation of primary sector surpluses and foreign aid.[42] The transfer of resources from the primary sector to the rest of the economy in Korea during this period also took some forms which were not then present in Brazil, like state partial or full control over the domestic trade of rice, barley and fertilizers. Through its influence over the price of these goods, the state could either supplement the overvaluation of the currency as a form of appropriation of agrarian surpluses by industrial capital, or compensate for its negative effects on small capital profits and accumulation capacities. The portion of these resources appropriated by the state were used to provide subsidised credit to industrial capital, to enlarge the domestic markets through public sector employment and to finance investments in SOEs and infrastructure, thus constituting a further form of resource transfer to industrial capital.[43]

In contrast to the Brazilian experience most industrial capital in Korea during this period was domestically-owned. Given the small size of the land rent, and thus of the domestic market, investments by industrial MNCs in productions for local consumers remained relatively low by developing world standards, despite state efforts to promote them.[44] Moreover, the conditions to produce in Korea industrial goods for world markets, using the internationally cheap and highly disciplined local labour-force,

[41] See Grinberg and Starosta (2009). On Korean land reform, see Ban et al. (1980: 283-97); Hamilton (1986: 29-31); Jeon and Kim (2000).
[42] See Frank et al. (1975: 36-8); Westphal and Kim (1977: 2).
[43] See Hamilton (1986: 34); Kolhi (2004: 77).
[44] See Westphal and Kim (1977: 8).

were not yet fully present. Hence, the limited development of industrial productions for the domestic market, its alleged 'mild' ISI process, did not result from the 'balance' and 'non-dogmatism' of policy-makers, the abstractly determined size of the domestic market, or the 'non-purposiveness' of the government, as argued elsewhere.[45] This limited ISI process resulted from the relatively small magnitude of the masses of extraordinary social wealth available to support it.

The 'state-led' emergence and consolidation of the local industrial and commercial bourgeoisie during the immediate post-WWII period came about in Korea through the ideological form of being in the interest of national autonomy goals, including, in this case, the fight against the northern 'communist' threat. Moreover, this was exacerbated, *vis-à-vis* the Brazilian experience, by, and was needed to offset politically, the country's heavy reliance on foreign aid inflows to fund state activities, and to thus complement the limited land rent. Conversely, the relatively insignificant role played by MNCs in the Korean economy meant that this type of state ideology remained unchallenged throughout the ISI period. Finally, the shallow development of the industrial sector and the availability of a large surplus population, the Korean process of capitalist development through its ISI stage made increases in industrial wages unnecessary for its normal reproduction. In Korea, there was no economic need for a Brazilian-style 'populist alliance'.

1.2.2) Export-oriented industrialisation (EOI)

Through the mid-1960s, the structure of the Korean process of capitalist development began to experience a profound transformation. The emergence of the New International Division of Labour was creating the possibility to produce in Korea industrial goods for world markets, taking advantage of the vast availability of relatively cheap and disciplined labour-power which was particularly suitable to perform production tasks as an appendage of the machine or in the manual assembly of components and parts. Moreover, given the relatively small size of primary sector surpluses and the post-late-1950s continuous reduction of foreign aid inflows, as US balance-of-payments problems became permanent, the mass of extraordinary social wealth available to sustain capital accumulation through ISI stagnated and the process

[45] See Ranis (1995), Balassa (1988) and Kohli (2004), respectively.

of economic growth was already reaching its limit. The political forms of realisation of the Korean process of capitalist development began then to change, mediating the transformations in its economic forms.

Before the early 1970s, changes occurring in the Korean economy resulted largely from the increase in the price of Japanese industrial labour-power, as the global process of capital accumulation began to create the conditions for the transformation of Japanese capital into a producer of certain consumer-durable goods, industrial inputs and equipment for world markets.[46] The Japanese labour-force began then to be replaced by new sources of relatively cheap and disciplined labour-power available in East Asia to perform simple manual labour-processes like those in the textile and apparel industries.[47] The skill-replacing technological changes permitting the flourishing of these industries in this region were already in place for several decades. Since the early 1970s, however, the transformations experienced by the Korean economy have largely resulted from the direct impact of contemporary processes of skill-replacing technological change and the concomitant consolidation of the NIDL.

Three types of policies and institutions began to mediate the structural transformation and long-term reproduction of the Korean process of capitalist development. Some of these policies and institutions facilitated the export orientation of local industrial capital. Others accelerated the concentration of industrial capital in the masses required for world-markets-oriented productions. Finally, another set policies and institutions helped reproduce the local workforce with the characteristics needed for those activities.

The 'Developmental state' stage of EOI (1965-1979)

As noted, the transformation of the specific characteristic of the Korean process of capitalist development came about through changes in state institutions, policies and their ideological forms of realisation. In effect, during the second part of the 1960s, trade policies began to change in order to make possible an increase in the volume of exports to off-set the reduction in aid inflows. The exchange rate was devalued, tariffs on imports used in export productions were largely scrapped, subsidies on exports were

[46] See Kolhi (2004: 106).
[47] See Chibber (1999: 330).

increased and supporting organisations strengthened.[48] Moreover, when foreign capital inflows recovered during the latter part of the decade, this time under the form of private commercial loans, resources were not used to complement the land rent in sustaining an internationally uncompetitive domestic-markets-oriented industrial capital, as occurred in Brazil. Taking advantage of the large local availability of cheap and highly disciplined labour-power, external credits were transformed into industrial capital producing consumer non-durable goods for world markets. Export-oriented industrial productions expanded strongly and economic growth accelerated thereafter.[49]

The new economic formation of Korean society was based on the availability of large pools of relatively cheap and highly disciplined labour-power of peasant origin that was suitable for unskilled labour-intensive productions. State policies thus also concentrated on the conservation and enhancement of these conditions. During this initial stage (i.e. 1965-69), the transfer of resources from the agrarian to the industrial sector continued and food prices, and thus wages, remained low and contained.[50] Moreover, under 'national security' arguments, independent trade unions and liberal political organisations were banned and their members persecuted while democratic institutions were severely limited, thus removing any resistance to the relatively slow growth of real wages and the imposition of long working-days under hazardous and harsh conditions, notably to female and unskilled workers. These repressive institutions, like their predecessors during the Japanese colonisation, reinforced aspects of Korean society and history (including the authoritarian colonial experience) that enhanced worker discipline and favoured the consolidation of 'segmented' labour markets, namely, its highly hierarchical and patriarchal structure and the habituation to harsh working conditions.[51]

By the early 1970s, however, the automation and computerisation of industrial equipment had already extensively affected large-scale heavy and chemical industries (HCIs), and the Korean economy began to be directly affected by these transformations. Not only had the Japanese workforce continued its process of upgrading and appreciation while being used to perform increasingly complex labour-process. Technological advances had further simplified several industrial activities, notably in

[48] See Brown (1973: 137-8; 148-9); Frank et al. (1975: 47-9); Michell (1988: 61-8); Haggard et al. (1991: 865-7).
[49] See Michell (1988: 29-43); Krueger (1979: 99-104, 131-8).
[50] See Hart-Landsberg (1993); Moon and Kang (1989: 200-3). The systematic transfer finished in 1969/70 with the implementation of the 'Positive Grain-Price' policy.
[51] See Choi (1989: 22-3, 60-4); Bello and Rosenfeld (1992: 25-8); You (1995: 123); Koo (2001: 46-54).

process or continuous flow HCIs, thus allowing the use of a less skilful and experienced, and thus cheaper, workforce to perform them. The Korean economy had access to a large surplus population that not only commanded very low wages by international standards but, as the Japanese, was also highly disciplined, used to endure harsh working conditions during long hours and easily trainable.

The 'deepening' of the industrial base, resulting from the possibilities created by the NDIL and the characteristics of the local workforce, emerged through a major transformation in the political forms of realisation of the Korean process of capitalist development. Unlike in the light industries, the development of world-markets-oriented HCIs required not only protection during their implantation and maturation stages, but also, and crucially, the concentration of capital on relatively large scales, notably for the size of the local economy. The rapid creation and development of individual capitals in these sectors thus required more extensive forms of state intervention than hitherto. To develop some sectors, the state centralised capital under its ownership. In other cases, the state forced the centralisation of privately-owned capitals, thus avoiding 'unnecessary' competition. In all cases, state-run banks supplied individual firms with subsidised capital in the quantities (i.e. degree of concentration) necessary for competition in world markets through the introduction of vanguard technologies. Led by the strong expansion of HCI production and exports, Korean economic growth remained strong during the 'big push' of the 1970s.[52]

These transformations in public policy orientation came about through the further concentration of political power in the executive branch of government, and the formation of an authoritarian, 'developmental' state. A new Constitution and several *ad-hoc* laws were then sanctioned, giving dictatorial powers to the President, crucially to decide economic policy and to control any form of labour unrest.[53] Moreover, a state-orchestrated campaign of mass indoctrination and disciplining was launched to complement the massively attended programmes of technical education in reproducing an industrial workforce with the productive characteristics required to work as an appendage of the machine or in large-scale assembly operations.[54]

The Neo-liberal stage of EOI (since 1980)

[52] See van Liemt (1988: 11-3).
[53] See Koo (2001: 54-68).
[54] See Choi (1989: 181-92); Bello and Rosenfeld (1992: 28-34).

The 1979-82 increase in international interest rates and concomitant global economy recession affected the Korean economy as much as the Brazilian. However, in contrast to the Brazilian experience, the strong expansion of high value-added industrial exports, resulting from large increases in labour productivity, allowed the Korean economy to grow robustly during most of 1980s while reducing sharply its large external debts.

As occurred in many other developing countries, the early 1980s global economy recession triggered in Korea a process of financial and trade liberalisation.[55] This process, however, did not express, as in Brazil, the unsustainability of a highly diversified, domestic-markets-oriented industrial sector. On the contrary, liberalising reforms in Korea resulted largely from the 'maturation' of its industrial sector, which no longer required extended market protection and state support for its normal valorisation. As in most reform processes, the international-cum-local crisis precipitated and accelerated these 'free-market' reforms. The fact that many of them were deepened rather reversed when the context improved shows, however, that their necessity for the process of capital accumulation transcended the immediateness of the crisis that triggered them. Nevertheless, 'nascent' industrial branches (e.g. electronics and motor-vehicles) remained strongly supported[56] while developing the capacity to compete in world markets under the same specific base as the HCIs, namely, the use of a *relatively* cheap and highly disciplined labour-force.[57] Effectively, like the HCIs before, the emergence of durable-consumer good production for world markets resulted from the further increase in the cost of the Japanese labour-force, contemporary advances in the automation and computerisation of large-scale manufacturing associated with the 'microelectronics revolution' as well as the previous improvements in the quality of the local workforce.

Neoliberal reforms in Korea also contrasted with the contemporary experiences in the industrially advanced countries where they mainly realised the acceleration of the process of differentiation in the conditions of reproduction of the industrial labour-force within these societies. During most of the 1980s, wage differentials among industrial

[55] For an overview of Korea's liberalisation programmes during the 1980s and 1990s, see Gills (1996); Pirie (2008: 76-104).
[56] See Chang (1998: 740). See Green (1992: 416) for the automobile industry; Mathews and Cho (2000: 119-35) for the high-tech industries.
[57] See Bello and Rosenfeld (1992: 113-18); Williams (1994: 61-3).

workers declined, albeit from highly unequal bases.[58] Manual worker wages increased strongly across-the-board as the industrial base 'deepened' and with it the demand for more skilled labour-power which could no longer reproduce normally with payment conditions corresponding to its peasant origin (i.e. with wages which were sufficient to reproduce a surplus peasant population at subsistence levels but well below the cost of reproducing a semiskilled industrial workforce). This process of wage realignments came about through the end of open political repression, the restoration of democratic institutions and the subsequent sharp increase in working-class activism. Labour's involvement in party politics, however, has remained limited thereafter.[59]

During the 1990s, the Korean economy continued its growth process and its 'upgrading' path to high-technology industries as a form of realising the global unity of the process of capitalist development through the NIDL. As had been the case during its earlier industrial development, the emergence of these sectors resulted not only from previous improvements in the quality of the local labour-force, as often claimed, but also, and crucially, from its low cost (relative to established producers) and high productivity, partly ensuing from the further automation of production processes and the consequent simplification, standardisation and routinisation of factory work.[60]

Moreover, new developments then further reduced the overall degree of state intervention in the Korean economy. Not only the maturation of most industrial sectors and the existence of highly concentrated private capital meant that both the average level of protection and of state's direct involvement in industrial production could be reduced further. Capital account liberalisation became also necessary to capture a portion of the expanding global credit supply; vital to fund the rapid growth of Korean industrial firms in light of the emerging competition in world markets posed by firms located in countries with large supplies of cheaper and, arguably, equally disciplined labour-power (e.g. China and Southeast Asia). Indeed, when these resources contracted sharply in 1997-98, as international credit markets tightened, the Korean economy entered into its most severe crisis since the end of the 1950-53 Civil War. Yet, by 1999 the economy was already in the path of a new export-led recovery. The bases for this growth, however, have been weaker than ever before. Unlike the previous periods, the post-crisis expansion of industrial exports has been sustained with a strongly

[58] See Lindauer and Lee (1997: 60-4).
[59] See Koo (2001: 153-87).
[60] See Brown and Campbell (2001) for the microelectronics industry.

undervalued currency and increasing, rather than decreasing, labour market precariousness.[61]

1.3) Summary and conclusions

The introductory chapter argued that in order to grasp fully the Brazilian and Korean developmental and growth experiences, it is first necessary to account for the dynamics of global capitalism and the resultant transformations in the international division of labour. These, together with local factors that particularly affect the conditions for the valorisation of capital in different branches of production, explain the specific characteristics of capitalism in each country. The chapter has also argued that, in capitalism, nation-state policies and institutions mediate the integration of the global economy through the specific determination of national processes of capitalist development.

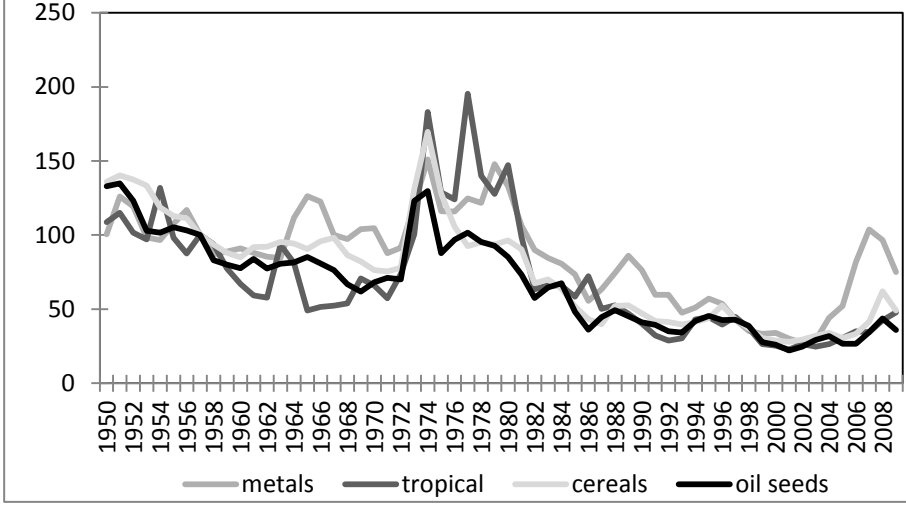
With these main claims in mind, the present chapter reviewed the main economic, political and ideological features of the processes of capitalist development in Brazil and Korea between the mid-1950s and the mid-2000s, and proposed four main arguments. First, the chapter proposed that the process of capital accumulation in Brazil has revolved, throughout the entire period, around the appropriation of a portion of the land rent available in the economy. Secondly, the chapter claimed that while, before the mid-1960s, capital accumulated in Korea under the same specific base as in Brazil (though the land rent was complemented there with a portion of small agrarian capital profits and foreign aid), afterwards its accumulation began to revolve around the production of specific industrial goods for world markets using the *relatively* cheap and disciplined labour-force available in the country. Thirdly, the chapter argued that these distinctive specific characteristics explain their different patterns of development and integration into the global economy since the mid-1960s and their divergent post-1980 growth records, as well as their distinct political and economic institutions. Finally, the chapter suggested that both specific forms of capital accumulation have, through their transformations, realised the global unity of the process of capitalist development through the evolving IDL.

[61] See Aizenman and Glick (2008) on exchange rate policy. See Chang and Chae (2004) on labour market developments.

The next three chapters will provide analytical and empirical evidence substantiating and supporting the main arguments schematically advanced in this chapter. In light of the findings presented in the first part, the second part of the thesis will put forward an analysis of the historical development of social and political processes in Korea and Brazil, and their role in shaping the evolution of economic, welfare and labour policies and political/state institutions. This historical analysis will develop in detail the main lines presented in this chapter and will show the intrinsic unity of these processes, revealing specific transformations in both countries as part of the realisation of the globally integrated process of capitalist development.

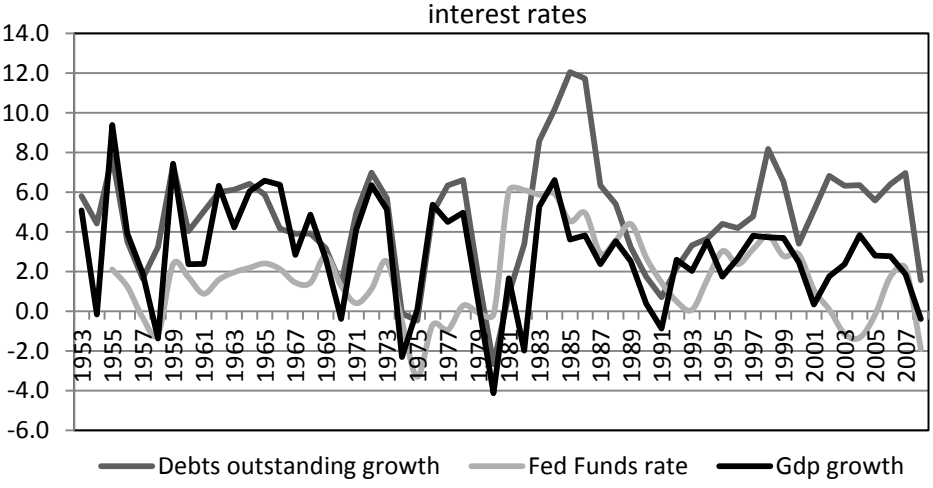
Appendix A1

Graph 1.1
International commodity prices (1957=100)



Source: Table C.20 in Appendix C.

Graph 1.2
USA: Debts outstanding growth, GDP growth & Fed Funds real interest rates



Source: Tables C.3 and C.36 in Appendix C; IMF International Financial Statistics for Fed Funds rate

Chapter 2

Measuring land rent and intersectoral income transfers in Brazil and Korea

The present chapter focuses on the measurement of the magnitude of the resources transferred from the primary sector, notably land rent, to the rest of the economy, the industrial sector in particular, and of their relevance (i.e. relative importance) in supporting the processes of capital valorisation and accumulation in both countries throughout the period studied. This quantitative analysis will provide support for two of the claims made in the previous chapter. First, that the processes of valorisation of industrial capital in Brazil during the entire period and in Korea before the late 1960s were heavily reliant on the appropriation of a portion of primary sector surpluses. Secondly, that as the Korean economy undertook its structural transformation throughout the second part of the 1960s, the transfer of resources reversed and the primary sector became a net recipient of income from the rest of the economy. The chapter also presents the methodology to measure the absolute magnitude of land rent in each country. The chapter closes with a comparison of the magnitude of primary sector surpluses appropriated outside this branch of the economy with that of the other main source of extraordinary social wealth available to support the process of capital accumulation, namely, the inflow of foreign financial resources in the form of aid and credit. For these purposes, the methodology developed by Iñigo Carrera (2007) based on the Argentinian experience will be adapted for the Brazilian and Korean cases.

2.1) Intersectoral transfer of resources in the Brazilian and Korean economies

Appraising the magnitude of primary sector surpluses involves the measurement of several variables. First, it involves the measurement of the magnitude of the primary, notably agrarian, sector surpluses transferred to other branches of the economy. This is done in section one, following the effect of each of the specific economic policies under which that transfer has come about in each country. Secondly, it involves the measurement of the magnitude of capital, both fixed and circulating, yearly advanced

for valorisation economy-wide, and in the industrial and agrarian sectors.[1] Thirdly, it involves the measurement of the magnitude of net surpluses (i.e. profits or surplus-value) accruing to total capital of society (i.e. social capital) and to its industrial and agrarian portions. These, done in sections two and three, respectively, will make possible the measurement of annual rates of profits of social, industrial and agrarian capitals, and an assessment of the relevance of the transferred land rent in sustaining their respective processes of valorisation, pursued in sections four and five. Furthermore, these variables are also necessary to measure the portion of land rent appropriated by landowners and thus the total magnitude of land rents in both countries.

2.1.1) Measuring the portion of primary sector surpluses (land rent and small agrarian capital profits) appropriated by social actors other than landowners and small capitalists

The transfer of income from the primary sector and its appropriation by industrial capital in Brazil and Korea during the period under study came about through the implementation of specific economic policies. It was seen in the previous chapter that the overvaluation of the national currency and the taxation of commodity exports have been the main forms of transfer of resources out of the primary sector in Brazil. In Korea, the former policy, combined with state control over the domestic trade of rice, barley and fertilizers were the main methods of 'taxation' of the existing agrarian surpluses before 1970 and of the subsidisation of the sector thereafter.

Several attempts have been made to measure the magnitude of the resources transferred from the agrarian sector to the rest of the society in Brazil and Korea. One of the most widely consulted is a cross-country study coordinated by the Schiff and Valdes

[1] The computation presented in this chapter will *strictu sensu* measure the agrarian land rents in Brazil and Korea, both the portion appropriated by landowners and by others, and will add to that the portion of the mining land rent materialised in exported goods, in both countries, and in the local consumption of iron ore, in Brazil. This is so for various reasons. First, the estimation of the stock of capital invested in mining production in these countries, which is required to measure the land rent appropriated by landowners, is beyond the scope and possibilities of this thesis. Secondly, mining productions were in both countries largely under state control during most of the period under study. It is highly probable that the land rent appropriated by the landowning state was not significant during these periods, as it was transferred to capital through low output prices, overstaffing and highly-priced purchases of inputs. Thirdly, for the purpose of the analysis pursued in this thesis, the most relevant part of the land rent is that appropriated by other economic actors than landowners. Fourthly, not including the mining land rent materialised in exported goods and, in Brazil, domestically-consumed iron ore would have underestimated the computation, in Korea before the mid-1960s and in Brazil after the mid-1970s. Fifthly, the land rent materialised in domestically-consumed mining goods in Korea is not included in the measurement because almost all mining production was exported there during the relevant period (i.e. 1955-64).

(1991) for the World Bank, 'The Political Economy of Agricultural Pricing Policy'. This major project covered the experiences of several countries in Asia, Africa and Latin America during 1960-84, including the two countries under study. The methodology used in these studies is not radically different from the one pursued here. Effectively, in the cases of Korea and Brazil, the World Bank study analyses the effect of each individual policy on the flow of income from and to the agrarian sector. Two key methodological differences prevail, however, between these studies and the present thesis. First, and crucially, there is the question of the correct identification of the object to be measured. As said, the World Bank study proceeds by measuring every single flow of resources in and out of the agrarian sector in order to obtain the net movement. In so doing, it misses the main point at stake, namely, the measurement of the movement of one specific type of social wealth (i.e. income), land rent. In effect, the issue is not about measuring every type of intersectoral income transfer but the effect of state policies on the appropriation of the extraordinary profits earned in the primary sector due to the monopoly of an irreproducible means of production, land. Thus the World Bank study includes in the equation every kind of tax, explicitly or implicitly, paid and subsidy received by the primary sector, yet ignores the fact that the tax system mediates the equalisation of the rate of profit among different portions of social capital and thus the unity of the national processes of capital accumulation. In a nutshell, the goal is to identify those taxes that fall on specific portions of social capital and to analyse whether or not they affect their normal valorisation - i.e. whether they fall on normal or supernormal profits. Secondly, the World Bank study also presents problems related to specific instruments of measurement. Among the most important, the following can be identified. In the Brazilian case, the Bank study grossly underestimates the overvaluation of the national currency throughout the period 1960-1980 and, thus, the magnitude of primary sector wealth appropriated in other sectors of the economy. In order to measure the degree of overvaluation of national currencies, the World Bank uses the so-called 'free-trade equilibrium exchange rate'. The problem with this practice is that it suffers from a problem of circularity. Indeed, the 'free-trade' equilibrium exchange rate is calculated as the exchange rate that would balance the trade account of the balance-of-payments if no distortions had been imposed on external trade. In other words, it attempts to measure the overvaluation of the currency using variables, such as the supply and demand for foreign currency and their respective elasticities, whose magnitudes are determined by the degree of overvaluation itself. Moreover, in the

Bank's study, the effects of export taxes and the overvaluation of the currency on domestic prices are not taken into account. Neither is it effect of the high prices of agrarian machinery in Brazil. For these reasons, the thesis attempts a new measurement of the magnitude of land rent taxed out of the primary sector and appropriated by the rest of society (i.e. capital) in Brazil and Korea between the mid-1950s and the mid-2000s.

As mentioned before, the measurement of the amount of resources (i.e. income) transferred from the primary sector to other parts of the economy is done through the measurement of the magnitude transferred through each of the individual economic policies that have made this process effective.

2.1.1.1) Primary sector surpluses appropriated through the overvaluation of the currency

The overvaluation of the exchange rate has been a central state policy effecting the appropriation of land rent by industrial capital. Through this mechanism, exporters are forced to sell the foreign exchange earned in global markets below its value, thus losing a fraction of export price. For this policy to be sustainable in the long-run, the price of exported goods must contain a surplus profit, land rent in the case of primary commodities. In effect, when a national currency is overvalued, exports of goods that do not bear land rent can only be sustained, beyond the short run, through the provision of subsides that compensate for this. In the absence of such subsidies, as in the case of commodity exports in Brazil throughout the period studied and in Korea before the mid-1960s, the overvaluation of the exchange rate currency acts as a 'tax' on exported commodities that falls on the land rent. Competitive pressures pass this 'discount' from exporters to agrarian capitalists and from these onto landowners.

A large portion of that value 'retained' in this way in the foreign exchange market is directly appropriated by industrial capital when purchasing foreign exchange to import machinery and inputs or, in the case of foreign investors, to repatriate profits. This lowers industrial capital's production costs in general and multiplies foreign-invested capital's profits in particular, respectively. Moreover, the overvaluation of the currency also reduces domestic commodity prices, either because commodities are exported, and competition lowers their local prices, or because they can usually be imported with an overvalued exchange rate without paying compensatory tariffs. This not only grants industrial capital the possibility to purchase raw materials below their

international prices, but also reduces the local cost of several wage-goods and thus of labour-power. On both sides, it allows industrial capital to appropriate another portion of the land rent and thus further reduces its production costs and increases its profitability. In order to measure the magnitude of resources transferred out of the primary sector through the overvaluation of the currency in Brazil and Korea, it is first necessary to ascertain the degree of overvaluation of their currencies.

A currency is said to be overvalued when its purchasing capacity is greater outside the national economy (i.e. in the foreign exchange market) than inside it. The measurement of the degree of overvaluation of a national currency consists then on measuring these deviations. The first step in the procedure consists of the identification of a base year or period when the rate at which a national currency exchanges for foreign currencies expresses the same magnitude of value (i.e. purchasing capacity) in the foreign and domestic markets, that is, represents the real purchasing power of that national currency. The periods 1968-1988 and 1985-1996 were chosen as a base to measure the degree of over/undervaluation of the Brazilian and Korean currencies, respectively. The analysis of the concrete economic history of these countries indicates that during those periods the conditions for the over/undervaluation of these national currencies were, on average, absent.[2]

The second step consist of the construction of a complete 'theoretical' time-series that would have kept the purchasing power of the national currency constant at the level of the base period, as the method of *relative* purchasing power parity (PPP) prescribes.[3] For that purpose, an index of the evolution of domestic prices relative to

[2] In the case of Brazil, 1968-88 was, as will be seen in Part II, a period when other forms of appropriation of land rent (e.g. export taxes) were relatively important, unlike the precedent and subsequent periods, and therefore the bases for the overvaluation of the currency were reduced. Furthermore, this period includes times of both high (1970s) and low (1980s) international commodity prices and inflows of foreign credit, resulting in average conditions. In the case of Korea, the selected period, 1985-95, excludes periods when the bases for a strong overvaluation existed (i.e. the continuous inflows of foreign credit before 1985) and periods when the bases for an undervaluation (see below) were present (after 1996).

[3] The method of *absolute* PPP used by the World Bank, the Eurostat and the OECD is not suitable to measure the degree of overvaluation of a national currency. By comparing the amount of national and foreign currency needed to buy the same basket of goods in domestic and world markets and using that relationship to estimate the exchange rates of PPP, it misses the point that the prices of the baskets are affected themselves by the very same factor that is trying to capture through them, namely, the over/undervaluation of the currency. This method, on the contrary, is useful to produce international comparison of the real purchasing power of national wages. Black market exchange rates are also problematic as a measure of the degree of overvaluation of a national currency. This is particularly the case when systems of multiple exchange rates are in use, as in Brazil before the early 1960s and during most of the 1980s, or when the currency is pegged to a foreign currency and its commercial parity supported by massive foreign exchange reserves, as in Brazil during the 1994-98 Real Plan. See Bacha

world market prices and another of the evolution of domestic labour productivity relative to world markets levels are used here to construct the PPP exchange rates. The first index, frequently used alone for this purpose, is not able to measure accurately the evolution of the capacity of a national currency to represent value (i.e. social wealth) *vis-à-vis* other currencies circulating in the world market. The movement of price indices expresses the changes of two variables with opposite effects over the evolution of the purchasing capacity of a national currency: the relationship between the amount of money in circulation and the demand for it, and the development of labour productivity. An increase in the former reduces capacity of a national currency to represent value and therefore its purchasing capacity in the world market. An increase of the latter has the opposite effect. Their movement, however, counterbalances in the evolution of prices.

Consumer prices indexes (CPIs) are used here to reflect the evolution of prices of goods and services in the domestic and world markets. CPIs are affected relatively less by the effect of the over/undervaluation of national currencies than wholesale price indices, which include a larger portion of tradable goods. Ideally, the evolution of the productivity of labour processes involved in the production of those goods and services included in the basket used to calculate the CPI should be used to calculate relative PPP exchange rates. Two different criteria are used here for Brazil and Korea as a proxy. The evolution of economy-wide average labour productivity is used for the Korean case while the evolution of manual industrial labour productivity is used for Brazil. The reasons for this particular treatment in the Brazilian case are the following. First, industrial employment is more sensitive to changes in output than economy-wide employment. Hence, labour productivity in the industrial sector shows a less volatile evolution than economy-wide labour productivity. In a case like the Brazilian, with sudden and marked changes in the level of economic activity, the use of economy-wide indexes of labour productivity slightly distorts the measurement of the PPP exchange rate.[4] Secondly, by considering only the evolution of manual workers, the methodology used here minimises the impact of the recent increase of non-productive office work, like administrative, sales and marketing activities. The evolution of the respective

and Taylor (1971); Taylor and Taylor (2004); Iñigo Carrera (2007) for a discussion of the merits and pitfalls of the different methods used to estimate the 'equilibrium' or parity exchange rates.

[4] The distortion is largely unimportant throughout most of the post-WWII period. It is the largest during 1994-98 when the currency appears to be 10% more overvalued when using the economy-wide indices of labour productivity than when using industrial labour productivity.

indices in the USA, the largest national economy, is used to represent world market norms. The evolution of the respective indices in the USA, the largest national economy, is used to represent the world markets. The following formula synthesises the procedure to compute the exchange rate of PPP.

$$PPP_i = PPP_{i-1} * [(CPI_i \div CPI_{i-1}) \div (CPIusa_i \div CPIusa_{i-1})] * [(LPusa_i \div LPusa_{i-1}) \div (LP_i \div LP_{i-1})]$$

Where,

PPP_i is the PPP exchange rate for the year *i*.

CPI_i is the CPI in the domestic market in the year *i*.

$CPIusa_i$ is the CPI in the USA in the year *i*.

LP_i is the labour productivity index in the domestic market in the year *i*.

$LPusa_i$ is the labour productivity index in the USA in the year *i*.

The third, final step in the procedure of measuring the degree of over/undervaluation of a national currency involves the comparison of the PPP exchange rate in each year with the relevant nominal exchange rate prevailing in the market during that year, using the following formula.

$$OV_i = ER_i \div PPP_i * 100$$

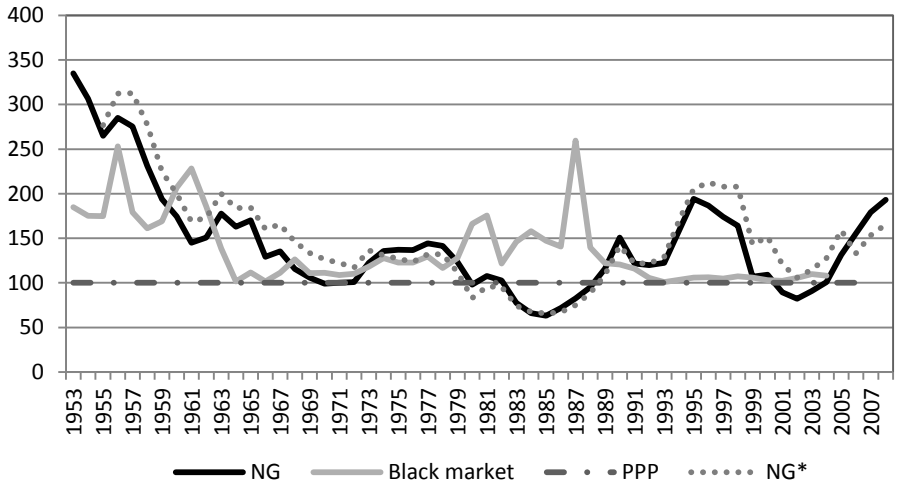
Where,

OV_i is the degree of overvaluation of the nominal exchange rate in the year *i*.

ER_i is the nominal commercial exchange rate in the year *i*.

If the value is greater than one hundred, the nominal exchange rate is said to be overvalued and vice-versa. The following two graphs plot the degree of over/undervaluation of the Brazilian and Korean national currencies between 1955 and 2005. These are compared with alternative measures of the degree of overvaluation of the currency using purchasing power parity exchange rates presented in Moon and Kang (1989), for Korea, and black market rates, for Brazil.

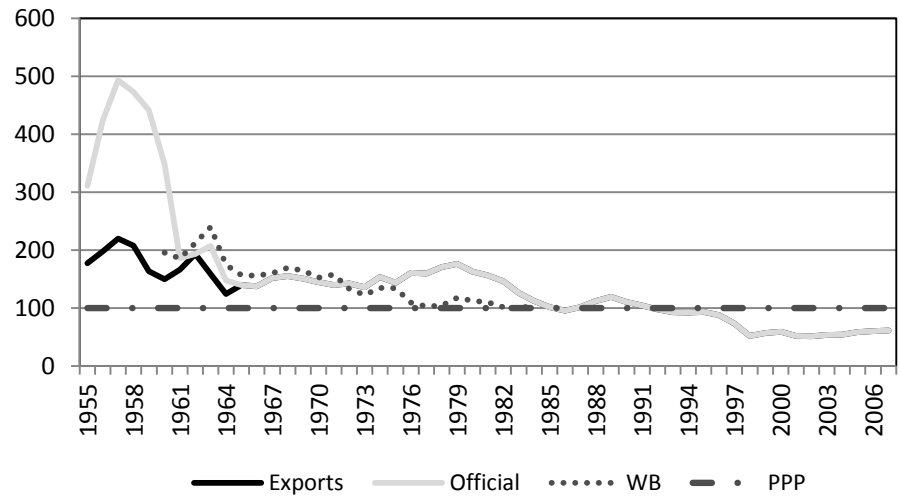
Graph 2.1
Brazil: Fluctuations of exchange rates around their PPP



Source: Tables C.1, C.17 and C.28

Note: NG = compares the evolution of market exchange rates with PPP exchange rates (100) calculated in this thesis; NG* = uses total economy labour productivity; Black Market = compares the evolution of market exhancge rates with 'black' market values.

Graph 2.2
Korea: Fluctuations of exchange rates around their PPP



Source: Tables C.1, C.17 and C.28

Note: Exports = compares the evolution of market exchange rates for exports with PPP exchange rates (100) calculated in this thesis; Official = compares the evolution of official exchange rates with PPP exchange rates (100) calculated in this thesis; WB = compares the evolution of official exchange rates for exports with PPP exchange rates (100) calculated in World Bank (1991)

Thus the magnitude of primary sector surpluses appropriated out of the primary sector through the effect of the overvaluation of the national currency on exports and on domestic prices of primary goods is measured using the following formula.

$$AO_i = [X_i * \left(1 - \frac{ER_i}{PPP_i}\right)] + \sum_{y}^{n} C_{yi} * (1 - \frac{ER_i}{PPP_i})]$$

Where,

X_i are the primary and semi-processed exports in US$ in the year *i*.

Cy_i is the domestic consumption of good *y* valued at the Free on Board (FOB) export prices in US$ in the year *i*.

2.1.1.2) Primary sector surpluses appropriated through export taxes

Taxes on primary exports retain in the public treasury a portion of the price of exported commodities and proportionally reduce, through competition, the domestic price of taxed commodities. As in the case of the overvaluation of the currency, the tax on exported and locally consumed commodities cannot normally fall on other portion of the price than the land rent (and eventually small agrarian capital profits). Both effects should be accounted for when measuring the amount of income transferred out of the primary sector through this policy. The following formula is used to measure both effects.

$$AET_i = t_i * X_i + \sum_{y}^{n} t_i * C_{yi}$$

Where,

t_i is the average export tax rate prevailing during the year *i*.

The amount of land rent appropriated in Brazil through 'contribution quotas' levied on exports of coffee and cocoa are added independently without computing the effect upon the internal consumption of these two commodities.

2.1.1.3) Surpluses appropriated by the state through specific taxes primary sector production

Taxes falling specifically on primary sector profits allow the state to appropriate a portion of extraordinary surpluses in the form of land rent. Only the existence of surplus profits like land rent allows capital invested in the sector to pay these types of taxes and valorise normally. In Brazil, two such fiscal contributions have been levied on the mining industry since the late 1980s. First, mining companies have paid a Financial Compensation for the Exploitation of Mineral Resources (CFEM), ranging from 2% to 3% of their net sales. For iron ore, the most important mining commodity extracted in Brazil and the only one considered here, the rate has been 2%. Secondly, a Landownership Royalty equal to 50% of the CFEM has been paid by mining companies that do not own the land where natural resources are located.[5] The following formula is used to measure the land rent appropriated by the state in these forms.

$$AT_i = \sum_{j}^{n} T_{ji}$$

Where,
T_{ji} is the amount of tax j collected on the year i.

2.1.1.4) Primary sector surpluses appropriated through state regulations on commodities domestic and international trade and maximum prices

The imposition of maximum prices or the prohibition to export a portion or the whole of national production of a specific commodity artificially expands its domestic supply and thus reduces, *ceteris paribus*, its domestic price *vis-à-vis* international levels. The measurement of the effect of these policies in transferring a portion of income out

[5] See National Department of Mining Production (2011).

of the primary sector is done through the comparison of export and import (i.e. Free on Board – FOB - and Cost, Insurance and Freight - CIF) prices converted into local currency using commercial exchange rates[6] and their equivalents in the domestic markets (i.e. Free Alongside Ship - FAS). Theoretical FAS prices are constructed by adding the costs of transport (to port) and administrative expenses (at the port) to the farm-gate price received by local producers. Transport and port costs need to be added to compare prices of the same level of aggregation. The following formula measures the magnitude of resources transferred out of the primary sector through these polices.

$$AR_i = \sum_{y}^{n} [(Pfob_{yi} * ER_i - Pfas_{yi})] * Q_{yi}$$

Where,

$Pfob_{yi}$ is the FOB price in local currency (at the commercial exchange rate) of the good *y* in the year *i*;

$Pfas_{yi}$ is the FAS price in local currency of the goods *y* in the year *i*;

2.1.1.5) Primary sector surpluses appropriated through the domestic circulation, above their international prices, of non-agrarian means of production used in agrarian productions

The circulation of agrarian inputs, like fertilizers, fuel-oil and machinery, in the domestic markets at prices above their international values are a form of transferring resources (i.e. land rent) out of the primary sector. This holds both in those situations where the state exercises the monopoly over their distribution, such as the case of fertilizers in Korea, or when, due to the lack of domestic market protection for its output, agrarian capital is unable to pass, like industrial capital, the extra costs onto consumers, as was the case of fertilizers, fuel-oil and machinery in Brazil during much of the period under study. Conversely, when these goods circulate in the domestic markets below their international prices, the primary sector recovers, through their

[6] The PPP exchange rate needs not to be used here as the effect of the overvaluation of the exchange rate was already accounted for above.

consumption, a portion of its surpluses or, eventually, receives a subsidy from the rest of the economy.

The measurement of the magnitude of these resources is done by comparing the domestic price of the input in question with its international price converted into local currency using the PPP exchange rate and multiplying the difference between both by the amount of domestic consumption of the input. It was computed for tractors of 60-80 HP, fuel-oil and fertilizers (nitrogen, phosphate and potash) in Brazil and, for a matter of relative importance, the latter only in Korea. The following formula measures the magnitude of resources transferred out of the primary sector through those polices.

$$AI_i = \sum_{h}^{n} [(DP_{hi} - IP_{hi}) * PPP_i] * Q_{hi}$$

Where,

DP_{hi} is the domestic price of input *h* in the year *i*;

IP_{hi} is the international price of input *h* in the year *i*;

Q_{hi} is the quantity of input *h* consumed in the year *i*.

2.1.1.6) Primary sector surpluses appropriated through state monopoly of commodity trade

State monopoly over the international trade of a specific commodity, as was the case in Brazil with sugar until 1990, allows the state to appropriate a portion of land rent by purchasing domestic productions below international prices. The measurement of the magnitude of these resources is done by comparing the domestic price of the commodity in question with its international price converted in local currency at the going exports exchange rate and multiplying the difference between both by the amount of domestic production purchased by the state.

$$AM_i = \sum_{y}^{n} (IP_{yi} - DP_{yi}) * Q_{iy}$$

Where,

DP_{yi} is the domestic price of good *y* in the year *i*;

IP_{yi} is the international price of good *y* in the year *i*;

Q_{yi} is the quantity of good *y* consumed in the year *i*.

2.1.1.7) Primary sector surpluses appropriated out, or recovered by, landowners through the provision of rural credit under differential conditions

The provision of credit for agrarian productions at subsidised rates and favourable repayment conditions has been a common practice in Brazil and Korea during large parts of the period under study. Nevertheless, this practice only constitutes a recovery of a portion, or the whole, of the previously appropriated surpluses if the conditions at which agrarian capital gains access to credit are particularly favourable *vis-à-vis* those at which industrial capital does. Only under these circumstances do they constitute a source of extraordinary profits for agrarian capital. The competition to appropriate these extraordinary profits increases the demand for land and thus its rental and sale prices.[7] They are then transformed into land rent appropriated by landowners. If the interest subsidy granted to agrarian capital is of equal magnitude to that granted to industrial capital, it would be appropriated by both types of productive capital and would not constitute a recovery of a portion of land-rent by landowners; it would simply be transformed into a portion of normal profits. This seems to have been the case in Korea throughout the period under study and in Brazil during the entire period except for the years 1969-1982.

Lacking information on the average rate of interest and repayment conditions on similar loans granted to industrial capital, the estimation made by Helfand (1994) of the magnitude of the subsidy implicit in the provision of rural credit for working-capital (*RCSwk*) and marketing (*RCSmk*) in Brazil is used here. Industrial capital there had also access during that period to heavily subsidised loans for fixed capital investments provided by state-owned banks.[8] The following formula measures the annual amount of land rent recovered by landowners through subsidised rural credit.

[7] See Rezende (1981).
[8] See Najberg (1984).

$$RCS_i = RCSwk_i + RCSmk_i$$

2.1.1.8) Primary sector surpluses recovered by landowners through the implementation of programmes in support of domestic commodity prices

State programmes implemented to purchase primary goods at above market prices allow landowners to recover a portion of land rent. For most commodities analysed in this thesis, resources recovered in this way were measured above when comparing FOB and FAS prices. The case of coffee in Brazil was not included in that analysis.

During the 1950s and the early 1960s, the Brazilian state implemented a number of programmes in support of coffee growers. The most important was the purchase of surplus productions in order to stop the price of coffee from falling. When the output bought was destroyed or when purchases were done at prices above those at which the product was later sold, these interventions resulted in a subsidy to agrarian capital. This subsidy constituted an extraordinary profit for the latter which competition transformed into land rent. This policy thus resulted in the recovery of a portion of land rent by landowners. The annual magnitude of land rent recovered in this way is equal to the net result of the operations of the Brazilian Coffee Institute (IBC). This is calculated by subtracting the value of purchases and administrative expenses from the value of coffee sales by the IBC as shown in the following formula.

$$IBC_i = IBCy_i - IBCe_i$$

Where,

IBC_{yi} is the income from coffee sales in the year i;

IBC_{ei} are the expenditures of the IBC in the year i.

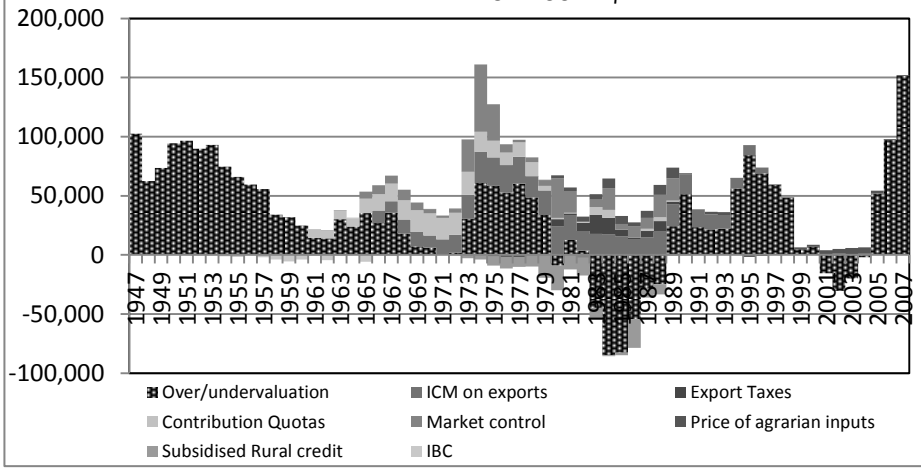
2.1.1.9) Total magnitude of primary sector surpluses appropriated by economic actors others than landowners in Brazil and Korea during 1955-2005

The total magnitude of primary sector surpluses appropriated in other parts of the economy is measured with the following formula which adds up resources appropriated through the different policies reviewed above.[9]

$$ALR_i = AO_i + AET_i + AT_i + AR_i + AI_i + AM_i - RCS_i + (IBC_i)$$

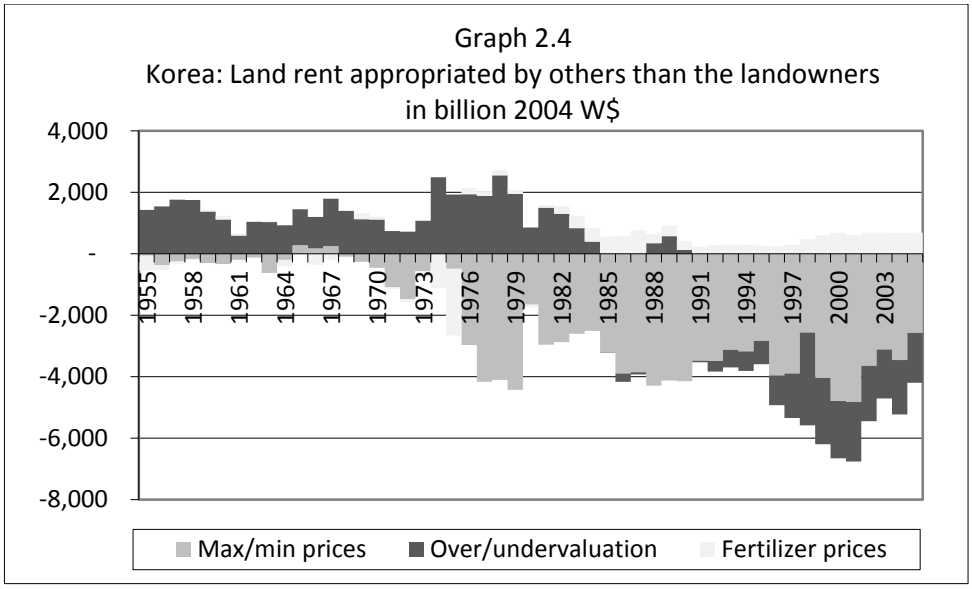
Graphs 2.3 and 2.4 below plot the annual magnitude of primary sector surpluses (largely land rent) appropriated by other economic actors than landowners, or recovered by the latter, in Brazil and Korea between the mid-1950s and the mid-2000s through each of the state policies analysed above.

Graph 2.3
Brazil: Land rent appropriated by others than landowners in million 2004 R$



Source: Table C.18

[9] The last term of the equation is in parenthesis because it only applies to the Brazilian case.



Source: Table C.19

It can be observed in graph 2.3 above that the existence of large intersectoral income transfers is a constant feature of the Brazilian economy throughout most of the period under study. In terms of resources transferred, the overvaluation of the exchange rate was the main form of land rent appropriation by others than landowners, though export taxes were also important during 1967-1993. Moreover, it can also be seen in the graph that the magnitude of land rent appropriated by others than landowners grew strongly during the three 'commodities booms' of the post-WWII period (i.e. 1950-54, 1973-74, 2006-07) and fell markedly during periods of relatively low commodity prices (i.e. 1960s, 1980s).

Graph 2.4 shows that the Korean experience differed from the Brazilian. In Korea, the transfer of resources out of the primary sector ended around 1970, when the transformation on the specificity of the local process of capital accumulation was under way and the agrarian sector became a net recipient of resources from the rest of the economy. It can also be observed in graph 2.4 that, as in Brazil, the overvaluation of the exchange rate was the most important form of appropriation of primary sector surpluses by economic agents in other branches of the economy during the pre-1970 period. In general terms, state-set minimum prices partly compensated for the negative impact of exchange rate overvaluation on agrarian sector income.

2.2) Capital yearly advanced for valorisation in the economy and in the industrial and agrarian sectors

The estimation of capital's rate of profit is not only needed to analyse the course of process of accumulation in general but also to measure the portion of land rent appropriated by landowners. The latter is computed as a residual after deducting agrarian capital profits from the net surplus-value available for appropriation in the primary sector.[10] In order to compute capital's rate of profit, it is first necessary to measure the amount of capital advanced for valorisation (K). This magnitude will then be compared with the mass of surplus-value appropriated by capital. Regardless the sector of investment, the latter is composed of two parts: fixed (FK) and circulating ('working') portions (CK). From the point of view of macroeconomic accounting, FK includes all means of production with a turnover period greater than one year –i.e. those whose use value is consumed through more than one year. This includes buildings, machinery, equipment, and transport material. The circulating portion of capital includes all means of production with a turnover period shorter than one year, such as raw and auxiliary materials, and labour-power. Turnover period refers here to the time that takes a specific portion of capital to fully return to the money-form in which was originally advanced.[11] The following formula synthetises the composition of capital according to the turn-over period of its different material elements:

$$K_i = FK_i + CK_i$$

The magnitude of fixed capital yearly advanced for valorisation is equal to the addition of the value of the different instruments of production (*fk*), as defined in the following formula.

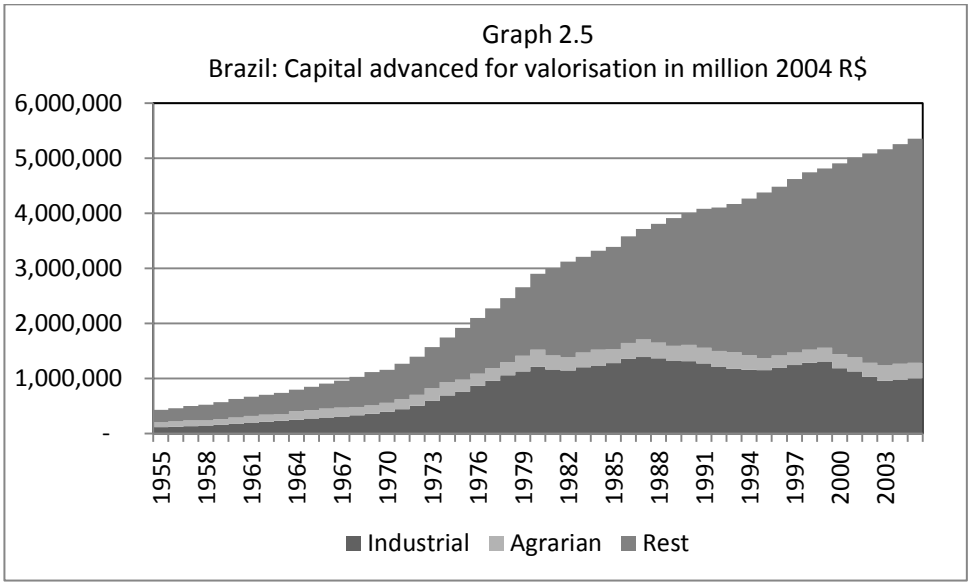
$$FK_i = \sum_{y}^{n} fk_{yi}$$

[10] As explained above, the land rent appropriated by mining landowners will not be measured here.
[11] See Marx (1992: 236-61) for the analysis of the process of turn-over of industrial capital.

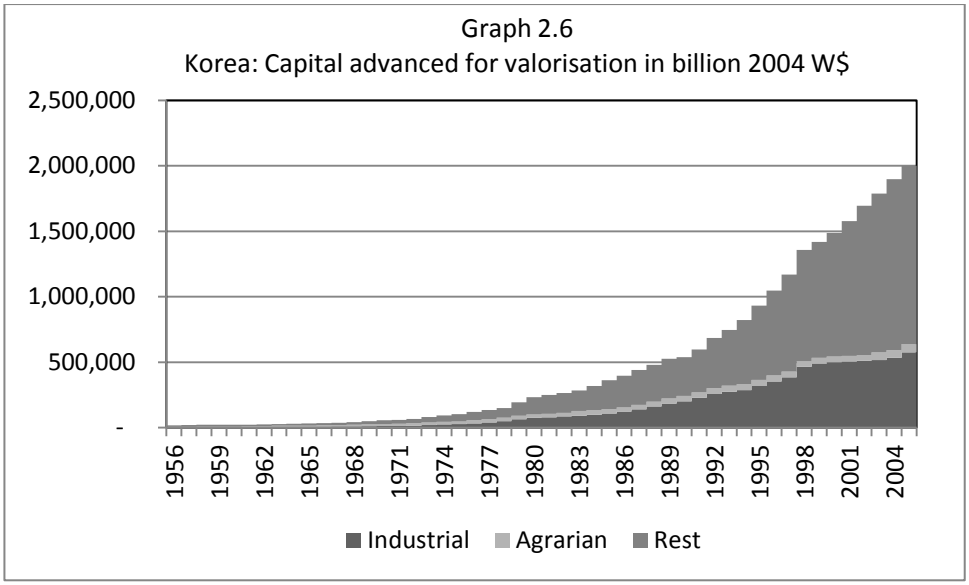
The magnitude of circulating capital advanced for valorisation every year is equal to the addition of the mass of capital in the form of direct wages and other indirect forms of compensation of the labour-force (W), raw and auxiliary materials (M) divided by the number of times (v) their value turns, on average, over during one year.

$$KC_i = (W_i + M_i) \div v_i$$

The next two graphs plot the evolution of the amount of capital advanced for valorisation in different sectors of the Brazilian and Korean economies.



Source: Tables C.2 and C.7.



Source: Tables C.2 and C.8.

Several comments can be made from comparison of graphs 2.5 and 2.6. First, it can be seen that the amount of capital advanced for valorisation in the industrial sector in Brazil grew strongly until around 1980, crucially during the 'big push' of the 1970s, and stagnated thereafter. Secondly, a relatively similar trend is observed in the agrarian sector. Thirdly, though the break is not that clear-cut, the process of accumulation of capital economy-wide in Brazil also slowed since the early 1980s. Fourthly, an opposite trend can be observed in Korea. There, the rate of growth of the amount of capital advanced for valorisation accelerated in most branches of the economy after the early 1980s.

2.3) Valorisation of social, industrial and agrarian capitals

In order to measure the rate of profit, the mass of surplus-value (i.e. surpluses) appropriated by capital needs to be compared with the capital advanced to obtain them. The mass of surpluses appropriated by capital in each branch of production is equal to the value added in that sector minus the consumption of fixed capital and the cost of labour-power (i.e. total wages plus total employer contributions) used in the production process.[12]

[12] This is irrespective of how these profits are divided according to capital's ownership.

$$\pi_{yi} = VA_{yi} - CFK_{yi} - W_{yi}$$

Where,

$\prod_{yi}$ are total surplus-value appropriated in the sector *y* the year *i*;

VA_{yi} is the value added in the sector *y* the year *i*;

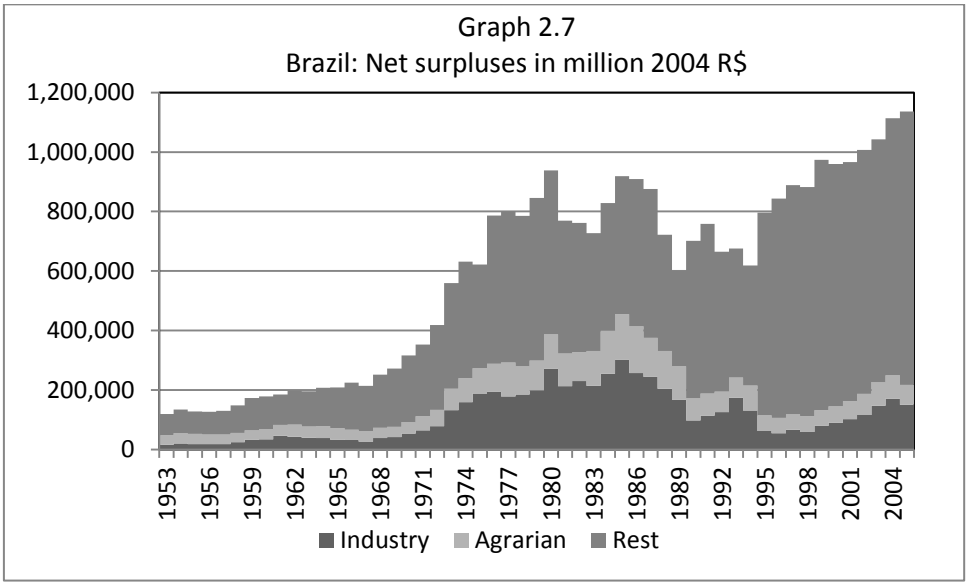
CFK_{yi} is the fixed capital consumed in the sector *y* the year *i*;

W_{yi} is the cost of labour-power in the sector *y* the year *i*;

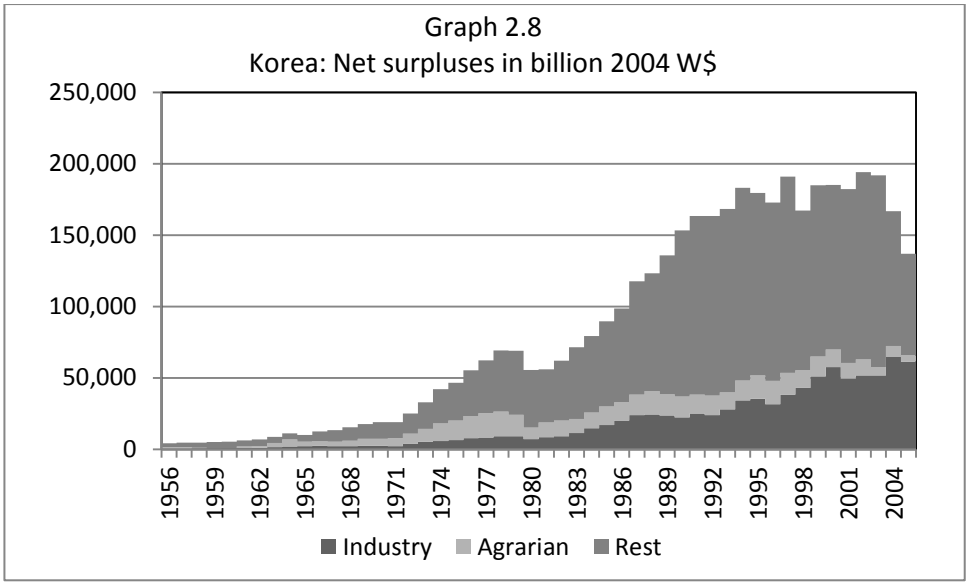
Accordingly, surpluses yearly appropriated by social capital are equal to the total value added in the economy minus the total consumption of fixed capital and the cost of labour-power. Alternative, total surpluses can be divided into those appropriated in the rural (R∏) and urban (U∏) sectors. Thus the former is equal to the addition of the latter two.

$$\pi_i = R\pi_i + U\pi_i$$

Graphs 2.7 and 2.8 below plot the evolution of the mass of surpluses appropriated by capital in the different sectors of the Brazilian and Korean economies, respectively.



Source: Tables C.10, C.11 and C.12



Source: Tables C.13, C.14 and C.15

From the observation of graph 2.7, it can be gathered that surpluses (i.e. surplus-value) appropriated in Brazil economy-wide, as well as in the industrial and agrarian sectors, grew strongly until the late 1970s; stagnated during much of the 1980s; collapsed during the latter part of the 1980s and the early 1990; and recovered strongly thereafter. The mass of surplus-value appropriated in the industrial sector, however, did not return to pre-mid-1980s levels.

A different trend is observed in Korea. As graph 2.8 above show, surpluses appropriated economy-wide, as well as in the industrial and agrarian sectors, grew significantly until the late 1970s; fell during the global 1979-82 recession; and recovered strongly during much of the 1980s. It can also be seen in the graph that, during much of the 1990s, and crucially the first part of the 2000s, the magnitude of surplus-value appropriated by industrial capital continued growing while the amount of surpluses appropriated by capital in the rest of the economy contracted. As capital advanced to obtain them kept growing (see graph 2.6 above), this might indicate that, since the 1990s, the profitability of industrial capital began to be supported at the expense of other portions of total social capital (e.g. commercial and service capital).

2.4) Rate of valorisation or rate of profit of social, industrial and agrarian capital

The rate of profit, that is the rate of valorisation of capital, is obtained by dividing the sum of surpluses (i.e. profits) annually appropriated in the economy, or a

specific branch, by the total amount of capital (i.e. fixed plus circulating) advanced to obtain them. Thus the formulas to measure sectoral and economy-wide rates of profit are the following.

$$g_{yi} = \pi_{yi} \div K_{yi}$$
$$G_i = \pi_i \div K_i$$

Where,
g_{yi} is the average rate of profit in the sector *y* the year *i*;
G_{yi} is the rate of valorisation of social capital in the year *i*.

Table 2.1 below presents the evolution of the pre-tax annual rates of profits of social, industrial and agrarian capitals in Brazil and Korea. In graph 2.9, rates of profit of industrial capital in these countries are compared with the rate of profit of industrial in the USA. It should be noticed that, as land rent is included in agrarian profits (i.e. net surpluses), the rate of profit of agrarian and social capital appears artificially increased in the first approximation.

Table 2.1

Profit Rates

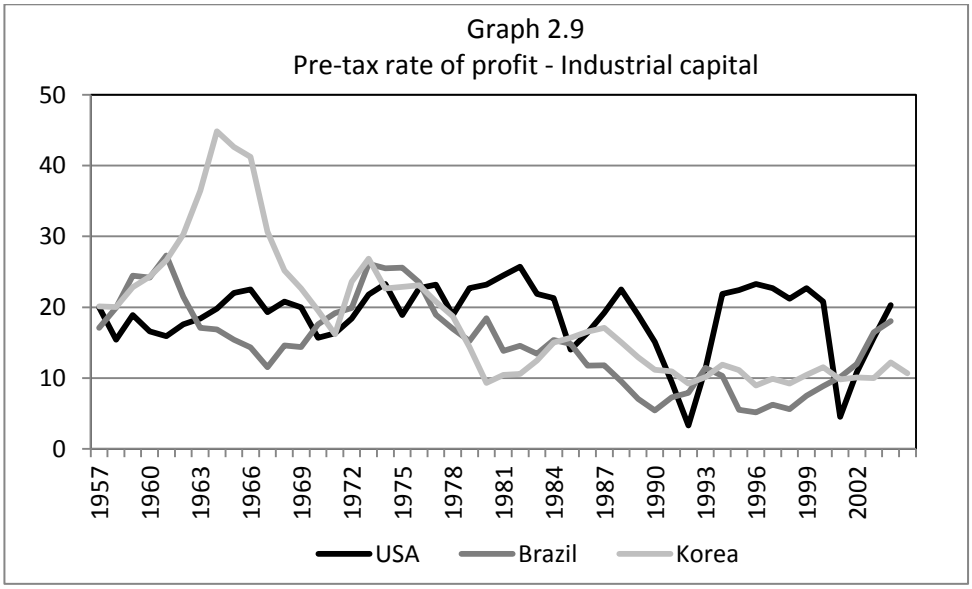
	Brazil			Korea		
	Social	Industrial	Agrarian	Social	Industrial	Agrarian
1955	35.4	19.0	38.5		23.8	
1956	32.7	18.2	34.9	23.9	25.3	13.6
1957	32.7	17.1	35.2	24.6	20.1	14.6
1958	31.7	19.9	32.9	21.6	20.0	5.0
1959	34.5	24.5	28.4	19.4	22.8	-8.7
1960	34.0	24.2	30.5	24.7	24.3	1.9
1961	31.1	27.3	29.5	26.5	26.6	11.4
1962	28.9	21.5	29.2	26.8	30.3	9.8
1963	25.8	17.1	26.2	31.6	36.4	29.2
1964	27.3	16.9	24.1	37.8	44.9	47.1
1965	29.4	15.4	26.4	31.4	42.6	30.8
1966	31.1	14.3	25.1	36.7	41.2	30.4
1967	28.5	11.5	26.0	36.4	30.7	25.9
1968	29.5	14.6	25.3	36.1	25.2	29.3
1969	29.6	14.4	26.2	35.7	22.6	35.6
1970	33.9	17.6	28.2	33.6	19.5	34.6
1971	34.1	19.1	29.8	31.2	16.2	34.1
1972	36.4	19.9	31.2	37.4	23.6	38.2
1973	39.4	26.1	32.6	40.5	26.8	44.0
1974	37.2	25.5	31.5	45.3	22.7	61.5
1975	31.5	25.6	34.0	44.7	22.9	67.5
1976	37.1	23.5	37.6	46.2	23.1	67.2
1977	34.1	18.9	42.8	46.2	20.8	67.7
1978	29.6	16.9	33.8	46.3	18.7	64.0
1979	27.0	15.2	27.9	35.7	14.4	55.7
1980	26.9	18.5	28.5	23.8	9.3	32.2
1981	19.5	13.8	28.9	22.3	10.4	40.0
1982	18.1	14.6	26.8	23.3	10.6	39.3
1983	17.3	13.4	28.9	25.1	12.5	27.0
1984	18.7	15.3	30.9	25.0	15.0	29.9
1985	17.4	14.8	31.9	24.7	15.7	36.8
1986	16.2	11.8	30.0	24.9	16.5	38.3
1987	16.4	11.8	24.7	26.7	17.1	42.1
1988	12.5	9.5	24.8	25.7	15.1	44.5
1989	8.9	7.0	20.4	25.8	12.9	37.4
1990	13.3	5.4	16.8	28.5	11.2	35.1
1991	15.6	7.3	18.5	27.4	10.9	31.6
1992	12.8	7.9	16.3	23.9	9.2	32.3
1993	13.1	11.5	16.1	22.5	10.1	26.1
1994	13.7	10.3	25.1	22.3	11.9	30.6
1995	19.0	5.5	22.3	19.3	11.1	34.4
1996	21.6	5.1	24.4	16.5	8.9	34.5
1997	22.7	6.3	24.4	16.3	9.9	34.8
1998	22.5	5.6	24.3	12.3	9.2	28.5
1999	23.8	7.5	23.0	13.0	10.4	32.1
2000	21.9	8.9	22.3	12.4	11.5	27.3

Table 2.1

Profit Rates

	Brazil			Korea		
	Social	Industrial	Agrarian	Social	Industrial	Agrarian
2001	20.7	10.1	23.2	11.6	9.8	25.0
2002	20.0	12.0	24.8	11.5	10.1	27.0
2003	20.7	16.5	26.1	10.7	10.0	10.0
2004	21.0	18.0	24.3	8.8	12.2	12.0
2005	21.0	15.6	21.5	6.8	10.7	6.9
Average	25.1	15.1	27.4	26.6	18.6	32.1

Source: Tables C.10, C.11, C.12, C.13, C.14 and C.15



Source: Table 2.1

Several observations can be made from the table and graph above. First, it can be seen there that the profitability of industrial capital in Brazil peaked during the 1956-60 Targets Plan, the 'miraculous' years of 1968-1973 and the early phase of the NDP II (1974-1976); fell from high levels during the slow-growth period of the early 1960s and during the latter part of the 1970s; remained around the long-term average of 15% during the first part of the 1980s; collapsed during the latter part of the 1980s and the early 1990s when the trade liberalisation programme began to be implemented; remained low and stable during most of the 1990s; and recovered strongly after 2002. Secondly, from table 2.1, it can be gathered that, due to the large magnitude of land rent, the rate of profit of social capital in Brazil, let alone that of agrarian capital, has been consistently above that of industrial capital. Thirdly, it can also be seen that the

profitability of industrial capital in Korean boomed during the first part of the 1960s and after the 'transition' of the second half of the decade its evolution became closely tied to that of industrial capital in the USA, its most important market for much of the period. Nevertheless, the evolution of the rate of profit of industrial capital in Korea departed from that in the USA during the crisis of 1979-82, when the latter increased, and crucially during the 1990s when, despite growth returned to Korea, industrial capital profitability remained weak for historical standards. In effect, after peaking in 1987, the rate of profit of industrial capital in Korea fell significantly and remained relatively low thereafter as industrial wages entered a period of strong growth. Finally, it can also be observed in table 2.1 that up to the late 1960s agrarian capital's rate of profit in Korea was consistently lower than the rate of profit of industrial capital which means that not only small capitalists/landowners were unable to appropriate land rent but also that they were incapable of valorising their capital at the 'normal' rate of profit. The reverse is true thereafter, as the agrarian sector became a net receptor of social wealth generated in other branches of the economy.

2.5) Participation of primary sector surpluses appropriated by others than landowners in social and industrial capital profits

The share of appropriated primary sector surpluses, largely agrarian land rent, in social capital profits – i.e. their participation in supporting capital's profitability - is calculated dividing the former by the latter. In order to calculate the mass of primary surpluses appropriated by industrial capital in particular, the total mass of primary surpluses appropriated by others than landowners is proportionally divided among the different aliquot parts of total social capital. Thus the respective formulas are given by the following equations.

$$s_{yi} = ALR_{yi} \div \pi_{yi}$$

$$ALR_{yi} = ALR_i * (K_{yi} \div K_i)$$

$$S_i = ALR_i \div \pi_i$$

Where,

s_{yi} are primary sector surpluses appropriated in sector *y* during year *i* as a portion of profits appropriated by capital in sector *y*;

S_i are total primary sector surpluses appropriated by others than landowners during year *i* as a portion of total surplus-value appropriated economy-wide;

ALR_i is the total mass of primary sector surpluses appropriated by social actors other than landowners;

ALR_{yi} is the mass primary sector surpluses appropriated in the sector *y* during year *i*;

K_{yi} is capital advanced for valorisation in sector *y* during year *i*;

K_i is total capital advanced for valorisation in the economy during year *i*.

Table 2.2 below presents the share of land rent appropriated by others than landowners in total surplus-value economy-wide and in the industrial sector. The table also shows the participation of industrial capital in total social capital.

Table 2.2

Land rent appropriated by capital as a portion of profits

	Total profits		IK / TK		Industrial profits	
	Brazil	Korea	Brazil	Korea	Brazil	Korea
1953	0.65					
1954	0.46					
1955	0.42		0.25		0.79	
1956	0.39	0.38	0.26	0.10	0.70	0.36
1957	0.35	0.40	0.26	0.10	0.67	0.49
1958	0.17	0.48	0.26	0.12	0.27	0.52
1959	0.13	0.49	0.27	0.13	0.18	0.42
1960	0.10	0.29	0.27	0.14	0.14	0.30
1961	0.09	0.11	0.28	0.14	0.11	0.11
1962	0.07	0.25	0.29	0.14	0.09	0.22
1963	0.16	0.07	0.30	0.14	0.24	0.06
1964	0.13	0.06	0.30	0.15	0.20	0.05
1965	0.19	0.17	0.30	0.16	0.37	0.12
1966	0.22	0.14	0.30	0.18	0.48	0.13
1967	0.26	0.19	0.31	0.19	0.65	0.22
1968	0.18	0.11	0.31	0.21	0.37	0.16
1969	0.14	0.08	0.31	0.21	0.28	0.13
1970	0.10	0.08	0.32	0.21	0.20	0.13
1971	0.08	-0.01	0.32	0.22	0.14	-0.01
1972	0.08	-0.03	0.34	0.23	0.14	-0.04
1973	0.16	0.03	0.36	0.24	0.24	0.05
1974	0.23	0.07	0.37	0.27	0.34	0.13

Table 2.2

Land rent appropriated by capital as a portion of profits

	Total profits		IK / TK		Industrial profits	
	Brazil	Korea	Brazil	Korea	Brazil	Korea
1975	0.18	0.00	0.37	0.27	0.22	0.01
1976	0.10	-0.01	0.39	0.28	0.16	-0.01
1977	0.10	-0.03	0.40	0.30	0.18	-0.07
1978	0.09	-0.02	0.41	0.32	0.15	-0.05
1979	0.05	-0.03	0.42	0.33	0.09	-0.08
1980	0.04	-0.01	0.42	0.33	0.05	-0.03
1981	0.05	-0.02	0.39	0.32	0.08	-0.04
1982	0.02	-0.03	0.37	0.32	0.02	-0.06
1983	0.00	-0.03	0.38	0.32	0.00	-0.05
1984	-0.02	-0.03	0.37	0.31	-0.03	-0.04
1985	-0.05	-0.03	0.39	0.30	-0.06	-0.05
1986	-0.05	-0.04	0.39	0.31	-0.07	-0.05
1987	0.00	-0.03	0.39	0.32	0.00	-0.04
1988	0.03	-0.03	0.37	0.34	0.04	-0.05
1989	0.12	-0.02	0.35	0.35	0.15	-0.04
1990	0.09	-0.02	0.34	0.37	0.23	-0.06
1991	0.05	-0.02	0.32	0.38	0.11	-0.05
1992	0.05	-0.02	0.31	0.38	0.09	-0.05
1993	0.05	-0.02	0.30	0.37	0.06	-0.04
1994	0.10	-0.02	0.28	0.35	0.13	-0.03
1995	0.11	-0.02	0.27	0.34	0.37	-0.03
1996	0.08	-0.02	0.27	0.34	0.34	-0.04
1997	0.06	-0.02	0.27	0.33	0.23	-0.04
1998	0.05	-0.03	0.27	0.34	0.21	-0.04
1999	0.01	-0.03	0.26	0.35	0.02	-0.03
2000	0.01	-0.03	0.23	0.34	0.02	-0.03
2001	-0.01	-0.03	0.21	0.32	-0.02	-0.03
2002	-0.02	-0.02	0.19	0.30	-0.04	-0.02
2003	-0.01	-0.02	0.18	0.29	-0.02	-0.02
2004	0.00	-0.02	0.18	0.28	0.01	-0.02
2005	0.05	-0.02	0.18	0.29	0.06	-0.01

Source: Tables C.11, C.12, C.14, C.15, C.18 and C.19.
Note: IK = Industrial capital; TK = Total capital

Three main observations can put forward from the analysis of table 2.2. First, it can be seen that primary sector surpluses appropriated by social and industrial capital in Brazil were substantial, averaging 13% and 21% of their respective profits between 1955 and 2005, 23% and 35% during 1955-1980 and 4% and 6.5% during 1981-2005. Yet, despite the post-1980 decline, the portion of land rent appropriated by sectors other

than landowners was equal to approximately 4.2% and 6% of GDP in 2006 and 2007, respectively. Secondly, that between 1956 and 1970, the mass of primary sector surpluses (i.e. a portion of land rent and small capital profits) appropriated by others than landowners in Korea contributed to 23% and 29% of social and industrial capital profits, respectively, while they averaged 24% and 38%, respectively, in Brazil the same period. Thirdly, that since 1970 that trend reversed and the agrarian sector became net receptor of resources from the rest of the economy. In Brazil, on the contrary, the transference of primary sector surpluses to the rest of the economy, notably the industrial sector, remained in effect.

2.6) Magnitude of the land rent

Land rent is a form of surplus-value potentially appropriable by landowners due to their monopoly over an irreproducible means of production, land. It was argued before that, in Brazil throughout the period understudy and in Korea before 1970, a portion of land rent was appropriated by social subjects (economic actors) other than landowners. The magnitude of these portions is dependent, *ceteris paribus*, on the total size of the land rent. The larger the magnitude of the land rent, the larger can potentially be the size of the portion appropriated by others than landowners themselves. The measurement of the total magnitude of land rent is indispensable for the political-economy analysis of long-term development of any society were capital accumulation revolves around its appropriation.

In economies where state policies allow capital to appropriate (recover) a portion of it, land rent is made of two parts: that appropriated by social subjects other than landowners and that appropriated by landowners themselves. The long-term evolution of the first part was already measured in Section 1 of this chapter. The estimation of the portion effectively appropriated by landowners (LR) should be now pursued. This magnitude is calculated as a residual equal to value added in the agrarian sector minus the consumption of fixed capital, the cost of the labour-force used for productive purposes and the profits normally corresponding to agrarian capital.[13] The latter are calculated using the rate of profit of industrial capital estimated above and the

[13] The portion of land rent appropriated by others than landowners is already deducted from the sector's value added account in the form of policy-induced lower prices of primary sector output or higher prices of its inputs.

amount of capital (fixed and circulating) advanced in the agrarian sector. On average, competition should make both profits rates (agrarian and industrial) approximately equal. The rate of profit calculated above for agrarian capital, which relates total agrarian surplus to agrarian capital advanced for valorisation, contains the land rent effectively appropriated by landowners. A caveat should be made here, however. For reasons associated to the material characteristics of agrarian productions, small capitals tend to be more common in this branch of the economy than in the industrial sector. The normal rate of profit of agrarian capital thus tends to be, *ceteris paribus*, lower than that in the industrial sector. Using the average rates of profits in the latter as a proxy for the former thus underestimates the magnitude of the land rent effectively appropriated by landowners. In Korea, this circumstance is particularly enhanced. Due to the extremely small scale of post-land reform agrarian production, the rate of profit of agrarian capital there has been regulated by the income that the small capitalist would get if employed as a wage-labourer in similar productive activities. The following formula thus measures the annual land rent appropriated by landowners.

$$LR_i = VA_i - W_i - CFK_i - \pi R_i$$
$$\pi R_i = qind_i * Kagr_i$$

Where,

VA_i is the value added in the agrarian sector during year *i*;

W_i is the cost of the rural labour-force during year *i*;

CFK_i is the consumption of fixed capital during year *i*;

$\prod_i$ is the mass of agrarian profits during year *i*;

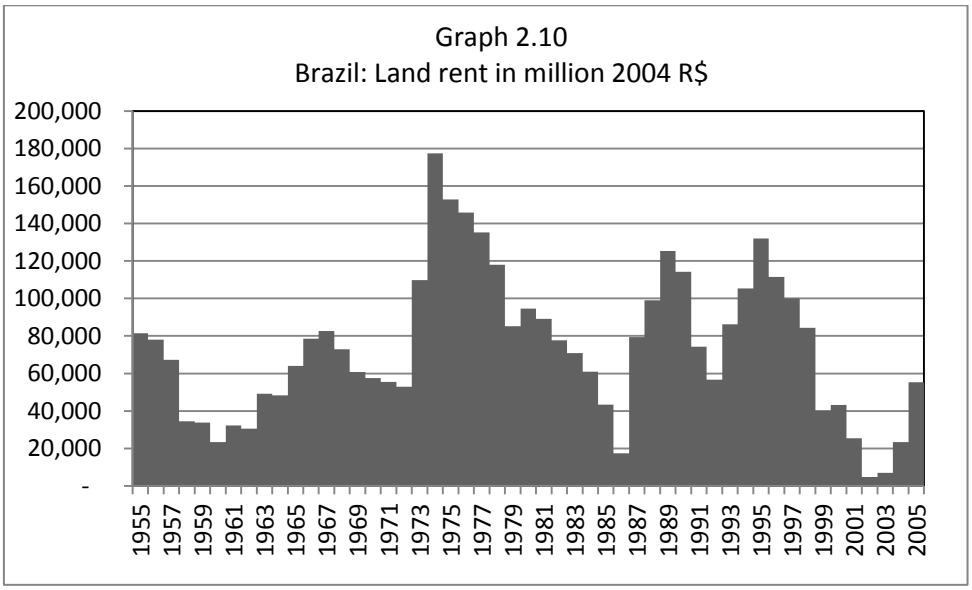
$gind_i$ is the rate of profit of industrial capital during year *i*;

$Kagr_i$ is the amount of capital advanced in the agrarian sector during year *i*.

The magnitude of the total land rent is then measured by the following equation.

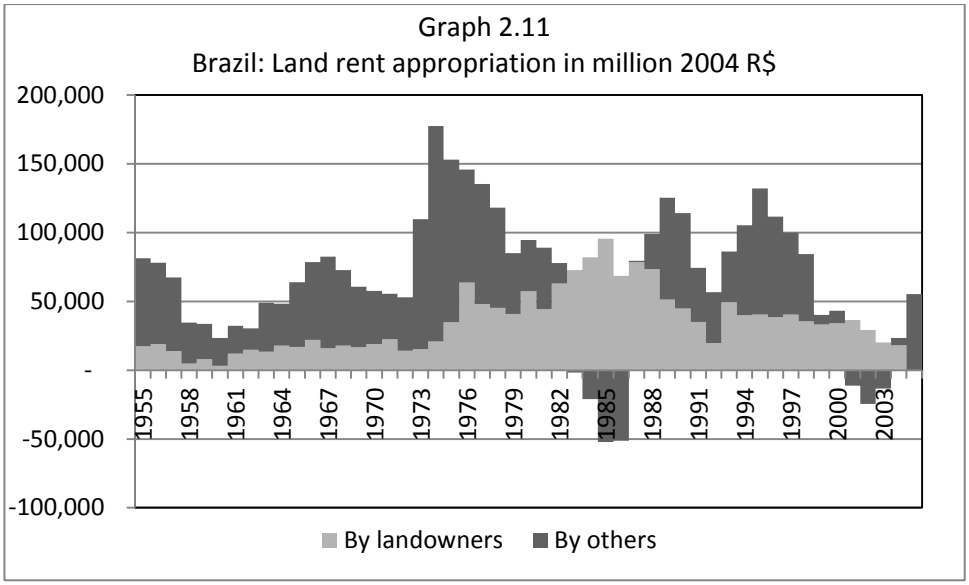
$$TLR_i = ALR_i + LR_i$$

Graphs 2.10, 2.11 and 2.12 plot the evolution of land rent in Brazil and Korea between the mid-1950s and mid-2000s.



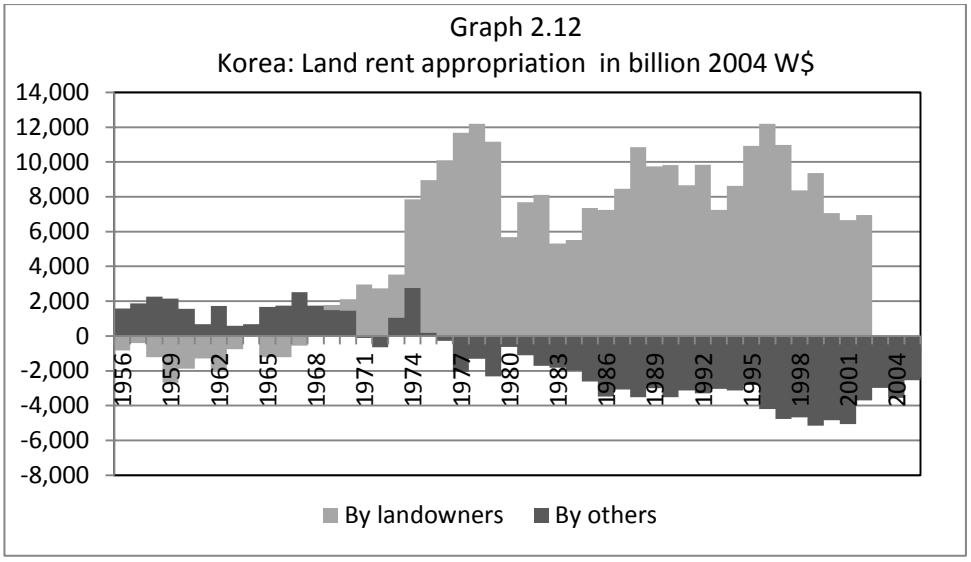
Source: Tables C.10 and C.18

Graph 2.10 plots the evolution of the total mass of primary (largely agrarian) sector land rent in Brazil between 1955 and 2005. It can be observed there that the land rent contracted during the second half of the 1950s, after picking up during the 'commodities boom' associated with the Korean War; it recovered during the first half of the 1960s but stagnated during the latter part of the decade; it expanded strongly during the 1970s as output grew while new agrarian regions were brought into production and international commodity prices spiked; it collapsed during the 1980s and early 1990s as international commodity prices fell strongly; it recovered during 1988-90 and 1994-1998 as prices increased mildly and agrarian output expanded; collapsed during 1999-2003 as commodity prices fell again sharply; and, expanded strongly after 2004 as international commodity prices of raw materials and, crucially, primary sector production increased.



Source: Tables C.10 and C.18

Graph 2.11 shows the evolution of the land rent appropriated by landowners and by other social subjects in Brazil. The graph combines information presented in graphs 2.3 and 2.10. It can be observed there that the land rent appropriated by landowners remained practically stagnant between the mid-1950s and the early 1970s, though it contracted briefly during 1958-60 as the total land rent dropped strongly. The portion of the rent appropriated by landowners expanded during the 1970s, as commodity prices and, thus, the total land rent increased, and during the 1980s, despite the opposite occurred. As seen in graph 2.3 above, the undervaluation of the national currency during much of the 1980s channelled resources (i.e. surplus-value) from capital (capitalists) to landed property (landowners). Graph 2.11 also shows that the opposite trend took place thereafter, with the exception of 2000-03 when the total land rent contracted strongly as international commodity prices reached historically low levels.



Source: Tables C.13 and C.19

Graph 2.12 above plots the evolution of the Korean land rent between 1955 and 2005 according to the courses of its appropriation. It can be appreciated that, as mentioned before, during the pre-1970 period, petty capitalists/landowners were unable to appropriate a portion of 'their' surpluses and, possibly, land rent. These surpluses were appropriated in other sectors of the economy. Furthermore, it can also be observed that after that date the rent appropriated by petty capitalists/landowners, much of which was made of the subsidy granted by the rest of society, became positive and grew exponentially. In effect, a subsidy specific to the agrarian sector, whose appropriation is connected to the use of land, such as those granted to food producers since the early 1970s, transforms into a rent for landowners. If the land is not directly used productively by its owner, competition by individual capitals to appropriate the subsidy pushes up rental prices.

2.7) Net inflows of foreign aid and interest-bearing capital (credit)

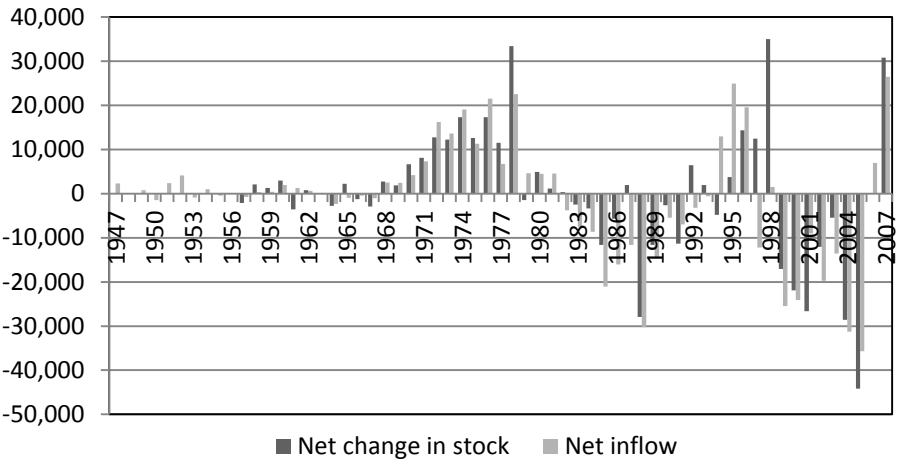
During large periods of Brazilian and Korean post-WWII history, the inflow of foreign financial resources, in the form of credit or aid, constituted an important source of capital for accumulation. In the Brazilian case, this extraordinary source of social wealth was used to complement, as a 'junior partner', the land rent in supporting capital's normal profitability. In Korea, large inflows of aid received from international donors, notably the USA, during the 1950s and 1960s were also used to complement the

mass of primary sector surpluses (rent plus small capital profits) transferred to the industrial sector.[14] However, when aid inflows were replaced by commercial credits in the late 1960s, the Korean process of capital accumulation was already undertaking its specific structural transformation. The large inflow of credit began then to be used, unlike in Brazil, to engender an industrial capital with the degree of concentration necessary to compete in world markets using the relative cheap and disciplined labour-power available there.

The annual net inflow of foreign interest-bearing (loan) capital is measured by adding up the mass of credits and aid received during the corresponding year and deducting, from that total, capital and interest payments during the same period. Inflows can be measured in two ways, which in principle should yield identical results. First, the yearly inflows and outflows could be compared to find the value of net inflows. Second, the net variation of the stock of external debt in a particular year can be compared with the outflow in the form of interest payments to get the value of net inflows. In order to compare the magnitude of resources received by a national economy in the form of net loan capital and aid inflows with the magnitude of domestic profits available (i.e. their contribution in supporting the process of capital accumulation), it is first necessary to express the former in national currency. For that purpose, the PPP exchange rates calculated above are used. The use of the official or commercial exchange rates would underestimate the weight of the net inflow of foreign wealth when the national currency is overvalued and vice-versa. Graphs 2.13, 2.14, 2.15 and 2.16 below show the net annual and accumulated inflows of interest-bearing capital and aid to the Brazilian and Korean economies since the mid-1950s.

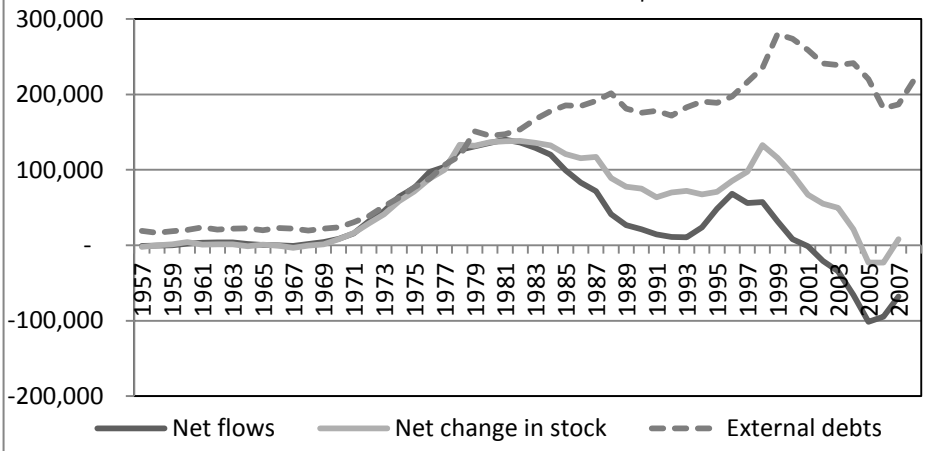
[14] Note that this contrasts with the conventional view that in Korea, unlike in Taiwan, foreign aid rather than agrarian surpluses were used to finance the processes of import-substituting industrialisation during the 1950s and early 1960s.

Graph 2.13
Brazil: Net inflows of credit in million 2004 US$



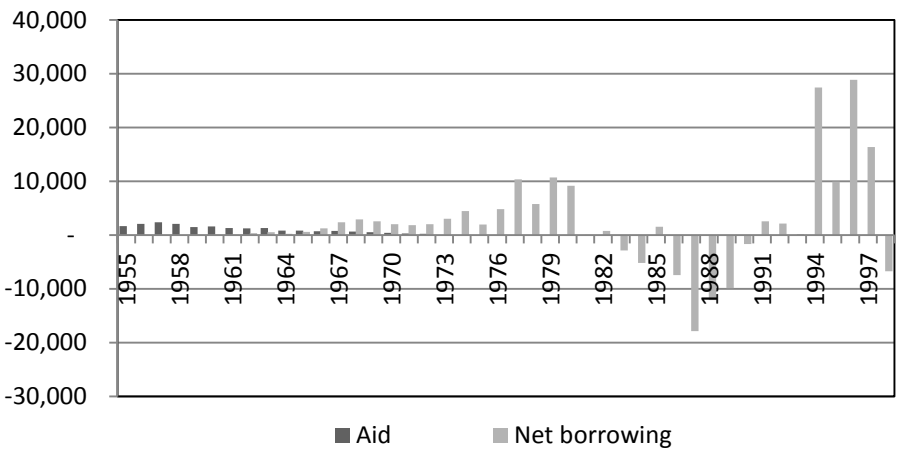
Source: Table C.31

Graph 2.14
Brazil: Accumulated credit inflows and stock of external debts in million 2004 US$



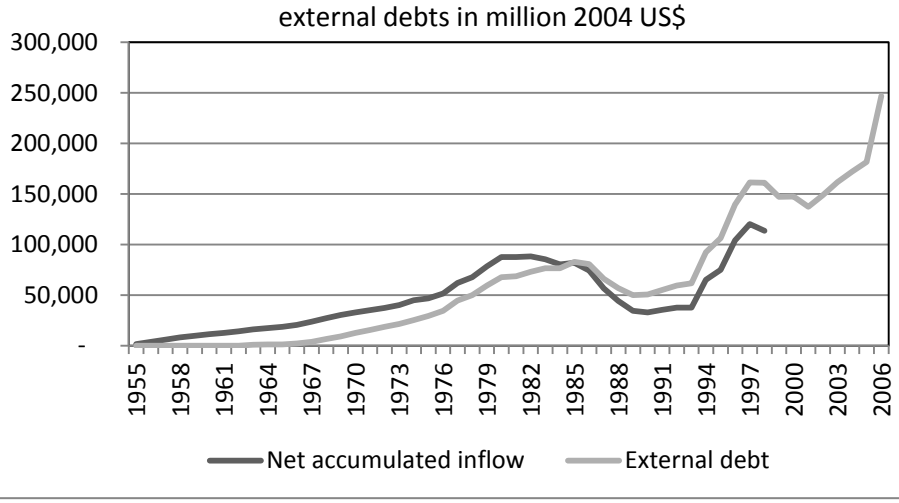
Source: Table C.31

Graph 2.15
Korea: Net inflow of aid and credit capital in million 2004 US$



Source: Table C.32

Graph 2.16
Korea: Accumulated credit and aid inflows and stock of external debts in million 2004 US$

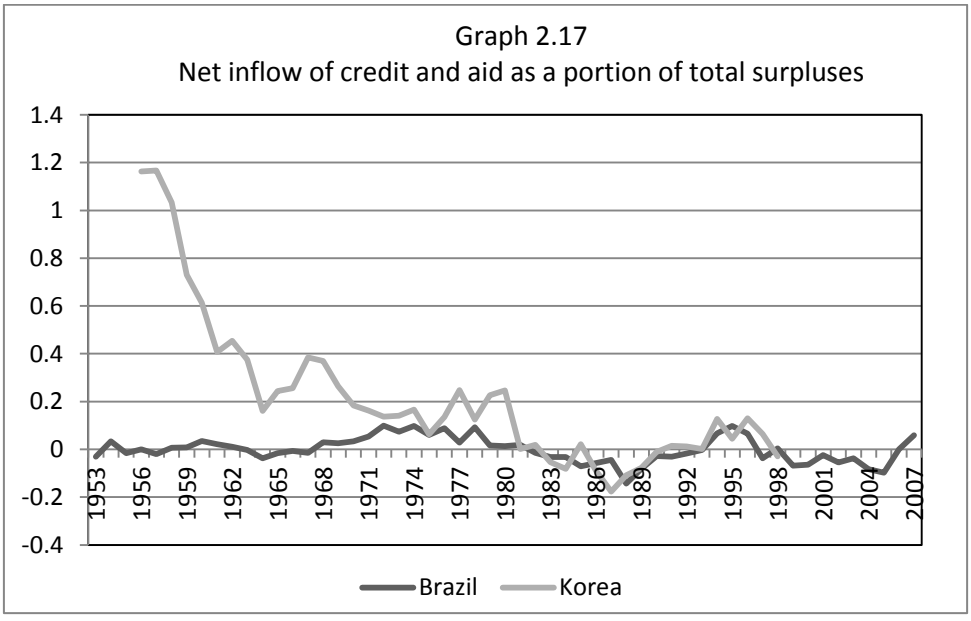


Source: Table C.32

Several observations can be made from comparison of the four graphs presented above. First, the net inflow of interest-bearing capital in the form of credit in Brazil was substantial during 1968-1980, 1994-1997/8 and after 2004. Secondly, net outflows from Brazil were massive during the 1980s, the early 1990s and 1999-2003/4. It should be noted, however, that during the 1980s, outflows of interest-bearing capital appear larger when measured using annual flows rather than net increases in stock of debts.[15] This can

[15] This could mean that the stock of external debt grew more than what was registered in the balance-of-payments account or that some of the outflows were registered but did not actually take place.

be better seen in graph 2.14, plotting the accumulated net inflow of this type of social wealth. Thirdly, the inflow of foreign aid to Korea was substantial before 1965. Thereafter, when the local economy began its structural transformation, it was largely replaced with commercial loans. Fourthly, inflows of interest-bearing capital remained substantial in Korea during the entire period up to the early 1980s and during the 1993-97 global expansion of credit supply. Fifthly, outflows or net payments (i.e. cancellations) of external debts were large during most of the 1980s, the early 1990s and the 1997/8 financial crisis. Sixthly, as graphs 2.14 and 2.16 show, when net capital inflows became negative, as was the case during most of the 1980s, net accumulated inflows fell strongly in both countries. The stock of external debts, however, fell only in Korea. Seventhly, in contrast to the previous point, during the global recession of 1998-2002, interest-bearing capital outflows and, consequently, the reduction of both the accumulated inflow and the stock of external debts were much larger in Brazil than in Korea. As global credit markets recovered, inflows of interest-bearing capital became larger than outflows already (presumably) around 2000/01 in Korea but only around 2006 in Brazil.



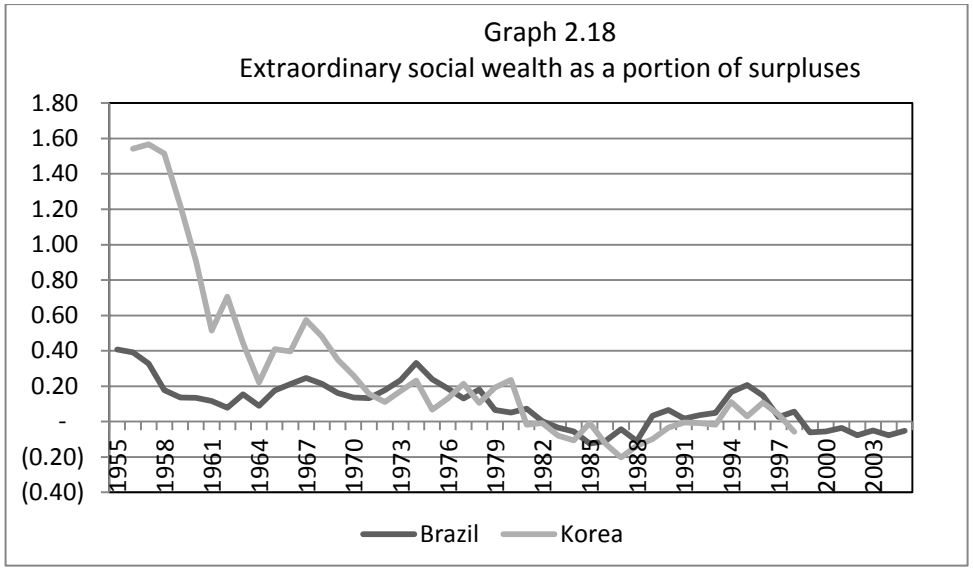
Source: Tables C.12, C.15, C.31 and C.32

The relative importance of the net inflow of foreign interest-bearing capital and aid for the process of capital accumulation in Brazil and Korea between 1955 and 2007 (1998 for Korea) is illustrated in graph 2.17 above. It can be observed there that

between 1955 and 1980 the contribution of 'external savings' to the process of capital accumulation was substantially larger in Korea than in Brazil, equalling 38% and 3% of all profits appropriated in these economies, respectively. Moreover, during 1956-1965 foreign aid inflows to Korea were equivalent to 60% of net surpluses (i.e. profits). It can also be seen in graph 2.17 that, as net interest-bearing capital inflows became negative in both countries, during the 1980s a portion of local surpluses funded capital outflows. Net inflows of loan capital resumed during 1994-97/8, equalling 9% and 4% of total profits in Korea and Brazil, respectively. During 1999-2005 outflows of interest-bearing capital from Brazil took around 6% of surpluses available for appropriation in the economy. Data availability does not allow similar calculations for Korea.

2.8) Combined mass of land rent appropriated by others than landowners and net inflows of foreign interest-bearing capital (credit) and aid as a portion of total surpluses

Land rent and inflows of capital in the form of credit and aid have been complementing normal surpluses available for appropriation in the two economies under study and thus sustaining the process of capital accumulation there. In order to grasp the importance of these sources of extraordinary social wealth in supporting the process of capitalist development in Brazil and Korea, graph 2.18 below plots the relationship between the combined mass of land rent appropriated by others than landowners (i.e. by capital) and net capital inflows in the form of aid and loans as a portion of all surpluses appropriated in the Brazilian and Korean economies.



Source: C.12, C.18, C.15, C.19, C.31 and C.32

Graph 2.18 shows that the combined mass of both extraordinary sources of social wealth contributed substantially to the process of capital valorisation and accumulation in both countries before the early 1980s and during most of the 1990s. They amounted to 19% and 50% of total profits in Korea and Brazil, respectively, between the mid-1950s and 1980 and 12% and 7% during 1994-97/8. A similar process has been taking place in the more recent period, after 1999/2000 in Korea and after 2005 in Brazil. As can been seen in graphs 2.13 and 2.14 net credit inflows enlarged recently in both countries. Moreover, as shown in graphs 2.3 and 2.10, the Brazilian economy also saw the strong expansion of land rent available for appropriation and actually appropriated by capital. The composition of these sources of extraordinary wealth, however, has been different in both countries. While loan capital inflows complemented, as junior partner, the land rent in Brazil, they were the only source of extraordinary wealth sustaining the process of capital accumulation in Korea after around 1970. During the 1980s, the late 1990s and the early 2000s, the reverse was true. In Korea, normal surpluses produced in the economy followed their course to cancel part of previously contracted external debts. In Brazil, these surpluses, in some occasions complemented with a portion of land rent, also followed their way out of the economy.

2.9) Summary and conclusions

Several conclusions can be drawn from this chapter. First, that the mass of primary sector surpluses appropriated by social actors other than landowners, notably by industrial capital, were significant both in absolute terms and relative to capital's profits in Brazil during the entire period under study, with the sole exception of the 1980s, and in Korea before 1970. Secondly, that the mass of extraordinary profits in the form of land rent available for appropriation in the Brazilian economy contracted during the second half of the 1950s, albeit from historically high levels, as the Korean War 'commodities boom' ended; expanded moderately during the 1960s; grew strongly during the 1970s, as the oil shock was followed by a new 'commodities boom'; contracted sharply during the first half of the 1980s, as commodity prices collapsed; recovered during 1994-1998, as these prices recovered; contracted again during 1999-2003, as prices fell sharply; and, expanded strongly after 2004 as a new 'commodities boom' was beginning to take place. Thirdly, in general, periods of high or growing levels of land rent corresponded in Brazil with moments when the portion appropriated by industrial capital was also growing, and when the profitability of the latter was, consequently, sustained at relatively high levels. By contrast, periods when the land rent contracted corresponded with periods of relatively low profitability in the industrial sector. Nevertheless, this was not always the case. Though both the 1970s and 1990s were periods of land rent expansion (and of large inflows of foreign credit), only the first one correlated with high levels of profitability of industrial production. The land rent has been used in Brazil to compensate for the productivity gap. The evolution of the latter is thus a key variable explaining industrial capital profitability. Fourthly, it was seen that the inflow of aid in Korea during 1956-65 was substantial, equivalent to as much as 60% of net surpluses (profits) appropriated in the economy. Fifthly, net inflows of credit in both countries were largely positive and significant between the late 1960s and early 1980s and during 1994-98, and largely negative during the 1980s and between 1998 and 2002/3. These movements, it should be noted, corresponded with the evolution of credit supply in the global financial markets.[16] Sixthly, the rate of profit of industrial capital in Korea since the late 1960s, when its export orientation began, moved together with that of the USA. Between 1968 and 1992, the rate of profit of industrial capital in Korea mimicked the evolution of the rate of profit of industrial capital in the USA, with the exception of the period 1979-82 when the sharp increase of

[16] See graph 1.2 in Chapter 1 and Kaminsky (2005).

interest rates in world financial markets particularly affected developing countries. During the 1990s, however, this trend ended; the rate of profit of industrial capital in Korea could not recover from the 1988-92 drop as was the case in the USA. In summary, the present chapter showed that the Brazilian and Korean processes of capital accumulation have been heavily dependent for their normal reproduction on the land rent and other sources of extraordinary social wealth, like the inflow of foreign loans and aid. The size and combination of these was, however, different in each country.

Chapter 3

Determinants of the Valorisation Capacity of Industrial Capital in Brazil and Korea: the Steel, Automobile and Semiconductors Sectors

The previous chapter advanced evidence in support of the claim that the process of capital accumulation in Brazil, during the whole period studied, and in Korea, until the late-1960s, were heavily dependent for their normal reproduction and development on the appropriation of a portion of primary sector surpluses, notably the extraordinary profits available there in the form of land rent, and their complementary sources of extraordinary social wealth (i.e. external credits and aid inflows).

The goal of this chapter is to provide support for the hypothesis that technological changes leading to the development of the NIDL and the characteristics of these countries' workforces explain both Korea's emergence through the 1970s and 1980s as a major producer of increasingly complex and sophisticated manufactured goods for world markets, and Brazil's inability to follow suit despite having originally developed a broader and deeper industrial base. For this purpose, the chapter briefly reviews the most important technological changes taking place in large-scale industrial sectors since the 1960s, in particular in the steel, automobile and semiconductors industries, and examines how they affected Korean and Brazilian productions in these branches of manufacturing. These three sectors were selected not only because they are among the most important in both countries' industries in terms of value-added and employment, but also because they jointly express the most salient aspects of major trends in technological transformations taking place in the global economy since the 1960s, crucially in terms of their impact upon the structure of skills required from the industrial workforce. Hence, the evolution of these sectors jointly reveals the specific characteristics of both national processes of capitalist development. The appendices present quantitative evidence supporting the arguments advanced throughout the chapter, including different methodologies used to measure the rate of profit of specific representative industrial capitals and its main determinants.

3.1) Development of automated systems of machinery and the structure of skills in large-scale industrial productions

The development of labour productivity is the most powerful form of increasing the rate of capital of valorisation. In the short run, before competitive pressures generalise the conditions that allow the gains, productivity improvements reduce production costs and thus increase the rate of profit of those capitals that first obtain them. In the long run, as new technical conditions became the norm and competition forces the cost of producing goods and services to fall, productivity gains directly or indirectly reduce the cost of reproducing the labour-force and thus expand the mass of net surpluses (i.e. surplus-value) available for the valorisation of total social capital. The development of labour productivity is thus the most powerful lever of the process of capital accumulation. The development of the system of machinery of large-scale industry is, in turn, the most potent way of increasing labour productivity in the capitalist mode of producing human life. This process is centred on the advance of scientific knowledge over natural forces and their control through the technological application of science, that is, their objectification in the instruments of production.[1]

The development of the system of machinery – i.e. the transformation of tools used for the productive consumption of raw materials into mechanical implements - does not simply increase the average or normal productivity of labour. As a consequence of, and condition for, its own continual development, it also constantly revolutionises the productive characteristics of the industrial labour-force. This impact, however, is not uniform but differentiated, continuously changing the structure of skills required from the collective (i.e. combined) worker of large-scale industry. On the one hand, the process of mechanisation transforms productive attributes of human labour into attributes of the machine. Each advance thus tends to reduce the skills necessary to operate machine-tools and, therefore, to intervene directly in the transformation of raw materials in the shop-floor.[2] Moreover, technological advances also tend to deprive the need for any necessary skill whatsoever, and transform it into a surplus for the process of accumulation, the portion of the labour-force expulsed from the immediate process of production and not reabsorbed through the absolute expansion of the scale of accumulation.[3] On the other hand, each advance in the systems of machinery increases their complexity, and thus the skills and knowledge required to develop them further and to organise production processes based on them, especially as the optimal scale of

[1] See Marx (1990: 508-17); Iñigo Carrera (2008: 15-23).
[2] See Marx (1990: 544-53); Aglietta (1979: 113).
[3] See Marx (1990: 553-75).

production tends to increase with their development. Though these trends are inherent to the development of labour productivity in capitalism, their extent has expanded strongly in the last forty years or so.[4]

Starting in the last part of the 1950s, the development of large-scale industries evolved in two separated lines that finally converged during the 1980s to give place to the current robotised and largely automated industrial facilities. On the one hand, industries based on serial, repetitive production methods, where the transformation of raw materials is done sequentially, witnessed technological improvements that centred on the automation of machine-tools and the computerisation of their calibration and control. On the other hand, in continuous flow or 'process' industries, where raw materials are subjected to a series of physicochemical transformations, technological improvements began to be centred on the informatisation of the monitoring of production processes and, subsequently, the automation of their control.[5]

In general terms, two lines of technological transformations took place in the first group of industries around the late 1950s. In mass mechanical production sectors, like the automobile and white-goods industries, the complex general-purpose machine-tools were simplified and transformed into special-purpose ones. These were then automated using already available hydraulic, pneumatic and electromechanical devises. Though this type of limited automated machinery was already emerging during the first part of the twentieth century, it is only in the 1950s that its use became predominant. Furthermore, only then were different machines integrated into one mechanical system through the use of motorised 'transfer lines', thus giving place to the first *fixed automation* systems of production (the so-called 'Detroit automation').[6] The singularity of these systems was that along the production line for parts and components there were now machines rather than manual workers. Consequently, worker dexterity and tacit knowledge over tools and materials were no longer productive attributes needed for the operation of machine-tools and the transformation of inputs into a desired output. Assembly and fitting operations remained, however, manual, though subjected to the rhythm of work given by the semi-automatic assembly line. On the contrary, in batch production sectors, like capital-goods industries, machine-tools remained complex and

[4] See Iñigo Carrera (2008: 56-9) for the original identification of the three-folded differentiation.
[5] See Coriat (1992: 38-50).
[6] They were considered *fixed* in the sense that once the production line was set up, it was only useful for one specific product line with few variations. These systems, consequently, could only be used profitably for large-scale operations. See Coriat (1992: 73-5); Hounshell (2000: 128-34).

able to perform sophisticated and precise operations. Technological advances introduced to improve their performance and precision centred on the simplification of their calibration through the use of numerical control. The emerging Numerically Controlled (NC) machine-tools were simply the old ones with 'computing' systems attached to them (e.g. punch cards, magnetic tapes). The latter were capable of breaking-up and measuring accurately every single movement performed by the machine-tool and, consequently, of programming their optimum sequence to transform an input into a desired output, thus no longer relying on the specific craft-like tacit knowledge and adroitness of the operator.[7]

While in serial (discrete) production industries 'incremental' improvements continued thereafter on these new bases, starting in the 1960s, in continuous flow industries, like the petrochemical and, to a large extent, the metallurgical ones, key innovations were centred on the computerisation of the conduction and control of the physicochemical processes required to transform raw materials in the desired direction. On the one hand, through the use of sensors and computers, information about the state and progress of the material transformations at stake was obtained and transformed into simple readable signs displayed in screens, instrumental panels or other visual systems. Though, at first instance, the necessary adjustments in the productive processes were still done 'manually', and therefore required some kind of tacit knowledge to perform them, those technological advances already made certain specific skills no longer necessary. These tasks had been performed by manual skilled workers directly using their sensory capacities and accumulated know-how acquired through lengthy on-the-job learning-by-doing processes. On the other hand, later on, through the use of central computers and electromechanically-controlled devices, the adjustment of operations was also automated. Experienced manual workers were then further detached from immediate production processes to become simple watchers and controllers, requiring a different set of productive characteristics and therefore of skills and training.[8]

[7] See Shaiken (1986: 66-70); Seering (1987: 31-8); Coriat (1992: 52-3). "The best machine tool operator in a given shop is more likely to have had 20 years of experience than a college education. Machine tool operation is a craft; it is generally learned from a qualified practitioner and it takes a long time to master. […]. It takes less skill to monitor and handle parts for an NC machine than it does to operate a standard machine. Thus, training periods for NC operators may be shorter. And shorter training periods lead to expansion of the pool of available workers and correspondingly to a reduction to a reduction in wage levels." (Seering, 1987: 34, 38).

[8] See ILO (1963, 1992); Coriat (1992: 188-92); Balconi (1999).

Since the early 1970s, several inter-connected technical advances can be observed. The miniaturisation of electronic components through the use of chemical elements with semiconducting capacities, and the so-called microelectronics revolution to which this gave place, resulted in reductions of the size and costs of computing and controlling devices, thereby increasing their power, reliability and precision. As a result, the complexity and outreach of automated and computerised technologies increased. Electronics-based automation enhanced exponentially the potentialities, and thus the trends springing from, machinery automation *vis-à-vis* the hitherto predominant, largely electromechanical technologies.

In small batch (discontinuous) industrial processes, computing devices attached to machine-tools became smaller and more powerful, transforming, and thus further improving the attributes of, NC systems, thereafter known as computer numerically controlled (CNC) machine-tools. This transformation in turn gave place to a further simplification in the tasks of the machine-tool operator turned controller. As small computers were attached to them, not only the calibration of NC machine-tools for different operations was simplified further. These could now self-calibrate the retooling necessary to undertake different types of transformative operations on the same piece, thus becoming proper 'machining centres'. In mass production, repetitive industries, microelectronic technologies further simplified the process of calibration of machine-tools for serial runs and improved the coordination of different machines and the circulation of materials through them. Central computers, connected to microcomputers attached to individual machines, could regulate the speed of transfer lines and the flow of materials through them. In the continuous flow industries, the planning, control and adjustment of production processes were simplified further, becoming even less reliant on the tacit accumulated knowledge and sensory capacities of production workers. Conversely, in all types of industries, these transformations tended to increase the scale and, crucially, the complexity of production processes, enhancing the role of wage-earners in charge of planning and management *vis-à-vis* shop-floor workers.[9]

The development of microelectronic technologies also permitted the combination of informatics with hydraulic and electromechanical technologies, and gave place to the emergence of 'intelligent' industrial robots. In contrast to previously developed specimens, such as simple manipulators and sequential robots, intelligent

[9] See Aglietta (1979: 125-30); Coriat (1992: 56-7); Balconi (1999: 48-50).

robots were capable of recognising materials and parts before them and of selecting and performing the proper operation from a previously programmed set of options. In this way, industrial robots could manipulate tools and perform fittings in the assembly line, thus further pushing the intervention of semiskilled manual labourers away from the production process. The integration, through computer-run programmes, of robots and CNC machine-tools greatly increased the degree of automation and flexibility of industrial facilities.[10] Furthermore, the miniaturisation of computers and the consequent improvements of their capacities also gave place to the automation of design and conception activities as well as administrative office work, thus also simplifying some aspects and portions of these work processes. Both the automation of the shop-floor and the office combined greatly increased the systemic integration of productive facilities.[11]

Though these technological developments have not followed a linear progression, the underlying trend has been towards an increased automation of large-scale industrial facilities. The general effects of this pattern of technological transformations on the structure of skills required from the collective worker have been threefold. First, the emerging and consolidating technologies have tended to eliminate simple (unskilled) manual labour, as processes such as materials transport/handling and machine feeding have been progressively automated and robotised. Secondly, they have tended to expand the amount of 'office' work by taking away from the shop-floor the programming of machine-tools and the planning of large-scale industrial productions based on them. These two effects have led to the relative decrease of blue-collar *vis-à-vis* white-collar workers in industrial plants.[12] Though 'office' work has tended to require a more skilled and longer-trained workforce, these activities have also been affected by the continual introduction of automated, and thus work-simplifying, techniques in this section of large-scale industrial facilities. Thirdly, these technologies have also tended to transform the skills necessary to perform productive tasks on the shop-floor, notably those involving the operation and calibration of machine systems. While skills related to these activities as well as the practical knowledge of materials and processes gained through prolonged on-the-job experiences have been increasingly

[10] Unlike *fixed automation* systems, electronics-based automaton could be reprogrammed at relatively low cost.
[11] See Coriat (1992: 57-9).
[12] In this sense, automated and computerised technologies have been, as all forms of mechanisation, 'skill-biased'.

dispensable,[13] others acquired through formal technical education, like basic computer literacy and theoretical knowledge of the unity of manufacturing activities, have become relatively more important.[14] In some cases, this resulted in an expansion of the intellectual content of work processes (i.e. 'up-skilling'), as these activities involved analysis of problems and decision-taking. In other cases, these activities rapidly became trivialised and routinised.[15] Moreover, the new technological base has also generated, as its own condition of existence, a multitude of production processes still subjected to the manual intervention of low-skilled labourers, like the assembly, testing and packaging of electronic micro-components and electronic appliances which are at the base of the robotised and computer aided systems of machinery.

In other words, the emerging technological base has substantially increased the differentiation of the productive attributes required to perform the different tasks involved in large-scale industrial productions. This has manifested itself in the increased differentiation in the costs of production and reproduction of the different portions of the collective worker of large-scale industry. To begin with, the technical and scientific knowledge necessary to perform the most skill-intensive work processes have expanded further. Moreover, the portion of the labour-force performing the most complex, skill-intensive activities has been increasingly required to make productive and commercial decisions on behalf of capital (i.e. to 'solve problems' and pursue 'creative solutions'). Both trends have resulted in the expansion of the educational periods necessary to produce the more skilled portion of the industrial labour-force, the increase in its consumption of goods and services that enhance the development and reproduction of the capacity to perform analytical and abstract thinking (e.g. artistic-cultural, leisure and recreational goods and services), and, as the intellectual intensity of these work activities increased, the continual shortening of the working-day. The opposite trend has tended to occur with respect to the less skilled segments of the labour-force. Furthermore, this differentiation has also expanded the necessity to enlarge the separation in the consumption patterns of both portions of the collective labourer of

[13] In this sense, computerised and automated technologies have been, as all forms of mechanisation, 'skill-replacing.' Though most often missed by mainstream economists, this aspect of the new technological base helps explain the reduction of wages paid to production workers in the USA and Europe since the 1970s. See Acemoglu (2002) for the acknowledgement of the explanatory vacuum. For an exception, see Autor et al. (2001).
[14] See Balconi (1999: 17).
[15] See Coriat (1992: 183-4, 203-5); Iñigo Carrera (2008: 56-9).

large-scale industry for a different reason. As the differentiation of productive attributes advances, the more the portion performing the most skill-intensive activities needs to perceive itself as not belonging to the same social class as the other portion, namely, the class of individuals who sell their labour-power (i.e. their capacity to work for a limited period of time) for a wage/salary, the working-class.[16]

3.1.1) Transformations in the global steel industry

Steel manufacturing is mostly a continuous process. In large-scale integrated mills, basic raw materials undergo a series of physicochemical transformations until they take the form of the desired final product, namely, different types of steel. As such, the steel industry has not been alien to the technological transformations described above. On the contrary, it has been at their centre.

During the second half of 1950s and, especially, the 1960s, the steel industry witnessed two major 'discrete' technological changes, notably in the large-scale fully integrated sector. First, the traditional Open Hearth Furnace (OHF) was replaced by the Basic Oxygen Furnace (BOF) for the production of pig iron. Secondly, ingots making was replaced by continuous casting (CC) technologies for the transformation of pig iron into steel. The BOF implied the substitution of atmospheric air for oxygen, in order to improve yields and output quality. CC entailed a sharp leap forward in the mechanisation/automation of the production of steel, allowing the casting of steel into basic shapes directly from the blast furnace –i.e. without the need to cool the material down in the shape of ingots before transforming it into semi-finished steel products. This not only reduced the consumption of energy in steelmaking but also constituted a major step in the transformation of the production of steel into a fully continuous, uninterrupted process.[17]

Apart from these two major discrete changes, several less noticeable, but crucial, advances in the automation of production processes also took place. These had mainly two focal points. First, they aimed at introducing automatic methods for the transport and charging of raw materials, and the automation of rolling mills for the transformation of semi-finished slabs into final products. Secondly, they were centred on the

[16] See Iñigo Carrera (2008: 56-9).
[17] For a detailed account of these technological changes, see ILO (1963: 8-20); Barnett and Schorsch (1983: 152-60); D'Costa (1999: 33-7)

informatisation and automation of control over the physical properties of the product along the different stages of its material transformation.[18] These operations, as well as the process of ingot casting, had hitherto relied on the practical, tacit knowledge of experienced skilled manual workers.[19]

Though most of these technological innovations took place in Europe during the second half of the 1950s, it was the Japanese steel industry that would adopt them at the fastest speed.[20] Japanese steel mills rapidly incorporated state-of-the-art continuous-process technology and transformed the industry from a traditional, batch-process heavy industry to a highly automated, continuous-process, materials industry.[21] Moreover, Japanese mills were also the earliest and fastest to incorporate extended process control computing systems.[22] This strategy of technological upgrading would allow Japanese capital to gain, by the late 1960s, a leading role in the global steel industry. Unlike their Japanese, and to lesser extent European, counterparts, US steel firms, hitherto the largest and most efficient, were relatively slow to adopt these new technologies and thus quickly lost ground in world markets.[23]

Traditional explanations for the relative decline of the US steel industry, and of the successful rivalry by Japanese firms, have emphasised poor government planning/support and private sector conservatism, the existence of large sunk costs in traditional facilities and the availability of cheap sources of energy.[24] Though important, these factors cannot fully explain the change in world steel hegemony. In effect, the

[18] See ILO (1963: 9-11); Coriat (1992: 48-50).

[19] "As until the end of the 1960s the instruments to measure the temperature of liquid steel (detectors) and to make rapid chemical analysis (electronic spectrometers) were not diffused, measurements were carried out by empirical methods based upon the association between some physical characteristic observable by sight and the value of the variables to be measured. Thus in order to know the temperature of liquid steel, a sample was taken out of the furnace, poured upon an iron plate and the temperature was deduced by observing the forming of the spot, its shape and the way it solidified and attached itself to the plate. The ability to recognize the temperature by sight was clearly tacit and acquired through a long practical experience. Moreover, in order 'to analyse' the chemical content, a liquid steel sample was solidified in a mould and then extracted and beaten by a mall upon a V-shaped anvil. Depending on the carbon content, steel either broke or bent. When it broke, the shape of the fractures and of the grains revealed to the eyes of the expert the content of other elements, the ductility and other features of the metal, depending on which it could be decided what (and how much of) elements had to be added in the furnace. It is estimated that 5 years of experience or more were necessary to acquire the indispensable skills, while no formal school education was called for." (Balconi, 1999: 15). See also ILO (1992: 38).

[20] See Barnett and Schorsch (1983: 52-7).

[21] See Florida and Kenney (1992: 152); Hasegawa (1996: 79-84).

[22] See Hasegawa (1996: 85); D'Costa (1999: 71-2). Japanese firms were also the fastest to introduce BOF technologies. This was necessary to increase the scale of blast furnaces and thus make the introduction of expensive continuous casters profitable.

[23] See Ault (1973); Barnett and Crandall (1986: 36-55); D'Costa (1999: 37-43).

[24] See Maddala and Knight (1967); Mueller and Kawahito (1978: 5-6); Florida and Kenney (1992: 151-2).

main problem with the first type of accounts is that they cannot explain why US firms and governments went from one kind of commercial attitude to another one (i.e. from 'rational' and innovations friendly to innovations resistant) in less than ten years.[25] The main problem with the second type of explanation is that US firms lack competitiveness in the international markets would have remained even if continuous process automated technologies had been implemented as extensively as in Japan. It has been shown elsewhere that increases in labour productivity (and therefore cost reductions) due to the use of continuous casters in the USA were meagre in comparison with the improvements enjoyed in Japan and did not compensate for the massive costs of the new equipment.[26] Indeed, both groups of criticisms fail to realise that the new technological conditions resulted in the simplification of several productive tasks and, as a consequence, produced a change in the composition of the workforce and its skills requirements.[27] Simplification and standardisation of labour processes on the shop-floor meant that these tasks could be performed by a less skilled and cheaper labour-force as the Japanese, which was itself particularly productive due to its historical origins and characteristics.[28] Labour costs per unit of output thus became lower in Japan than in the USA as relative labour productivity changed in favour of the former. Moreover, Japanese companies could take advantage of particularly favourable labour laws, weak trade unions and 'socially-accepted' hierarchically-organised labour relations These lowered labour costs further below international levels by allowing Japanese capital to make extensive use of less skilled and cheaper 'temporary' or 'outside' workers for the heavier and more standardised/simplified activities.[29] These types of wage-earners did

[25] See Chen (1996).
[26] See Barnett and Schorsch (1983: 111-32).
[27] This was noticed by the Steel Industry Committee of the International Labour Organisation. Its 1963 meeting evaluating the effects of the new technologies in the structure of skills and remuneration of the labour force concluded the following. "The qualifications for which the need is reduced by mechanisation are the simpler ones, such as physical strength or manual dexterity. But the earlier techniques of production also required a good knowledge of the material and sometimes a complete understanding of the machine which, because of its relative simplicity, was not serviced to the same extent as modern equipment.
Once the principles of automation come into play, even where this is present only to the extent of automatic gauges and other measuring devices, some of the technical knowledge of the workers is supplemented by the machine. What previously required the decision of an experienced worker on the basis of observation of a complex process is replaced by a much simpler reading. At a more advanced stage of automation, even this task is removed from the worker who more and more becomes a 'watcher' over machines." (ILO, 1963: 34-5).
[28] See Hasegawa (1996: 111-27) on the impact of work simplifying automation on manual worker productive attributes and the structure of skills in the Japanese steel industry.
[29] See Barnett and Schorsch (1983: 64-9, 95).

not benefit from 'life employment' practices, received lower wages and had access to fewer company-provided benefits than their 'permanent' or 'inside' colleagues.[30]

The rapid growth of the Japanese industry and its transformation into a global leader in terms of volume and cost competitiveness in basic steel products, then, was not simply the result of strategic planning by an active 'developmental' state, notably regarding the acquisition of foreign technology and the location of plants.[31] On the contrary, Japan's lead was largely the result of the aforementioned technological changes and the availability there of a relatively cheap and disciplined workforce suitable to act as an appendage of the increasingly automated and computerised systems of machinery.[32] These factors transformed Japan into a base for the profitable production of steel products for global markets. States policies accelerated the process of concentration of capital in the scale and conditions needed for international competition and thus mediated rather than caused the transformation.

To the surprise of many contemporary observers it was Korea which during the second half of 1970s became Japan's fiercest competitor. Contrary to the opinion of many later commentators, Korean capital's incorporation in the world division of labour as a major producer of basic, low value-added, steel products was not simply the result of bold government action copying the 'Japanese model' and creating a state-of-the-art state-owned industry.[33] It mainly resulted from two other processes. First, the continual advances in the automation and computerisation of manufacturing facilities and its effects on the further simplification/standardisation of certain labour processes and, consequently, on the skills required to perform them competitively. Secondly, the increase in the cost of the Japanese industrial labour-force and the possibility to replace it, in the case of basic steel products, by another workforce with similar productive

[30] See Hasegawa (1996: 52-4, 103-11) on the 'dual' structure of employment in the Japanese steel industry and its usefulness for capital to differentiate tasks as well as work and payment conditions. This author provides a comparison with the experience of British Steel Corporation.

[31] See, for instance, D'Costa (1999: 57-81). It has been argued that the coastal location of Japanese plants, reducing transport costs for both raw materials imports and exports of output, was the key source of their international competitiveness. This position, however, fails to acknowledge that British and French steel mills located in coastal areas were not as successful as their Japanese counterparts during the 1970s and 1980s. See Hudson and Sadler (1989).

[32] Indeed US steel industry only began to recover through the late 1980s with the advent of the mini-mills, establishing plants in the west and south of the country where labour-force was non-unionised and unskilled but easily trainable, and the greenfield and brownfield investments made by Japanese firms in the integrated sector. Mini mills, unlike integrated plants, produce steel from scarp using electric furnaces. They are significantly more automated and computer-controlled than integrated plants. They thus require less industry-specific tacit knowledge. On the main characteristics of mini-mills, see Barnett and Crandall (1986: 4-5, 27-8); Florida and Kenney (1992: 150).

[33] See e.g. Amsden (1989) and D'Costa (1999).

characteristics (i.e. skills and historically developed and politically reinforced discipline) such as the Korean.[34]

The inability of the Brazilian steel industry to perform the same spectacular development, despite its much longer history, was not simply the result of poor economic policies or entrepreneurship. Given the characteristics of the local industrial workforce (neither as cheap nor as disciplined as the Korean) and the availability in the local economy of a massive land rent, industrial capital continued maximising it profits in the Brazilian economy by producing for domestic markets. As in Korea, before the early 1990s, a largely state-owned steel industry was a key piece in the process of accumulation for private manufacturing firms, through the provision of steel products at subsidised prices. This was of particular importance for the durable-consumer and capital goods and construction industries. Unlike in Korea, however, Brazilian state-owned steel mills also constituted a medium of land rent transference to the machine-tool, heavy engineering and construction industries through their constant purchase of equipment and services at inflated prices.[35]

The Korean steel industry

In the late 1960s, the Korean steel industry was practically non-existent. Private domestically-owned firms, utilising obsolete facilities and a large amount of imported pig iron or scrap steel, satisfied around one-third of domestic steel market needs.[36] In 1966, for instance, Korean self-sufficiency ratio was under 40% (for a total demand of about 0.5 million tons), well below the Brazilian level.[37] There was not a single large-scale integrated mill, let alone an internationally efficient plant and quality steel

[34] "The point is that codification and automation have displaced many skills. The result is that they have even been lost, with the progressive disappearance of their human repositories, and that in many sectors knowledge barriers to entry have been greatly lowered, since no craftsman tradition is required to set up a factory. To a considerable extent the explosive growth of manufacturing in the Asian countries could not have been possible without this evolution. In fact the new manufacturing powerhouses do not comprise only assembling factories, which intensively employ low-cost unskilled labor, but also processing industries, like steel and textiles, that could be equipped with modern automated plants exported by the West, with no need for old type skilled workers, whose training would have been impossible without many years of experience on the job." (Balconi et al. (2007: 20).

[35] See D'Costa (1999: 85-6).

[36] See Watanabe (1978: 391); Cohen (1978: 422); Amsden (1989: 295); Hogan (2001: 39).

[37] See D'Costa (1994: 52). In mid-1960s Brazil, imports constituted around 10% of apparent consumption of steel. See Fisher (1988: 168).

producers. There were three already in Brazil.[38] A decade later this situation would have changed radically.

In order to reverse the prevailing situation, in 1965, as part of the drafting of the Second Five-year Economic Development Plan (1967-71), the Korean government finally began to set the strategy for the construction of a fully integrated steel mill. Against the advice of foreign governments and international agencies, including the World Bank, and facing the refusal of foreign investors to take part in the project, the government pursued its old, and so far largely unsuccessful, ambition of having a large-scale fully integrated steel mill in the country. That was allegedly necessary to help develop a 'balanced' industrial base, including the military industry needed to protect the nation from the 'threat' permanently posed by North Korea, crucially after the change in US security policy for East Asia.[39]

The construction of a large-scale fully integrated steel mill in Korea was not, however, a straightforward project. To being with, it was an enterprise that required an amount of capital that no local private company could then hope to raise. Secondly, the local private sector was also unwilling to risk capital in an industry that, given its importance for the process of industrialisation and national defence, could easily fell under strong government regulations.[40] Thirdly, despite the government's desires, foreign companies were similarly not prepared to undertake such a supposedly unviable project.[41] Moreover, the small size of the Korean domestic market and the high minimum efficient scale of production militated against the construction of more than one integrated steel mill. A private company, whether nationally or foreign-owned, would have thus enjoyed a virtual monopoly.[42] As in most other contemporary developing countries, and many developed ones, the state, the political representative of Korean social capital, thus took charge of the project and using its own (including part of Japanese war reparations) and externally borrowed resources created the Pohang Iron

[38] See the next section for the Brazilian steel industry.
[39] See Amsden (1989: 295); Haggard (1994: 33-4); Clifford (1998: 67-71).
[40] See Park (2003: 67-8).
[41] Through the 1960s, the Korean government initiated contacts with foreign governments and companies in order to promote the establishment of a fully integrated steel mill in Korea. A consortium of firms from the USA, Germany, England, France and Italy was formed to undertake the project in partnership with the Korean government. Most of the funds would come from state agencies in these countries and the World Bank. By the late-1960s, however, the project was already failing to materialise as the main participants refused to build the large-scale fully integrated mill the Korean government was pushing for. The former argued that Korea could only hope to have a steel mill with the scale to cater its small domestic market. Indeed, a study produced by the World Bank claimed that anything larger than that would inevitably fail. See D'Costa (1994: 56); Hogan (2002: 3-10).
[42] See Park (2003: 47).

and Steel Company (POSCO) in 1968. A few years later, in 1973, the government launched the Heavy and Chemical Industries (HCI) Plan, strongly promoting, among other sectors, the steel industry. POSCO has been since then the main producer of (high value-added) flat products and until recently the only one in Korea with integrated facilities. All privately-owned mills have used electric arc furnaces to finish the raw steel mainly bought from POSCO.[43]

The construction of POSCO's first plant in the southeast coastal city of Pohang took place in five stages between 1970 and 1984. Following the Japanese example, POSCO's two plants would be located on the coast both to facilitate the importation of raw materials and to reduce the cost of export operations. Large domestic consumers of steel also located in southern coastal cities as they too have produced for world markets. For the construction of Pohang mill, POSCO contracted most technology and technical assistance, notably in plant designs, from global markets leader Nippon Steel of Japan, though it also sourced part of its equipment in Europe. The low cost of the local labour-force and the semi-military discipline used in the building process, in turn, maintained construction costs at internationally low levels.[44] These averaged around US$ 500 per ton of production capacity, even below the US$ 590 of an average plant in Japan, where the most efficient steel producers in the world then located.[45] Production capacity in 1985, when POSCO's first plant was finally completed after successive enlargements, reached 9.6 million tons per year, well above the 'theoretical' minimum efficient scale of 3.5 and almost equal to the average of the Japanese industry.[46] During the first stages of its history, POSCO concentrated in the production of heavy plates and hot-rolled coils, used in the shipbuilding, automobile and machinery industries. These were the branches of manufacturing that were then expanding under strong state support. Higher value-added products, like cold-rolled coils and specialty steels, were relatively unimportant at the initial stages of POSCO's development.[47]

POSCO's ascent was fast, even for Korean standards. It rapidly became a large producer and exporter of steel. By the early 1980s, within less than a decade of starting-

[43] See D'Costa (1999: 84).
[44] See D'Costa (1994: 58-60).
[45] See Amsden (1989: 297); Auty (1991: 19-20); Hogan (2001: 15-25).
[46] See Barnett and Schorsch (1983: 57-9) on scale economies and Japan's experience.
[47] According to Park (1997: 14) valued-added per worker at POSCO was still in 1986 approximately a fourth, a third and a half of the Japanese, US and European average producer, respectively. Furthermore, as late as 1988, POSCO only produced 6.5% of specialty steel, a third of the average Japanese producer. See Park (1997: 16).

up, with the completion of the third expansion stage, the company was successfully competing in world markets for finished steel, at least in the less sophisticated and skill-intensive products, with Japanese integrated mills, the contemporary lowest cost producers.[48] During the 1970s and 1980s, the firm sold about half of its output in the world market and most of the rest to domestically located, export-oriented sectors such as the shipbuilding, machine-tools and automobile industries.[49] Through the sale of steel products at subsidised prices in the domestic market, POSCO transferred, during most of its life, a portion of its profits to these privately-owned downstream industries helping them strengthen their international competitiveness.[50]

Table 3.1

Cost of producing hot-rolled coil

US$ per ton of finished product in 1985

	Japan	Korea
Major raw materials	94	84
Labour costs	41	18
Other raw materials	54	47
Total operating costs	189	149

Source: Grieves and Saul (1986: 3-7)
Note: Administrative and financial costs are not included

Table 3.2

Operational cost of producing flat steel

US$ per ton of finished product in 1985

	Japan *	Korea **
Hot-rolled coils	199.5	199.0
Cold-rolled coils	232.8	260.5

Source: Adapted from Barnett and Crandall (1986: 120-3)
Note: Costs are based on 90% utilisation of capacity
Administrative costs are not included
* New Integrated Mill
** Efficient Integrated Mill

[48] See Auty (1991: 20).
[49] See Hogan (2001: 37-61).
[50] See D'Costa (1994: 69-70, 1999: 87); Park (2003: 55); Auty (1991: 24). It is interesting to note here that most authors, including D'Costa (1994, 1999) and Park (2003: 68-9), argue that POSCO was, unlike state-owned companies in other developing countries, run as a private firm, at the same time that they comment on its provision of steel products at subsidised prices to downstream industries. Not recognising the contradiction in their claim, they find in this allegedly specific aspect of POSCO the source of its success vis-à-vis similar ventures in the developing world.

Table 3.3

Cost of producing cold-rolled coil in an efficient integrated steel firm

US$ per ton of finished product in 1985

	Japan	Korea	Brazil
Labour	63	25	26
Iron ore	44	48	24
Coal or coke	52	55	68
Other energy	15	24	27
Miscellaneous	112	118	129
Total operating costs	286	270	274

Source: Barnett and Crandall (1986: 46)
Note: Costs are based on 90% utilisation of capacity

As can be observed in tables 3.1 and 3.2 above, in 1985, when Pohang's plant was finally completed, POSCO's production costs excluding the consumption of fixed capital (i.e. depreciation costs) for hot-rolled coils were lower than the average Japanese producer and roughly the same as those of a state-of-the-art (100% CC) Japanese plant.[51] POSCO then compensated the lower productivity of its workforce, largely due to its lower experience and the less efficient technology used for casting processes, with lower wages (see tables 3.4 and 3.5 below). Japanese leading firms retained, at least for a short period of time, a marginal cost advantage in more technology-intensive cold-rolled coil production, though, as table 3.3 shows, this was no longer the case for less efficient producers.

POSCO's competition in global markets led to large excess capacity in the Japanese steel sector, further increasing production costs there as fixed costs tended to be spread less thinly. While POSCO attained 99% capacity utilisation during the mid-1980s, the largest Japanese steel companies averaged only 52%, partly as the consequence of POSCO's entrance into the market.[52] This gave the latter an overall cost competitiveness (i.e. including depreciation costs), even using less efficient technologies in the final stages of production. POSCO's low construction costs reinforced the trend.

[51] The differences between the two estimations are largely due to the methodologies used.
[52] See Park (1997: 14).

Table 3.4

Cold-rolled coils production - Efficiency indicators - 1985

	Korea	Japan	Japan #	Brazil	Brazil ##
US$/Man hour	2.85	11.70	11.70	2.90	4.65
Man hour/ton	8.20	5.35	3.45	9.00	9.00
Unit labour costs	23.37	62.60	40.37	26.10	41.89
Iron ore - US$/ton	25.00	24.25	24.25	12.50	20.06
Coal - US$/ton	59.00	59.50	59.50	60.00	60.00
Yield to finish products (%)	82.00	89.00	89.00	80.00	80.00
Iron ore/ton of steel	1.92	1.81	1.81	1.92	1.92
Iron ore - US$/ton of steel	48	44	44	24	39

Source: Barnett and Crandall (1986: 46)
Note: # = New Integrated Mills (100% CC); ## = at PPP exchange rate

Table 3.5

Continuous casting ratio (%)

	Korea	Japan	Brazil	USA
1975	19.7	31.1	5.7	9.1
1977	31.7	40.8	17.4	12.5
1980	32.4	59.5	33.4	20.3
1983	56.6	86.3	44.3	32.1
1985	63.3	91.1	43.7	44.4
1987	83.5	93.3	45.5	59.8
1989	94.1	93.5	53.9	64.8
1990	96.1	93.9	58.5	67.4
1991	96.4	94.4	56.0	75.7
1994	97.8	96.9	59.3	88.9
1995	98.2	95.8	71.6	91.0
1997	98.7	96.6	73.9	94.7
1998	98.6	96.9	80.4	95.5
1999	98.7	97.2	88.2	95.9
2000	98.5	97.3	90.2	96.4
2001	98.6	97.5	91.6	96.9
2002	98.5	97.8	92.6	97.2
2003	98.5	97.7	91.9	97.3
2004	98.3	97.8	92.7	97.2
2005	98.1	97.8	92.4	96.8

Source: International Iron and Steel Institute, *Steel Statistical Yearbook*, various issues.

These changes in the structure of the global steel industry resulted in differences in the accumulation capacities of industrial capitals invested in large-scale integrated mills in both countries. While the rate of profit for a representative, average steel mill in 1985 Japan was about 8.45%, POSCO's pre-tax rate of profit would have been around

20%, instead of the meagre 1.5%, had it not sold steel products in the domestic market at substantially subsidised prices. Conversely, the pre-tax rate of return on capital advanced for valorisation for a representative Japanese steel mill that year would have been around 26% had they worked at full capacity and thus spread fixed costs more thinly. On the other hand, POSCO's rate of profit (at export rather than domestic market prices) in 1985 would have been around -2.3% had it paid Japanese wages to its production workers, and it would have been around 9% if these workers were also as productive as the Japanese.[53]

In other words, the emergence of POSCO's competition eroded some of Japanese firms' internal and, crucially, external markets in low-end steel products, leaving them with excess capacity, as had happened a decade earlier to their US counterparts, and consequently further increasing their total average production costs and affecting their long-run international competitiveness. This not only limited gains from scale but also increased depreciation costs per unit of output.

Table 3.6

Cost of producing cold-rolled coil in 1991

US$ per ton of finished product

	Japan	Korea	Brazil
Labour	145	67	82
Raw materials	141	153	150
Other materials	189	156	186
Total operational cost	475	376	418

Source: Mendes de Paula (1993: 5), based on World Steel Dynamics (1992).
Note: Costs are based on 90% utilisation of capacity

However, as can be observed in table 3.6 above comparing production costs of cold-rolled coils, the above-mentioned slight advantage enjoyed by Japan's most efficient steel mills disappeared through the second half of the 1980s, when POSCO installed its third continuous caster at the Pohang works, attaining 100% CC, and built its state-of-the-art fully automated and computerised plant in southern coastal town of Gwangyang. The construction of latter had begun in 1981, before the Pohang plant was fully finished. The first stage of this second project was completed in 1987 and counted

[53] See Appendix 3.1 at the end of this chapter for the methodology and sources used to pursue the computation of the magnitude and determinants of the rate of profit of specific industrial capitals in the steel industry, and table A3.1.1 for a summary of measurement results.

with the most modern technology available at the moment, including CC facilities to mill 100% of crude steel production.[54] Since POSCO has, directly or indirectly, produced for world markets using a relatively low-priced and highly productive workforce, it has found profitable to implement ever since the most vanguard technologies. In effect, POSCO has, since its incorporation, pursued a policy of permanent technological upgrading, replacing worn out equipment with state-of-the-art, highly automated and computerised units. In this way, POSCO rapidly caught-up with world market standards set by its Japanese counterparts.[55] Unlike in Brazil, and in contrast to World Bank's opinion, the size of the domestic market has not lifted in post-1960s Korea any structural limitation to the introduction of vanguard technology in the steel industry. Nevertheless, despite being one of the largest and most efficient steelmaking companies in the world, POSCO has not been itself at the forefront of technological developments in the sector. On the contrary, the company has concentrated on the introduction of 'incremental' rather than 'radical' innovations'.[56]

Throughout the 1990s, POSCO began to out-compete even the most efficient Japanese producers in almost every sector of the market (see table 3.7 below for the case of cold-rolled coils). By then, labour productivity in Korea had reached Japanese levels while wages remained 60-70% lower.[57] Moreover, even after the 1990s revival of the US steel industry led by the mini-mill sector, POSCO could, unlike most of its Japanese counterparts, continue competing successfully in world markets for non-speciality steel.[58] The company's implicit rate of profit (i.e. return on capital advanced for valorisation) remained strong at around 25% in 1995 despite the emergence of a new global 'steel crisis'.

[54] See Hogan (2001: 25-35).
[55] See D'Costa (1994: 60, 1999: 70-2); Park (2003: 66).
[56] See Hogan (2001: 63-73); Park (2003: 56-64).
[57] See Park (1997: 14).
[58] See Park (2003: 53-4).

Table 3.7			
Cost of producing cold-rolled coil in 1996			
US$ per ton of finished product			
	Japan	Korea	Brazil
Labour	167	89	70
Raw materials	142	148	148
Other materials	201	156	160
Total operational cost	510	393	378

Source: Pagano (1999: 133), based on World Steel Dynamics (1996).
Note: Costs are based on 90% utilisation of capacity

As POSCO's global leadership strengthened, the Korean government initiated, in the middle of an overall programme of economic liberalisation, its divestment from the company. However, unlike the privatisation of the Brazilian steel industry (see below), the sale of POSCO was a slow-motion process. It began in the late 1980s and ended more than a decade later, in 2001, when the Korean government sold its remaining 20-25% of the company's equity. By the mid-2000s at least two thirds of the company's shares were owned by foreign investors.[59]

The privatisation of POSCO was not, however, simply driven by an ideological stance or budgetary necessity. Two other key factors drove and sustained state's divestment from the company. First, by the 1990s, POSCO had already attained an efficient scale of operation and had become one of the largest and lowest-cost steel producers in the world market. Secondly, by then downstream industries were no longer in need of heavily subsidised steel products as they had also improved their international competitiveness substantially. On both sides, there was no longer need for public ownership of the company. While the 1980s market liberalisation drive started the process, the economic crisis of 1997-98 accelerated it. The Korean state was then in the need of resources to fund its debt burden and cover its budget deficit.

[59] See D'Costa (1999: 101); Hogan (2001: 16).

Table 3.8

Production costs - Cold-rolled coils in 2003

	USA	Japan	Germany	Korea	Korea #	Brazil	Brazil #	China
Raw materials	117	113	122	124	124	105	123	145
Other materials	161	149	154	137	137	114	133	155
Total material costs	278	262	276	261	261	219	256	300
Employment ($/hour)	39	37.5	44	15	27	10	12	1.75
Man hour/ton	3.5	3.1	3.1	3.9	3.9	4.4	4.4	12.7
Labour costs	137	116	136	59	106	44	52	22
Total operating costs	**415**	**378**	**412**	**320**	**367**	**263**	**308**	**322**
Total financial costs	35	55	49	40	40	60	60	45
Total pre-tax costs	**452**	**432**	**460**	**360**	**407**	**325**	**380**	**368**

Source: Jha, et al. (2006: 24), based on information available in World Steel Dynamics (2003).
Note: # = at the PPP exchange rate (for Korea only labour costs, for Brazil also raw materials)

During its post-1998, privately-run era, POSCO's cost competitiveness in global markets remained strong though not as comfortable as before. In 2003 operational costs for the production of cold-rolled coils at PPP exchange rates were still lower than in the industrially advanced countries but higher than in China and Brazil where, nevertheless, steel products are, arguably, of lower quality than in established producers like Korea.[60] At market exchange rates, POSCO's operational costs were lower than the Chinese and Brazilian only thanks to the undervaluation of the Korean currency (see table 3.8). As domestic prices of steel began to slowly converge with international, export values, POSCO's profitability improved after its privatisation. Nevertheless, as late as 2003, it was still slightly below the average of the industrial sector.

In summary, the emergence and long-term growth of the Korean steel industry shows that the country's vigorous export-led growth process was neither simply a product of state design nor of its non-involvement in the allocation of resources. On the contrary, the emergence of Korean steel industry resulted from the development of the autonomously regulated process of global capitalist accumulation that realised (i.e. came about) through the actions of the Korean state mediating the allocation of resources. In effect, state's long-term efforts in the promotion of the sector would only begin to pay-off after the mid-1970s, when the development of the NIDL was creating the conditions for capital to take advantage of the large availability of relatively cheap and highly disciplined labour-power to produce profitably steel in Korea for world markets. Before then, state policies had been as ineffective in building an internationally

[60] It should be noted that the Chinese Yuan is also widely considered to have been strongly undervalued.

competitive steel industry as they were in Brazil and in many other developing countries. Contemporary automated and computerised technologies had by then simplified production processes significantly and thus made possible the use of less skilled workforces. Korea had originally access to a substantially cheaper and more disciplined labour-force than Brazil and most other 'developing' countries.[61] And, even if wage levels increased strongly after the late 1980s while Korea's steel industry moved into the higher end of the market, they remained lower, and the working-day longer, there than in most of its competitors (i.e. the US, European and Japanese steel industries). Moreover, the use of subcontracting was, as in Japan, more widespread than in its main competitors, thus reducing average labour costs further. Trade unions have also been less 'confrontational' than elsewhere; non-existent before 1987 and relatively weak thereafter.[62]

The Brazilian steel industry

Despite being frequently clustered together as two of the upcoming steel exporting NICs, the history and recent situation of the Brazilian steel industry differs sharply from that of its Korean counterpart. Unlike Korea, Brazil has a long history of large-scale integrated production of steel. Import-substituting efforts there began in the 1930s and expanded significantly during the 1940s under active state promotion. In 1941, after plans to promote a privately-run project with foreign capital participation failed, state-owned National Steel Company (CSN) was finally incorporated. Five years later, Brazil's (indeed Latin America's) first fully, coke based, integrated steel mill was finished in Volta Redonda (Rio de Janeiro state), close to both the country's major industrial areas and iron ore mines.[63]

[61] "At Pohang the company employs about 14,000 regular workers. In addition, there are also about 9,000 'contracted out' workers who are employed by companies which provide services to POSCO on a continuous basis. The average employee works about 2650 hours per year. In August 1985 the total employment cost per regular worker (the contracted out' workers are estimated at about 15% less was estimated at about $3.00 per hour, of which $2.64 was direct wage costs and the remaining $0.36 per hour is benefits. The workers are extremely industrious, with an average absenteeism rate of only 0.07% per day. New manual grade employees, after attending many technical courses in high school (often on steel-related subjects) and spending two years in the army, are very trainable." This was the opinion of Grieves and Saul (1986: chapter 2, 2-3), two engineers from British Steel Corporation who inspected POSCO's works in 1985.
[62] See D'Costa (1994: 68-9, 1999: 105-06).
[63] See Baer (1969: 68-79); Dahlman (1977: 34-9, 94-5); Fisher (1988: 166-68).

State intervention in the steel industry increased thereafter with the creation, and subsequent expansion, of a number of other companies and mills located in different industrial regions. Though controlled and partly funded by regional governments, all of them, as CSN before, received substantial and increasing amounts of federal resources channelled through the National Development Bank (BNDE), then charged with funding public sector investments.[64] Effectively, the BNDE financed around 45% of the steel industry's investments during the Targets Plan (1956-60), implemented for the promotion of the consumer-durable goods and heavy industries. During this period, steel production capacity increased by 50% and reached 1.8 million tons per year when the Plan ended, largely through the expansion of CSN and the creation of the São Paulo Steel Company (Cosipa) and the Steel Mills of Minas Gerais (Usiminas). The latter two companies were jointly owned by São Paulo and Minas Gerais states, respectively, as well as the Federal Treasury and the BNDE. Usiminas also incorporated the participation of Japan's Nippon Steel.[65]

As in Korea, the declared goal of CNS and the other state-owned steel companies was not only to achieve self-sufficiency in such a key product for industrial development and national defence as steel, but also to support the growth of downstream industries, like machinery, motor-vehicles, shipbuilding, construction and railways; all of them key sectors in the ISI programme.[66] The industry's strategic importance and its sheer size made it the largest recipient of state financial support. During the second half of the 1950s and first of the 1960s, it received around 70% of total lending carried out by the BNDE which financed approximately 70-75% of its investments, including funds used for the expansion of Usiminas and Cosipa.[67] Nevertheless, despite the rapid expansion of productive facilities, during 1963-65, steel production growth came to a halt as the Brazilian economy entered its deepest and longest recession since the end of WWII when the mass of extraordinary social wealth in the form of land rent and, incipiently, foreign credits available to support capital accumulation stagnated. Flat steel production, which was under complete control of state companies, was particularly affected. Flat steel is largely demanded by the white-goods, automobile and shipbuilding industries, all suffering from decreasing state support and weakening domestic demand for their output. By 1966, however, the local

[64] See Amarante Andrade and Silva Cunha (2003: 5).
[65] See Baer (1969: 79-82); Dalman (1978: 40-9); D'Costa (1999b: 5).
[66] See Baer (1969: 83); Fisher (1988: 226); Amann et al. (2004: 9).
[67] See Amarante Andrade and Silva Cunha (2003: 5); Amann et al (2004: 10).

demand for steel began to recover and, thus, to increase rapidly the utilisation of installed capacity. Two years later, the Consultative Council for the Steel Industry (CONSIDER) was formed to plan and coordinate the build-up of extra productive capacity. The Council included members of different ministries and representatives of the private sector.

During the 1970s, the steel industry enjoyed substantial growth, as resources to fund state investments grew larger. In 1971, as the 'economic miracle' gained momentum and the demand for steel enlarged dramatically, the National Steel Plan was finally launched following the guidelines set up by CONSIDER. The Plan aimed at increasing productive capacities from 8 million tons per year in 1970 to 20 million in 1980. For that purpose, it projected the creation of a holding company to embrace all state-owned steel firms and to rationalise their productive activities and investments projects. It also projected the creation of the National Steel Fund to finance the sector's expansion, though this never fully materialised. The Plan also reaffirmed the division of labour between state and private sector firms by stipulating that flat and long steel productions would largely remain under their respective control. Finally, the Plan projected that 20% of local capacities would be used to produce steel for external markets.[68] In 1974, as the land rent available for appropriation and credit inflows enlarged strongly in the aftermath of the first 'oil shock', the steel sector received further substantial state support under the auspices of the Second National Development Plan (NDP II) for the 1975-79 period. This was aimed at promoting the further substitution of industrial inputs and capital goods imports. In 1975, all state-owned steel firms finally came under the control of the holding company Brazilian Steel (Sidebras).[69] Massive investments in productive facilities were thereafter undertaken by both state-owned and private sector firms. A large part of these were financed through the BNDE and other state-controlled financial institution.[70] In the state sector, the 1970s saw not only the further expansion of CSN, Usiminas and Cosipa, but also the establishment of two new large mills, Tubarão Steel Company (CST) and Açominas. CST was a joint venture development of the Brazilian state, Japan's Kawasaki Steel and Italy's Finsider. It was constructed, following the Japanese/Korean model, in the coastal city of Vitoria (Espiritu Santo) with the main purpose of exporting semi-finished

[68] See Dahlman (1978: 95-8); Amarante Andrade and Silva Cunha (2003: 5-6).
[69] See Dahlman (1978: 98-103).
[70] See Amarante Andrade and Silva Cunha (2003: 9).

slabs.[71] Açominas was meant to produce a mix output included finished and semi-finished products for both domestic and export markets. Moreover, some small privately-owned firms manufacturing specialty products were also absorbed by Sidebras during this period. At the same time, several wholly privately-owned firms also emerged or expanded their operations. Unlike state-owned steel enterprises, most private firms operated electric arc furnaces; all of them specialised in long products, using low-cost raw steel produced by state-owned firms as their main input.[72]

Though internationally small before the 1970s, the expansion of the industry under the auspices and massive funding received during the NDP II, allowed Brazilian state-owned steel mills to attain the lower end of the 'theoretical' minimum efficient scale of production. In the mid-1980s, after investments done under the NDP II had already matured and when exports peaked to reach 30% of total output, Brazilian large integrated mills had an average scale of 3.5 million tons of steel production capacity per year. Yet, Japanese and Korean plants, by then the most efficient producers, averaged almost three times that capacity.[73]

As can be observed in table 3.9 below, in 1985 average operational costs (i.e. excluding the consumption of fixed capital) for the production of steel in Brazil were slightly above those in Japan and Germany and lower than those in the USA, where they were then exporting. However, unlike their Korean counterparts, Brazilian producers' cost competitiveness was not based on low labour costs. At PPP exchange rates, these were substantially higher than those prevailing in Japan and Germany as lower wages did not, as in Korea, compensate for the lower level of labour productivity springing from the obsolete technology used (for international standards) and the overstaffing of state-owned firms.[74] These practices, however, were necessary to enlarge the markets for equipment manufacturers, in particular, and industrial capital, in general, and thus allow capital to appropriate land rent. Indeed, partly because of their lower scale of production and partly due to their procurement strategies, Brazilian steel mills were well behind the technological frontier and, crucially, attained a much lower degree of automation than their Japanese and Korean counterparts.[75] Brazilian steel producers' international competitiveness during the 1980s was thus largely based on the

[71] See D'Costa (1999b: 6-8).
[72] See Dalmhan (1978); Amann et al. (2004: 10).
[73] See Fisher (1988: 300); D'Costa (1999a: 89, 97). According to Cockerill (1974: 76-85) 8 million tons of annual capacity was the minimum efficient scale.
[74] See D'Costa (1999a: 105, 1999b: 8-9).
[75] See Fisher (1988: 214-23); BNDES (1987: 18); Paula (1993: 38-40).

low local cost of iron ore and electricity and, during 1984-87, the strong undervaluation of the exchange rate. Brazil, unlike Korea and Japan, is a major producer of low-cost, high quality iron ore, a key input for integrated mill production, and of low-cost hydroelectricity. During this period, both were supplied by state-owned companies at subsidised prices (i.e. below international levels).

Table 3.9

Cost structure in the steel industry

US$ per ton of finished product in June 1985

	Brazil	Germany	Japan	USA	Brazil #
Labour costs	76	81	68	132	123
Coal	67	73	60	59	67
Iron ore	17	50	52	85	28
Energy	13	34	43	76	21
Ferro alloy & fluxes	17	21	22	22	28
Miscellaneous	37	50	66	88	60
Operational costs	**227**	**309**	**311**	**462**	**326**
Depreciation	44	18	31	30	44
Subtotal	271	327	342	492	439
Financial expenses	160	12	28	15	160
Total	431	339	370	507	599

Source: Fisher (1988: 203).
Note: # = at PPP exchange rate.

Nevertheless, despite these relatively low operational costs, the rate of profit of Brazilian state-owned steel companies was extremely low, even negative at times. As Korea's POSCO, these firms were selling their output at subsidised prices to benefit steel consuming industries, like cars, white-goods, ships manufacturers and non-integrated steel producers.[76] However, unlike POSCO, they were also purchasing their equipment and contracting construction services from local companies at substantially inflated prices (for world market norms).[77] During the late 1960s and, crucially, the 1970s, the local supply of highly-priced industrial equipment increased substantially under the auspices of different programmes implemented to deepen the ISI process, including the market reserve granted to local manufacturers.[78] Thus, while average construction costs per 1,000 tons of annual production capacity in POSCO's Pohang

[76] See Fisher (1988: 189-90, 226-7); BNDES (1987: 22-3); D'Costa (1999: 87).
[77] See Paula (1993: 46). This strategy contrasted markedly with the one followed by Korean state's POSCO, which always sought to purchase its fixed capital at the lowest prices possible regardless of its national origin.
[78] See Amann (1999: 338-39).

plant were US$ 500, they totalled US$ 1,000 in Açominas and US$ 3,000 CST, both finished around 1985 as the former.[79] Brazil's high depreciation and financial expenses in the tables presented above partly express these inflated costs of construction and production equipment. The combination of high fixed capital costs, overstaffing and low prices for their output affected the rates of profit of these state-owned integrated mills. In 1985, they were -3.5% for Açominas, producing a mixed output mainly for the domestic market, and -0.83% for CST producing slabs mainly for external consumers. Their annual rates of profit in the mid-1980s would have been around 16.3% and 6.8%, respectively, were these companies paying international prices for their fixed capital investments (i.e. equipment and facilities).[80]

As in Korea, all Brazilian state-owned steel companies were privatised during the 1990s. In Brazil, however, this process was swift and took place at the very beginning of the decade, when the process of 'state-led' ISI was undergoing its deepest crisis ever. Without enough resources (i.e. land rent and foreign credits) to sustain the operation of state firms as supporters of the process of valorisation of private industrial capital, the former began to be sold or were closed down altogether. Between 1991 and 1993, all eight state-owned steel companies, then producing around 85% of Brazilian steel output, were sold for a total US$ 8.2 billion (including US$ 2.6 billion in the debt transfer).[81]

The privatisation process resulted in the partial consolidation of the industry and, consequently, in the rationalisation of employment practices and the upgrading of most productive facilities.[82] This alleged efficiency-seeking process, however, did not result in the transformation of the underlying characteristics of the Brazilian steel industry. Labour productivity in the sector, though strongly increased, remained well below world market norms, as most plants continued producing in the lower end of the 'theoretical' minimum efficient scale and substantially below POSCO's. Technological and organisational standards, though improved, still lagged behind the world's vanguard in the industry.[83] Hence, although through the mid-1990s the Brazilian steel industry became a global low-cost producer of low technology-intensive hot-rolled steel, its

[79] See D'Costa (1999: 99).
[80] See Appendix 3.1, especially table A3.1.1.
[81] See Silva Cunha, et al. (2001: 3).
[82] See Amann Nixson (1999: 76-8); Amarante Andrade and Silva Cunha (2003: 16).
[83] See McKinsey (1998); Amann Nixson (1999: 69-71). See also table 3.5 above.

international competitiveness was based on the low cost of local iron ore, electricity and now labour-power.[84]

Despite these gains in international competitiveness, during the 1990s, in contrast to the experience of the previous decade, the Brazilian steel industry became again increasingly oriented towards the domestic markets. After the early years of the decade, exports fell below 30% of total output, and became concentrated in semi-finished products, like slabs produced by CST and Açominas, and/or directed to the protected regional market (i.e. Mercosur countries).[85] The strong overvaluation of the currency prevailing during most of this period, notably during 1994-98, together with the high cost of local transport and port facilities,[86] strongly hurt the profitability of exports of goods other than raw or semi-processed materials (i.e. land rent bearers).[87] In the case of the steel industry, exports of high value-added products became possible provided that tax credits and BNDES subsidised loans, through the Bank's 'modernisation fund' for equipment acquisitions, compensated for the negative impact of the exchange rate overvaluation on local costs other than raw materials.[88] The overvaluation of the exchange rate, nevertheless, reduced the domestic price of iron ore and imported equipment, largely possible after the 1990-94 trade opening reforms, and thus allowed steel producers to appropriate land rent when selling their output in the domestic market.[89]

The sector's profitability improved significantly as firms became privately-owned. To begin with, employment in the steel industry was reduced by as much as 37.6% during the 1989-1994 process of privatisation and subsequent adjustment, and a further 35% by 2000, when it attained its lowest point. Secondly, state-owned steel companies were purchased at prices far below the real value of the assets involved.[90] In

[84] See McKinsey (1998: 28); Amann and Nixson (1999: 74-9).
[85] See IBS (1995, 2000).
[86] See Paula (1993: 52-3); McKinsey (1998: 13, 27).
[87] According to McKinsey (1998: 34), in 1995, the return on new capacities for export markets would yield a -2.7% for all products and only 2% of hot-rolled coils. These would increase to 4.5% and 8%, respectively, with a 20% devaluation of the Brazilian currency. Profit rates for hot-rolled coils export would increase to 3.5% and 9%, respectively if only infrastructure was improved and that occurred together with 20% devaluation. In 1995, the exchange rate was 94% overvalued.
[88] See Amann and Nixson (1999: 81); Amarante Andrade and Silva Cunha (2003: 14-6) on BNDES program for the steel industry during the 1990s.
[89] McKinsey (1998: 29) estimates returns on capital for domestic markets sales were 8.1%, 18% and 41% at 'replacement costs', 'current market value' and 'privatisation values', respectively. The first measure of profitability is comparable to the one used in the present chapter. The profitability of sales in domestic markets compares to -2.7%, -1.5% and 10.2%, respectively, for exports.
[90] "The Brazilian government accepted its own 'junk bonds' in return for shares without the market discount that was prevalent at that moment. The only exception was the case of external debts, for which

1995, the return on capital invested (i.e. the rate of profit) for Brazilian steel producers was 3.6%, 10.2% and 23.4% when calculated at 'replacement cost', 'current market value' and 'privatisation values', respectively.[91]

After the 1999-2002 global and local economies slowdown, the Brazilian steel industry went through another process of consolidation, which included the entrance of major global leaders like ArcelorMittal buying CST and other smaller plants and the fusion of domestically-owned firms (e.g. the consolidation of the Gerdau Group owning, among others, Açominas). This process resulted in significant investments in technological upgrading and the expansion of production capacities, both heavily supported by BNDES subsidised loans.[92] Nevertheless, despite these developments, no plant in Brazil managed to achieve the scale of operations of the two owned by POSCO, namely, 9.5 million tons of annual production capacity. Furthermore, the post-2004 increasing exchange rate overvaluation (necessary to allow industrial capital to appropriate a portion of the expanding land rent, including that materialised in the price of iron ore and hydroelectricity) significantly hurt exports growth, notably of high value-added products, maintaining the structural limitations to the expansion of the market and therefore to the introduction of vanguard technology.

In summary, before they were privatised in the early 1990s, state-owned steel companies, controlling almost all integrated facilities and the manufacture of flat products, played a central role in the promotion of the process of import-substituting industrialisation (i.e. in the accumulation of capital through the appropriation of land rent). They did so by supplying steel products to their clients at subsidised values, by purchasing equipment and machinery from domestic producers at inflated prices (notably after the early 1970s) and by employing more personnel than would have been considered necessary on strictly commercial grounds. The resources used to provide these subsidies originated not only in the profits of these companies as it was the case in Korea. A large part of these resources were composed of the agrarian and mining land rents, and, after 1968, of foreign capital borrowed by the state. Rents were channelled through the contributions and subsidised loans provided by the public sector treasury and developmental banks, respectively, and the importation of machinery with an

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were applied a 25% discount." Amann et al (2004: 15). 'According to Brumer (1994: 294), the average of the market discount at the time of privatisation of steel companies was: Usiminas (50%), CST (50%), Acesita (55%), CSN (45%), Cosipa (35%) and Açominas (60%). Taking into the consideration these six privatisations, the average discount reached 49%.' Annan et al. (2004: 31).

[91] See McKinsey (1998: 29).

[92] See Amarante Andrade and Silva Cunha (2003: 17-20).

overvalued currency. Rents were also channelled through the supply to steel companies of iron ore at below international prices. Foreign interest-bearing capital was channelled through the borrowing activities of steel firms either to fund investments, including equipment importation, or current expenditures.

After state-owned steel companies were privatised in the early 1990s, these firms stopped channelling a portion of the agrarian land rent and external credits to their suppliers and clients. Nevertheless, when in effect, the overvaluation of the exchange rate, acting as an export tax, reduced the domestic price of steel products, thus channelling rent materialised in the price of iron ore and hydroelectricity from mining landowners, the former also under private control after 1998, to steel producers and consumers (i.e. industrial capital, notably the automobile and white-goods sectors). Moreover, capitals invested in integrated steel mills began themselves, as any other private capital in Brazil, to appropriate a portion of the land rent and its complementary sources of extraordinary social wealth (e.g. through the purchase of imported equipment and the repatriation of profits with an overvalued exchange rate).

3.1.2) Transformations in the global automobile industry

The automobile is the world's largest serial, discrete-production mechanical industry. Hence, it is not surprising that, since the inception the industry at the end of the nineteenth century, it has been at the forefront of the development and introduction of technological and organisational advances. During the first couples of decades, the production of automobiles was essentially a craft-like activity. Production volumes were low and most workers involved in the manufacturing process were skilled craftsmen performing relatively complex tasks using general-purpose machine-tools. Only in the second decade of the twentieth century were mass production and organisational techniques introduced in the USA, first by Ford Motor Company and, later on, by its competitors.[93]

Broadly, mass production methods emerged from the combination of organisational techniques developed by Frederick Winslow Taylor (the so-called 'scientific management' approach) and the moving assembly line introduced by Ford Motor Company around 1913. As most path-breaking technological changes, mass

[93] See Coriat (1982); Hounshell (1991).

production techniques transformed the set of skills required from the industrial workforce. The 'scientific management' approach was centred in the exhaustive examination of productive tasks involved in a given manufacturing process and their decomposition into a multiplicity of simple movements, which could be then easily learnt and performed by semiskilled or unskilled manual workers specialised in one single (relatively simple) operation. The motorised and thus moving assembly line, in turn, took away from the manual worker the control over the pace of the labour process itself. Nevertheless, despite this simplification of manual industrial labour processes and the possibility for management (i.e. capital) to accelerate the rhythm of work, machine-tools continued in the hand of manual workers and the success of each operation remained dependent on their abilities and dexterousness (i.e. the unity hand/eye/brain). Although in the machine shop, where parts and components are machined before being assembled, some operations were already being mechanised through the use of general-purpose, and incipiently special-purpose, machine-tools and electromechanical motor devices, even in these cases, each machine remained being tendered by a specialised worker.[94]

Mass production techniques combining a moving assembly line with simplified operations executed by largely semiskilled manual workers were first introduced in the US automobile industry where craft workers were relatively less abundant than in Europe, where the industry had been born. Nevertheless, they were afterwards slowly transplanted to Europe, either through direct investment by US automobile companies or, due to the ensuing competitive pressure, by local firms. [95]

Despite being subjected to a myriad of modifications and incremental improvements, production and organisational methods remained relatively unchanged until the 1950s. By then, the first *fixed automation* systems of production were introduced for repetitive, high-volume tasks in the production of parts, like engines, power trains and axles. These systems emerged from the combination of special-purpose machine-tools and transfer machines. They were thereafter known as transfer lines.[96] A decade later, NC machine-tools made an entrance in the machine shop to be used for low-volume prototype production, die-making and testing operations, and for

[94] See Coriat (1982: 35-43); Hoffman and Kaplinsky (1989: 73-5); Hounshell (1991: 249: 61).
[95] See Coriat (1982: 27-31, 40-7); Silver (2003: 50-1).
[96] See Coriat (1992: 41-4); Hounshell (2000: 118-20).

the calibration of machine-tools for high-volume, serial mechanical production. Assembly operations, on the contrary, remained largely manual.[97]

The use of NC machine-tools and *fixed automation* systems resulted in important transformations in the optimum set and structure of skills required from the industry's workforce, and consequently in its geographical location. Combined, these technologies greatly reduced the requirements of skilled, experienced manual workers, notably in the machine shop. In effect, once machining operations were automated, a less skilled but cheaper worker could be brought into the shop-floor and even tender several 'stations'.[98] Moreover, the use of NC machine-tools also reduced the need for highly skilled workers in such key areas of the production process as die- making. These tasks too could then also be performed by a less skilled but cheaper worker.

As was the case in the steel industry, these technological changes manifested themselves in the reshaping of global automobile production. The rapid and widespread introduction of *fixed automation* systems and NC machine-tools by Japanese motor-vehicle manufacturers since as early as the late 1950s allowed them to enjoy substantial increases in the levels of productivity of the labour-force they employed.[99] The characteristics of Japanese labour, crucially its discipline and lower levels of craft skills, and the 'dual' structure of Japan's labour market (with its relatively large supply of unskilled, low-paid manual workers) created material conditions which were particularly favourable for the introduction of the new technologies.[100] Effectively, during the 1960s and 1970s, *fixed automation* systems and, crucially, NC machine-tools were introduced in the Japanese automobile industry faster than in that of any other of the major producing country. The greatly increased productivity of labour in Japan's auto industry, though on average lower than in the USA until the late-1970s-to-early-

[97] See Coriat (1992: 73); Watanabe (1987: 17).
[98] These transformations, for instance, manifested themselves in the appearance of the so-called multitask workers, one of the alleged productivity-enhancing forces introduced by so-called Toyotist production system. See Hoffman and Kaplinsky (1989: 126-7).
[99] "Toyota and Nissan introduced their first transfer machines in 1956 and Mazda followed suit the following year. […]. The high rate of investment was primarily aimed at labour saving by means of large-scale 'fixed' automation technology, such as transfer machines." Watanabe (1987: 45). "Partly as a result of such support received from the assemblers, the machining process at major component manufacturers' plants was semi-automated in the second half of the 1950s. General-purpose machines were used for single purposes and were converted into semi-automatic machines by means of simple devises. The operators' work was simplified so that young school leavers could be employed for the expansion of output. […] After 1960, the firms started building large highly automated plants." Watanabe (1987: 47).
[100] "NC also guaranteed a higher precision of work and helped solve the problem of shortage of skilled workers [in Japan], for example in die-making." Watanabe (1987: 54). See also Coriat (1985: 71).

1980s, could then be compensated for with its much lower cost.[101] On these bases, Japanese manufacturers rapidly caught up and even surpassed their US and European counterparts, notably in the lower-end of the market, namely, the production of compact passenger cars.[102]

These technological bases, however, would not remain unchanged. In the second half of the 1970s, the automobile industry, as most serial production mechanical industries, speeded up the process of equipment automation through the computerisation of the calibration of machines and transfer lines, the use of CNC machine-tools in the machining process, and, later on, the introduction of robots in the assembly line.[103] Industrial robots have since been used for relatively complex processes, such as spot and arch welding (for chassis and parts assembly) and painting, and for relatively simple tasks, like material handling and machine feeding. Robots have been also increasingly used in the assembly of electronic components.[104] The final fitting of components and parts, on the contrary, has remained largely a manual (i.e. non-automated) process.[105] NC machine-tools, originally used in low-volume productions, die making/changing, and for product testing, have been, increasingly used in machining and transfer operations for high-volume production of auto-parts.[106] Such developments have greatly increased the 'flexibility' of industrial facilities, as they reduced significantly the costs associated with setting up the machinery for serial mechanical production. They have also resulted in the further simplification of the job of machine-tool operation and control.[107]

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[101] See table A3.3.1 at the end of this chapter for the evolution of labour productivity and costs in several auto producer countries.

[102] See Watanabe (1987); Hoffman and Kaplinsky (1989: 140-1) on how Japanese automobile firms implemented *fixed automation* systems and NC machines more rapidly and widely than their US and European competitors. On the contrary, the much vaunted reduction of auto assemblers' stock of inventories and production times, related to the introduction of the so-called Just-in-Time organisational techniques, the other leg of the Toyotist system of production, only occurred by increasing their suppliers' stock of inventories and productive activities. Japanese auto assemblers were originally far less vertically integrated than their US and European counterparts. Indeed, one distinctive characteristic of the Japanese motor-vehicle industry is the proliferation of a myriad of small capitals (specialised in the production of parts and components) related through networks with a pyramidal structure to final assemblers. The relatively high wages and profit rates prevailing in the Japanese final assembly sector have historically had as a counterpart much lower levels of both in the parts and components sector. See Williams, et al. (1994: 55-63).

[103] See Watanabe (1987: 50); Allen (1987: 84-96); Hoffman and Kaplisnky (1989: 139-42).

[104] See Seering (1987: 28-9); Watanabe (1987: 58).

[105] See Balconi (2002: 373-4); European Robotics Forum (2010: 5).

[106] See Balconi (2002: 370-3). CNC systems also helped reduce inventory stocks as they allowed batch productions (Watanabe 1987: 15-6).

[107] See Coriat (1992: 179-97); Balconi (2002)

As had been the case with *fixed automation*, Japanese auto companies were also the most eager users of new *flexible automation* systems.[108] The reasons behind this commercial strategy remained unchanged. Indeed, during the 1980s, when Japanese firms became global leaders thanks to their now absolutely higher levels of labour productivity, the difference in the use of automated technologies between them and their US and European competitors was not only quantitative but also qualitative. While auto firms in Japan largely focused in the introduction of robots performing the relatively skill-intensive tasks of welding and painting, for which there was still insufficient supply of qualified workers, companies in the USA and Europe also introduced them for simpler tasks such as material handling and parts assembly/fitting.[109]

In summary, the increasingly automated machinery systems used in the automobile industry not only allowed labour productivity gains. They have also tended to simplify the work of manual labourers in and outside the assembly line and, consequently, to make possible that these tasks were performed by less skilled and thus cheaper workers. The strongly differentiated structure of skills and payment conditions prevailing in the Japanese labour market were originally more suitable for the profitable introduction of automated technologies than that of its US and European counterparts. Unlike in Japan, skills and remunerations in the latter two were relatively even across the different members of the collective labourer of large-scale industry. In other words, given the characteristics and price of the Japanese industrial workforce, productivity increases and cost reductions related to the introduction of automated technologies were much larger in Japan then elsewhere. The use of relatively more expensive automated technologies was thus commercially more convenient there than in the USA and Europe. Indeed, it would take more than two decades of neoliberal policies in the latter regions, and the geographical relocation of some parts of the production processes within and outside them, to reproduce in their spaces of accumulation the structure of skills and remunerations corresponding to the 'new' technological conditions.[110] As investments by US companies in Europe led the way for the introduction of

[108] See Tani (1989); MacDuffie and Pil (1996).
[109] See Watanabe (1986: 245-46). Industry surveys conducted by Watanabe (1987: 53-60) and Allen (1987: 84-90) show that while Japanese firms introduced robots and CNC machine-tools to replace skilled labour, their US counterparts sought to replace unskilled labour.
[110] See Coriat (1992: 210-32); Iñigo Carrera (2008: 72-6).

technological changes in the 1920s, Japanese transplants in the US and Europe led it in the 1980s.[111]

These technological transformations not only changed the types of skills required from, and thus the optimal composition of, the industry's workforce, resulting in its geographical restructuring. They also affected the structure of inter-firm relations and thus of the industry itself. For technical and commercial reasons, the process of automation has not spread evenly across the different parts of the industry's production process. As a result of the uneven introduction of automated and robotised systems of machinery, the scales of production and the skill-intensity of the various sub-sectors of the automotive industry have evolved differently, notably since the 'microelectronics revolution'. In general terms, automation proceeded faster in auto-parts manufacturing than in final assembly stages. This has implied that optimal scales of production in the former sub-sector became larger than in the latter. In effect, while minimum efficient scales for engine casting and power train machining have been around 750,000-1,000,000 units per year, they have been only one quarter of these amounts in final assembly.[112] In addition, as the production of parts and components became increasingly automated, they tended to require less skilled and thus cheaper production workers. In the USA, for instance, average wages in the auto-parts sector, which had been almost equal to those paid to assembly workers during 1958-1978, fell 23% in real terms between the late 1970s and 2000 while those paid in the assembly sector remained constant.[113]

As a result of these transformations, since the second half of the 1980s, the automobile industry has been undergoing at the same time a process of vertical specialisation, on the part of assemblers, and of vertical integration, on the side of parts and components producers. The so-called first tier suppliers of auto-parts and components have become increasingly involved in the production of sub-assembled systems and modules, and, consequently, in the associated skill-intensive processes of research and development previously undertaken by assemblers.[114] The large minimum efficient scale necessary for the development and manufacturing of these increasingly complex products implies that they have tended to become common to different models,

[111] See Hoffman and Kaplinsky (1989: 89-96); Sturgeon and Florida (2004: 57-8); Lansbury et al. (2007: 12).
[112] See Lucke (1987: 5-8); Husan (1997). Also see Hkust (2005: 8) citing Nolan (2001).
[113] Sturgeon and Florida (2004: 53-5).
[114] Sturgeon and Florida (2004: 69-74); Lansbury (2007: 16-7).

platforms and, crucially, even brands of motor-vehicles. In some cases, these firms were created out of final assemblers from which they separated, such as Delphi and Visteon which spun-off from General Motors and Ford, respectively. In other cases, independent firms just grew larger an integrated backwards (e.g. Bosch, Magna and Continental). Irrespective of their commercial origins, the largest of these companies, have become suppliers with global presence.[115] At the same time, automobile producers, on the contrary, have been increasingly transformed from integral manufactures to proper final assemblers, following the Japanese model developed by Toyota in the late 1950s. The resulting differences in terms of skill requirement in the distinct parts of the production of motor-vehicles have also created the incentive for US and European firms to relocate some of these activities to low-wage countries (e.g. Mexico and Eastern Europe, respectively) or, in some cases, to non-unionised regions within their countries (e.g. the US Midwest), thus reproducing within their regional spaces of accumulation the 'dual' labour market conditions originally existing in Japan. Though a highly differentiated wage structure was characteristic of the Japanese auto industry since its origins, firms there have also ended up relocating the production of some parts to lower wage countries in Asia.[116]

The introduction of *fixed automation* systems (i.e. based on the combination of single-purpose machine-tools and electro-mechanical and hydraulic motor devices) and of NC machine-tools explains, together with the availability of relatively cheap and highly disciplined labour-power, the emergence, through the 1960s and 1970s, of Japanese auto firms as global producers. The development of industrial robots and CNC machine-tools, and the consequent emergence of *flexible automation* systems, accounts for their transformation, through the 1980s, in global-market leaders. It also explains, together with the productive characteristics and low price of the Korean labour-force, the transformation, in a period as short as ten years, of Korean assemblers into major players in world markets for low-end automobiles. It is not a coincidence that Korean firms were the fastest among developing country automobile manufacturers in introducing automated, notably robotised, technologies.[117] These matched their 'factor endowments'.

[115] Sturgeon and Florida (2004: 69-74).
[116] Silver (2003: 67-8, 71-2); Sturgeon and Florida (2004: 60-4); Lansbury et al. (2007: 20-2).
[117] See MacDuffie and Pil (1996: 6).

The Brazilian automotive industry, on the contrary, was much slower in introducing NC machines-tools, let alone CNC equipment and robots, despite having grown much faster and invested more heavily than its Korean counterparts in the pre-mid-1980s period. Its international competitiveness has consequently been weaker and its growth more irregular. As it was mentioned above, the accumulation of capital through the appropriation of land rent have lifted a strong barrier to the development and application of technology in Brazil's industrial sector. First, it has circumscribed the production of industrial goods to the domestic market, thus limiting the scale of production and therefore the introduction of vanguard technologies. Secondly, it has allowed, and created the incentive for, MNC assemblers established there to valorise their capitals normally despite using obsolete (for world market norms) and sometimes already depreciated machinery and without competing (with their parent plants) in global markets. Finally, it has also limited the availability of advanced equipment in the domestic markets as part of the capital goods industry has been protected to foster import-substitution. Interestingly, Japanese automobile firms producing in Brazil for the domestic market were, by the mid-1980s, the slowest to introduce the most modern technologies, such as NC and CNC machine tools. [118]

The Korean automobile industry

The Korean automobile industry has its origins in the early 1960s, when the government passed the Automotive Protection Law as part of the implementation of the First Five-year Economic Development Plan (1962-66). In a classical effort to promote import-substitution, the Korean state banned the importation of finished cars, granted tax exemptions to local assemblers, and eliminated import tariffs on parts and components. Under these favourable conditions, modern assembly of semi knock-down (SKD) kits began in 1962 by Saenara Motors in partnership with Japan's Nissan. In an attempt to avoid 'excessive' fragmentation in the industry, this was the only project allowed by the government to assemble small-size motor-vehicles. The venture, however, collapsed after only one year as the Korean economy faced a balance-of-payments crisis and went into recession. In 1964, Shinjin Motors, in alliance with Mitsubishi and, afterwards, Toyota, was selected to enter the industry in replacement of

[118] See Tauile (1987: 160-172).

failed Saenara and became the only producer of the 'mass-consumed' passenger cars segment. Nevertheless, in a reversal of policy, in 1967 Hyundai and Asia Motors were also allowed to enter the industry in partnership with Ford and Renault/Fiat, respectively. In a tie-up with Mazda, Kia followed in 1971.[119]

Despite the state support received by the sector, not *qualitatively* different from the type then granted to other 'developing' country motor-vehicle industries, like the Brazilian, the production of automobiles in Korea remained not only anaemic throughout the 1960s and early 1970s but also mainly confined to the assembly of SKD kits.[120] Local content remained low (38% in 1970 and 50% in 1972), despite the different plans and promotional laws implemented to increase it. Already in the early 1970s, less than 10,000 passenger cars were assembled per year in Korea.[121] As noted above, primary sector surpluses and foreign aid resources were not large enough to sustain the production of complex durable-consumer goods, such as automobiles, for domestic consumers, as it was currently the case in Brazil and other South American countries.[122] Moreover, contemporary technological conditions and the associated structure of the global auto industry were not yet allowing Korean firms to take advantage of the local availability of cheap and highly disciplined semiskilled labour-power to produce motor-vehicles of acceptable quality at internationally competitive prices. Unsurprisingly, despite the above mentioned tie-ups, auto MNCs did not invest heavily in Korean, crucially for proper manufacturing activities, as they were doing in Brazil and other developing countries.

Continuing with the ISI efforts of the previous decade, in the early 1970s, the Korean automotive industry received a new stimulus when it was included in the heavy and chemical industries drive. Under the 1974 Automobile Industry Promotion Plan, the government granted further market protection and subsidised credit apart from cheap steel products from state-owned POSCO. The Plan was meant to move the local auto industry from assembly to manufacturing and from exclusive focus on domestic sales to exports. Under this umbrella and the requirements of the Plan, domestic assemblers, Hyundai, General Motors Korea (previously Shinjin and later on Daewoo Motors) and Kia, undertook substantial investments in modern plants, through the implementation of new alliances or joint ventures with Japanese or US firms and the licensing of the

[119] See Lew (1992: 126-9); Lansbury et al. (2007: 32).
[120] See Green (1992: 413-4); Ravenhill (2001: 5-6).
[121] See Lansbury et al. (2007: 34).
[122] On the South American motor-vehicle industry, see Jenkins (1987).

necessary technology (i.e. product and process know-how) to produce 'national' 'people's cars'.[123] To deal with the lack of an adequate domestic supply of highly skilled labour, like engineers and project managers, local firms even contracted foreign workers, most of them from Europe. Local production of automobiles proper began finally in Korea.[124]

Nevertheless, unlike steel and other heavy industrial goods, motor-vehicles production grew only moderately during the 1970s. It climbed from the insignificant 28,819 units (most of them commercial vehicles) built in 1970 to almost 205,000 in 1979, before falling back to 123,000 during the 1980 recession. The largest share of local output was, as in Brazil, still destined to the protected domestic markets.[125] In contrast to the already largely automated continuous flow (i.e. process) industries, automobile manufacturing still required an important amount of tacit knowledge on the part of manual workers. Despite heavy investments in facilities, labour productivity remained low by international standards and local producers unable to compete in global markets. In effect, between 1975 and 1981, it took, on average, 8 times as much labour-time in auto-parts production and assembly work in Korea as in Japan to manufacture a motor-vehicle.[126] With a productivity gap of that magnitude, unit labour costs in Korea were still higher than in Japan, even if wages were substantially lower.[127] Furthermore, most models 'developed' and produced domestically were low-quality copies of old US, Japanese and European cars, thus making external sales even more difficult. Local content, though increasing, remained modest in comparison to the contemporary Brazilian experience, notably for key technologically complex parts and components.[128] Korea's automotive industry only survived behind strong market

[123] See Lew (1992: 170-95). According to Ravenhill (2001: 7), "Hyundai had already developed plans for a Korean car before the government announced its directive (raising the question of where the initiative for the 'people's car' actually originated)."
[124] See Green (1992: 414); Lansbury (2007: 57).
[125] See Lansbury et al. (2007: 34). According to Noble (2005: 10) exports were made of 'dated compacts of execrable quality dumped at below costs prices'.
[126] See Williams, et al. (1994: 61-3). This figure, computed by adding total hours of work in the parts and assembly sectors and dividing the sum by the number of motor-vehicles produced, underestimates the difference as the Korean automotive industry as a whole was then far less self-sufficient than the Japanese, needing to import a much greater portion of its inputs.
[127] See table A3.3.1 and A3.3.2 in the Appendix 3.3 at the end of this chapter for the evolution of labour productivity and costs in different national automotive industries.
[128] See Green (1992: 416); Lew (1992: 184-9).

protection and state support. Exports were meagre and only possible due to state subsidies.[129]

Through the mid-1980s, however, the Korean motor-vehicles industry would finally begin to take-off strongly. Contemporary transformations in the global process of capitalist development were generating the conditions for capital to produce in Korea this type of durable-consumer goods for world markets. Yet, the structural transformation of the Korean automotive industry would not be a smooth process. In effect, it was only after the early 1980s crisis, when local production and exports fell sharply, that the motor-vehicle industry would emerge as an internationally competitive player at the lower end of the global market of passenger cars. After several failed government-sponsored attempts, the market led, through a severe economic and profitability crisis, to the reorganisation and consolidation of the sector.[130] This market-provoked reorganisation realised through the intervention, once the crisis took major proportions, of the Korean state 'forcing' the centralisation of private capital and the 'rationalisation' of the industry. Still, despite government's strong intentions to retain only one auto producer under foreign control, two companies, Hyundai and Daewoo, were finally 'selected' to manufacture passenger cars.[131] A third, Kia, was 'selected' to produce commercial vehicles and trucks, its original focus, but soon applied to re-enter the passenger cars sector and was allowed to do so in 1984, once market conditions had already improved.[132] "Once again, the government appeared to be following rather than leading the private sector in the automotive industry."[133]

As the global economy recovered recover after 1983, local and overseas demand for automobiles improved. Motor-vehicles production in Korea thus began to expand again. Partly due to the previous consolidation of the sector and partly because of the increased demand for their output, Korean firms and plants then managed to get closer to the scale of production necessary to efficiently introduce vanguard technology in the

[129] See Lew (1992: 190-94); Kim and Lee (1994: 282); Ravenhill (2001: 5-6). Exports, all of them to developing country markets, peaked in 1979, amounting to 31,486 units and taking 15% of local production (Lansbury et al. 2007: 34).
[130] See Lew (1992: 211-26); Ravenhill (2001: 7-8).
[131] Despite its alleged aversion to foreign investors, during the 1980-81 restructuring drive, the Korean state attempted to consolidate the automobile industry under foreign control. After its refusal to form a 50/50 joint venture with GM, the government tried to force Hyundai out of the automobile industry. GM Korea, a 50/50 joint venture between GM and Daewoo where the former had practical control, was then chosen to remain as the sole domestic producer of compact and medium size passenger cars. Hyundai, however, stood firm and the government was itself forced to accept two companies. See Lew (1992: 243-9); Ravenhill (2001: 8).
[132] See Lew (1992: 56-7).
[133] Ravenhill (2001: 8).

form of robots for welding and painting, the most skill-intensive portions of the assembly process, as well as CNC machine-tools for parts machining.[134] In partnership with foreign firms, Korean automakers then embarked on a new wave of investments in state-of-the-art productive facilities, notably under the auspices of the 1986 Industrial Development Law designed to support the upgrading of 'nascent' industries, like the automotive, and the restructuring of 'declining' sectors.[135] Labour productivity in the Korean automotive industry thus increased sharply as did rationalisation in the use of materials. Between 1981 and 1988, the amount of labour-time necessary to build a motor-vehicle in Korea went from 8.1 to only 2.7 times that in Japan.[136] The much lower wages paid to manual production workers in Korea, notably after the post 1985 appreciation of the Japanese Yen *vis-à-vis* the Won, were then capable of compensating for the differences in labour productivity.[137] In effect, through the second part of the 1980s, Korean companies were beginning to penetrate successfully the world markets of low-end automobiles, previously supplied by their Japanese counterparts, especially as these were 'voluntarily' restricting their exports to the USA.[138]

Under these conditions, motor-vehicle production in Korea expanded rapidly while the industry became increasingly export-oriented. Production jumped to 1.5 million units by 1991, a more than tenfold increase in only one decade. Exports expanded sharply during 1985-88, a large portion of them to the highly competitive and lucrative North American market, to reach 26% of total output.[139] During this period of rapid growth, the pre-tax rate of profit (i.e. return on assets) of Hyundai, Korea's leading automobile company, rocketed to an average of 20.5% per year.[140]

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[134] In the mid-1980s, Korea's leading car manufacturer, Hyundai, began a process of fast introduction of industrial robots and automation of its assembly lines (Lansbury el al., 2007: 58-61). "Skilled tasks such as welding, where 85 per cent of total industrial robots were assigned, were the main target for automation" (Lansbury et al., 2007: 61). A similar trend was observed in the rest of the automobile industry. See Torii (1989: 187).

[135] See Green (1992: 416).

[136] See table A3.3.1.

[137] Wages in the Korean automotive industry were then around one fourth of those prevailing in its Japanese counterpart. See table A3.3.2. The wage structure in the Korean auto industry was, as the Japanese, more differentiated than in the industrially advanced countries of Europe and North America. See Bae (1986: 51-66).

[138] See Lee (1997: 21); Lautier (2001: 227-8).

[139] See Lansbury et al. (2007: 41).

[140] See Appendix 3.2 at the end of this chapter for the methodology used to calculate the rate of profit in the automobile industry, and for the evolution of Hyundai's and Toyota's rate of profit during 1983/5-96/7. Korean motor-vehicle firms, notably Hyundai, also benefited, as their Japanese counterparts, from the possibility to appropriate a portion of the surpluses generated by those small parts and components producers with which they entered in contact with in the market. See O'Brien (1998); Chung (1994) on the Korean motor-vehicle subcontracting system.

The strong expansion of the Korean automotive industry was most notable since, in sharp contrast to the experience of almost all other 'developing' countries, including Brazil, production there was mostly controlled by a few domestically-owned firms, each specialising in relatively few products and models.[141] This feature of the Korean auto industry, however, did not mean that it remained commercially independent from foreign influence, as it is frequently argued.[142] First, almost all production equipment and the most skill and technology intensive parts and components used for automobile manufacturing (e.g. original car designs and engines, transmissions and electronic systems) remained sourced outside Korea.[143] Secondly, during the 1980s restructuring, foreign companies were allowed to expand their presence in the industry through closer alliances with domestic firms, sometimes, notably in the case of GMK/Daewoo, involving the production in Korea under Original Equipment Manufacturing (OEM) arrangements.[144] Furthermore, Hyundai's successful penetration of the North American markets during the second part of the decade was largely possible due to its partnership with Mitsubishi who, in exchange for 10% of the company's equity, provided the much needed engine, environmental and safety technologies.[145]

Effectively, the relationship between Korean auto firms and their foreign counterparts was more diverse than frequently claimed. While Hyundai retained managerial control over its partnership with Mitsubishi and managed to undertake relatively independent Research and Development (R&D) and technology acquisition strategies, Daewoo was until the early 1990s under GM's virtual control from which it depended almost completely for technology provision. Kia continued with its tie-up with Mazda and pursued an intermediate strategy.[146] Moreover, through the mid-1980s, the acquisition of foreign technology also began to take a new form, namely, the establishment of R&D and styling centres in the USA, Europe and Japan.[147] Indeed, having access to an internationally cheap labour-force, Korean automobile manufacturers were concentrating in the relatively less skill-intensive stages of the

[141] According to Fisher (1988), only four models were mass produced in Korea in the early 1980s. See below for a comparison with Brazil's experience.
[142] See e.g. Green (1992).
[143] According the Far Eastern Economic Review, cited in Shapiro (1993: 242), during the 1980s local content was 50% rather than the 90% publicised by the Korean government.
[144] This practice consists of producing an existing model in another country under a different brand. It is a type of 'producer-driven' commodity chain. This strategy was followed in Korea by Ford and General Motors through their partnerships with Kia and Daewoo, respectively. See Kim and Lee (1994).
[145] See Waitt (1993: 199); O'Brien (1998: 89).
[146] See Lew (1992: 69-109).
[147] See Woo (1993: 349); Lautier (2001: 221-22).

production process. On the contrary, the domestic supply of the labour-force required to undertake basic R&D activities was still highly limited.[148]

The strong 1986-88 expansion of exports, however, was short-lived. As global markets cooled, Japanese car manufacturers lowered the price of their compact models to regain space lost to their Korean counterparts at the lower end of the market. Nevertheless, domestic demand remained strong and, notably after 1992 when overseas markets recovered, the Korean motor-vehicle industry, especially the production of passenger cars, expanded massively. By the middle of the decade, Korea became the fourth largest motor-vehicles manufacturer, ahead of such countries as France, Italy and the UK, producing 2.8 million units in 1997, 46.6% of them for foreign markets.[149] Thanks to the continuous introduction of state-of-the-art automated production equipment, labour productivity kept increasing fast in the Korean automobile sector to reach about 60% of Japanese levels by the mid-1990s.[150] Korean manufacturers could then comfortably compensate the lower level of labour productivity with lower wages and longer working-days. Furthermore, with lower investments in original designs and technologies, they were able to offer lower prices than their competitors from established brands in small, low-end automobiles. Despite significant investments in domestic R&D facilities, especially by Hyundai, most design concepts and innovations as well as technology and skill-intensive components and systems were still sourced outside Korea.[151] To the previous forms of technology acquisition, it was then added the purchase of foreign high-tech firms by Korean automobile companies. This was most notable in the case of Daewoo who, after ending its partnership with GM, bought UK's

[148] "[S]kills remain at the level of manufacturing engineering, not product engineering, or the capability to design core components of the automobile. Hyundai itself admits that while it is on par with established automakers in manufacturing technology, it is below them when it comes to product technology and far below them in design and system technologies." (Bello and Rosenfeld, 1992: 135-36).
[149] See Lansbury et al (2007: 34). By the late 1990s Korea was sent back to the fifth place by China.
[150] See O'Brien (1998: 52) on the quality of Korean auto plants. According to a comprehensive study carried out by McKinsey (1998) labour productivity in Korea motor-vehicle industry measured in value-added per worker was about half of that in the USA. This, according to the study, was not caused by the amount of capital used per worker as this was roughly the same in both countries. It was mainly caused by the skills differential between both countries: "Unlike other manufacturing industries (e.g. steel and dairy) where skill is embedded in technology and can be purchased from equipment suppliers, auto industry is a 'learning-by-doing' industry, where manufacturing skill and know-how (process technology) are acquired over a significant period. Despite the fact Korea has invested heavily in capital and is now as capital intensive as the US, its skill base (and consequently its labor productivity) lags far behind."
[151] See O'Brien (1998: 55, 90); Lansbury et al. (2007: 42-3).

International Automotive Design were large part of its models have been conceptualised and styled thereafter.[152]

Despite the substantial increase in the local supply of highly trained and experienced engineers and the simplification of design and product engineering work associated with the introduction of computer-assisted techniques, Korean industrial capital still had not sufficient access to the portion of the labour-force capable of performing these creative and complex tasks, at least not at world market standards. Neither did they reach the minimum efficient scale of 5 million units usually regarded as needed for the profitable investment in vanguard R&D.[153] These, nevertheless, were not obstacles for the normal valorisation of capital invested in the Korean automobile industry. Hyundai's rate of profit during 1985-1996, when the company took-off and positioned itself as a major global producer of low-end passenger cars, was higher than Toyota's, the contemporary most competitive company in the global market of automobiles. While Hyundai's rate of profit averaged around 11% per year, Toyota's averaged 8.36% or 10.57% including interest earned on their financial assets.[154]

The economic crisis that affected the Korean economy during 1997-98 showed, however, that not everything was rosy in the motor-vehicle industry. To being with, a large part of the resources used to fund the previous ambitious expansion in productive facilities had been borrowed, crucially in international credit markets.[155] In addition, local producers were beginning to feel the pinch from new low-cost competitors for low-end products, located in countries like Mexico, Slovakia, China and India, while being still unable to compete in high-end auto markets. Indeed, Korean cars still had significantly higher rate of failures than their more established competitors and, consequently, a lower brand image.[156] Moreover, the 1995 devaluation of the Japanese Yen had put extra pressure on Korean auto producers who had been largely competing on the basis of price. When global credit supply began to dry up in 1997-98, these problems became painfully evident and the Korean motor-vehicle industry entered a deep crisis together with most of the rest of the country's manufacturing sector. As

[152] See Lautier (2001: 221-2). Korean firms were also then beginning to invest in 'Third World' countries, such as Egypt, Venezuela and Botswana, to appropriate land rent through state subsidies and market protection.
[153] See Hkust (2005: 8).
[154] See table A3.2.1 in the Appendix 3.2.
[155] See Ravenhill (2001: 3)
[156] See O'Brien (1998: 93-5); Baily and Zitzewitz (1998: 262-3); Ravenhill (2001: 2).

domestic demand contracted sharply, automobile production fell from 2.82 in 1997 to 1.95 million in 1998.[157]

As in the early 1980s, the 1997-98 crisis gave place to another rationalisation and consolidation of the sector characterised by two main features, both involving the further expansion of foreign-owned firms' participation in the industry. First, Kia and Daewoo Motors went bankrupt and were absorbed by Hyundai and General Motors, respectively. The former remained 'independent' but sold 10-15% of its shares to Daimler-Chrysler who itself owned a third of Mitsubishi.[158] Samsung, which was finally allowed into the passenger cars market in partnership with Nissan during the peak of the mid-1990s expansion but came on stream one year before the crisis, also collapsed and was bought by Renault, Nissan's new owner.[159] These alliances helped the Korean automobile industry to acquire the know-how further to improve design capabilities and product quality, and to be able to expand into the higher segments of the automobile markets. Secondly, leading first tier auto-parts producers, like US's Delphi, Germany's Bosch and Japan's Denso, also managed to enter the market and established plants to produce in Korea, taking advantage of the effect of the undervaluation of the Korean currency on the value of domestic industrial assets.[160] In addition, Hyundai and Daewoo started relocating some activities to lower-wage countries, like India, China, Romania and Poland, to produce the lower end of their product range[161] and also expanded the use of low-cost 'temporary' workers or subcontractors in Korea as a form of keeping domestic labour costs down. Temporary or subcontracted workers employed by Hyundai in Korea increased from 16.6% of the shop-floor personnel in 2001 to 31.2% in 2003. Wages paid to these types of workers have been on average about 60% of those paid to regular workers.[162] Helped by these transformations and the post-1997 strong undervaluation of exchange rate, acting as an implicit subsidy to exports, Korean production of motor-vehicles rebounded sharply, expanding from just below 2 million units in 1998 to 4.1 million in 2007, with sales in foreign markets accounting for around half of total output.[163]

[157] See Ravenhill (2001: 2); Lansbury et al. (2007: 34).
[158] Though this alliance only lasted until 2004 when Daimler-Chrysler sold its stake at Hyundai, the latter managed to upgrade its technological and product base. Mitsubishi also divested from Hyundai though continued collaborating in the development of engines.
[159] See Ravenhill (2001: 5); Graham (2003: 96).
[160] See Bloomberg Businessweek (2005); Noble (2005: 15).
[161] See O'Brien (1998: 120-8); Ravenhill (2001: 2); Lautier (2001: 238-58); Lansbury et al. (2007: 53-4).
[162] See Lee and Frenkel (2004); Chung (2005: 13).
[163] See table A3.3.1 in the Appendix 3.3.

Nevertheless, despite these transformations and the post-1998 impressive export-led recovery, the bases for the valorisation of industrial capital invested in the production of motor-vehicles in Korea remained unchanged. Though manufacturing, and to some extent design, capabilities finally reached world market standards, it is questionable the extent to which Korean firms have been undertaking vanguard R&D even if this has been increasingly simplified through the use of computer-assisted techniques and the local supply of highly skilled engineers has increased dramatically. To begin with, although Hyundai/Kia, the only independent Korean auto firm, has been rapidly approaching the five million units of production supposedly needed for profitable investments in R&D; this is well below the output of Toyota, the leader in the market niche targeted by Hyundai.[164] With the recent modularisation trend and the consequent increase in the number of models (and thus units) per platform, it is doubtful that this scale difference is unimportant in terms of design capabilities. Moreover, with the partial exception of Mobis, a Hyundai spin-off, Korea's home-grown producers of auto-parts have lagged far behind those of any other major automobile manufacturing country.[165] As mentioned above, in the last twenty years technological improvements in product design and production processes have been increasingly developed in the parts and components sector. The development of the capabilities to design original models as well as parts and components is a precondition to generate product innovations, to appropriate surplus profits ('technological rents'), and thus to normally valorise in the long term. Despite recent advances, Korea's auto firms have been lagging behind their competitors in this field. In effect, Korean producer's cost advantage has remained sustained on the cheapness of its workforce[166] relative its productivity, and, after 1998, also the strong undervaluation of the national currency.[167]

In summary, in Korea, as in several other 'developing' countries, the state began to promote the motor-vehicle industry with import-substituting policies as early as 1962. An initial policy 'failure' became a 'success' only by the mid-1980s, when the conditions for the valorisation of capital invested in the assembly of automobiles in Korea had significantly changed as a result of the dynamics of the global process of

[164] According to Ravenhill (2001: 16), Hyundai's R&D expenditures were in 1999/2000 less than one-third of the level of those of Toyota. See also Noble (2005: 18).
[165] See McKinsey (1998); O'Brien (1998: 56, 91-2, 106-8); Noble (2005: 15), Doner et al. (2006).
[166] See Noble (2005: 18).
[167] Indeed, only the undervaluation of the Won has kept labour costs per unit produced in the Korean motor-vehicle industry below those of its closest competitor, the Japanese. See table A3.3.2 in the Appendix A3.3.3 at the end of this chapter.

capital accumulation depicted above. Korean auto-makers, independently or in partnership with, or under control of, foreign companies became global producers of low-end passenger cars.[168] Production equipment, complex parts (e.g. engines, transmissions) and (original) design know-how have been sourced out of the country, with the partial exception of Hyundai recently. Until the late 1980s, the political repression of the local labour-force reinforced its cheapness due to its historical origins and thus helped reproduce the base of the industry's international competitiveness, namely, the access to a relatively cheap and disciplined, and thus highly productive, labour-force. This was particularly important when Korean firms specialised in the most labour-intensive sector of the industry, the final assembly of automobiles, and in low-quality productions. Thereafter, as wages increased rapidly, Korean firms began to suffer, sooner or later, the competitive pressure coming from manufacturers established in low-wage countries, without being able to compete in the high-end of the market. Though this has changed recently, their price competitiveness in this sector of the global markets has continued to be sustained through long working-days and the undervaluation of the national currency.

The Brazilian automobile industry

Though the assembly of completely knock-down CKD kit by US automobile companies Ford and GM began in Brazil as early as the 1920s, it was only in the second part of the 1950s that local, integrated production of motor-vehicles would become a fact.[169] By then, the industry received a strong boost with the implementation of a series of policies to foster import-substitution in the sector. Already in 1956, the government created the Executive Group for the Automobile Industry in order to design and coordinate the implementation of the policies necessary to accomplish the ambitious goals for the industry set for in the Targets Plan launched during Kubitschek's *developmentalist* government. These included the protection of domestic markets from foreign competition, the provision of subsidised loans by state banks like the BNDE and the exemption of tariffs for imports of equipment and parts not produced domestically.

[168] Lew (1992: 223-46) convincingly documents how Hyundai emerged as a relatively independent and a leading auto maker despite the Korean state actions rather than thanks to them. In effect, GMK/Daewoo was selected in the failed 1980/81 state-led 'rationalisation' programme to remain as the only company producing passenger cars in Korea. GMK was allegedly better positioned thanks to its technological advantages and worldwide dealership network.
[169] See Shapiro (1991: 876-9).

More important, however, was the permission, since 1955, to import used and amortised machinery, and the priority access to low-priced foreign exchange given, since 1956, to firms producing, rather than simply assembling, locally. The latter measure reduced the cost imported of parts and components and multiplied (by a factor equal of the degree of exchange rate overvaluation) the value in foreign currency of profit remittances.[170] Furthermore, during the implementation of the Targets Plan, the Brazilian government even guaranteed the profits of foreign-owned assemblers establishing in the country.[171]

Supported by this arsenal of measures, transferring a portion of land rent to capital invested in the sector and thus compensating for the internationally high production costs emerging from the suboptimal scale of industrial facilities and the use of out-dated equipment, several major foreign-owned motor-vehicle firms, in some cases associated with local partners, entered the Brazilian economy to manufacture passenger cars and/or commercial vehicles. Local production of passenger cars thus increased from 1.166 to 60.205 units between 1957 and 1961 (motor-vehicles production in general increased from 30.542 to 145.584), achieving 87% and 93% of national content in terms of value and weight, respectively.[172] Since then, the motor-vehicle industry became Brazil's leading manufacturing sector in terms of capital invested, foreign participation, value-added and employment.

In contrast with the Korean experience during its early stages, auto-parts manufacturing was strongly promoted in Brazil from the inception of the motor-vehicle industry. However, unlike in the assembly sector, a relatively large portion of components and parts producers emerging before and during this period were small nationally-owned companies.[173] By transferring a portion of their surpluses to their larger partners, through low-priced inputs, the activities of these small domestic firms would subsequently support the process of valorisation of assemblers' capital or that of the largest foreign-owned auto-parts companies with which they entered in contact in the market.[174]

Despite expanding robustly during the second half of the 1950s, throughout the 1960s, the Brazilian motor-vehicle industry experienced a mixed performance, broadly following the evolution of the resources available to subsidise it and to sustain domestic

[170] See Oliveira and Travalo Popoutchi (1979: 19-23); Shapiro (1991: 889-93); Shapiro (1994: 134-56); Tauile (1988: 156).
[171] See Shapiro (1996).
[172] See Shapiro (1991: 877).
[173] See Posthuma (1997: 392).
[174] See Shapiro (1994: 195-99).

demand for its output, namely, land-rent and, to lesser extent, interest-bearing capital inflows.[175] The production of automobiles grew significantly until 1962; stagnated and consolidated during 1963-66 when a slow-growing land rent and the reversion of foreign credit flows manifested themselves in the weakening of local consumer demand for passenger cars and in the reduction of subsidies for producers; and, recovered robustly during 1967-73 as state resources to support it grew larger, production worker wages were squeezed and consumer demand enlarged thanks to the increase in high-income earner wages and the state-promoted expansion of consumer credit.[176] By the early 1970s, the Brazilian automotive industry had already become the largest and most developed outside North America, Europe and Japan. Furthermore, local content increased rapidly under legal requirements and market protection, reaching virtually 100% by the middle of the decade. Labour productivity, however, remained low by world market standards and the entire local production of motor-vehicles was sold in the highly protected domestic markets.[177]

As the land rent and interest-bearing capital inflows grew larger, during the rest of the 1970s, automobile production continued the 1967-73 expansionary path, although less strongly. A key change occurred, however, with respect to the developments of the previous period. Receiving a battery of incentives to export cars and components, auto firms began to slowly but constantly expand their sales in foreign markets.[178] These subsidies were necessary to compensate for the internationally high local production costs, then enhanced by new import-substitution policies for the capital goods industry as well as the increased overvaluation of the exchange rate, both necessary to allow industrial capital to appropriate a portion of the expanding land rent.[179] Moreover,

[175] See graphs 2.10 and 2.13 in Chapter 2 for the evolution of land rent and net credit inflows available for appropriation.
[176] Of the original 11 firms, only 8 remained in business. Domestic capitals disappeared completely.
[177] On the performance of the economy during the 1960s and early 1970s, see Shapiro (1991: 933-37).
[178] "Although some exports incentives were introduced in the late 1960s, export promotion gathered steam in the early 1970s under the Special Fiscal Benefits for Exports (Benefícios Fiscais a Programas Especiais de Exportação [BEFIEX]) programme, which was not unique to the automobile industry. To qualify for BEFIEX, firms had to commit to targeted dollar values of total exporters and net foreign exchange earnings. The incentives they received in return included exemptions from taxes on imported capital goods, parts, components, and raw materials. Every three dollars in exports was worth one dollar of duty-free imports. Federal and state value-added and sales taxes were waived on exports, waived federal and state value-added taxes on exports. Firms also received a credit equal to these waived taxes that could be used towards taxes due on goods produced for the domestic market. Various drawback schemes were also introduced that allowed firms to import goods that would otherwise have been banned for the production of exports. If the export or trade balance target was not fulfilled, firms had to return theses incentives." (Shapiro 1994: 223).
[179] On the size of export subsidies to the auto industry, see Oliveira and Travalo Popoutchi (1979: 178); Fischer (1988: 121).

subsidies also transferred extraordinary resources to the sector. In 1975 and 1980, incentives to export transport material amounted to 50% and 35% of FOB prices while the exchange rate was 37% overvalued, implying a 27% export 'tax', and on its parity, respectively. Despite these peculiarities, the notable expansion of exports throughout the 1970s gave the impression that the Brazilian motor-vehicles industry was finally maturing. Indeed, it was hailed by some contemporary analysts as one of the few cases of successful 'infant industry' promotion in 'developing' countries.[180]

During the 1980s, as domestic demand for automobiles declined, exports of passenger cars and components expanded further. This expansion, however, did not result from an increase in the industry's international competitiveness but, largely, from three other factors. First, the sharp fall in real manufacturing wages that occurred between mid-1980 and early 1984, when they dropped by almost 40%, and after 1986, when the gains of 1984-86 were rapidly eroded. Secondly, the strong undervaluation of the exchange rate prevailing during 1984-87 (23% average). Thirdly, the substantial subsidies still received by automobile firms for their sales in overseas markets.[181] Indeed, this situation explains why exports did not fully replace domestic demand. Subsidies under the BIFIEX programme were limited and connected to sales in the domestic market.[182] Hence, unlike the experience during the previous decade, when the magnitude of land rent and net credit inflows lent to the state were expanding, the 1980s exports growth took place in a context of falling domestic production and minimal investments.[183] Between the 1980 peak and 1987, production of motor-vehicles fell by 21% (27% for passenger cars) while exports increased to reach 37.5% of total output (41% for passenger cars). The level of domestic demand for motor-vehicles reached in 1980 (around one million units) would only be attained again in 1993, after falling to

[180] See World Bank (1983: 116).

[181] See Arbix (1997: 487). According to Shapiro (1993: 216), a study conducted in the mid-1980s by a major foreign-owned auto firm showed that Brazilian producers could only compete with US and Spanish assemblers in the world market when receiving export subsidies and could only compete with Korean and Japanese plants when, on top of that, the exchange rate was substantially undervalued. A cost analysis conducted by Crissiuma (1986: 138) confirmed this by showing that in 1984, when exports peaked, production costs in US$ were in Brazil about 30% higher than in Japan, despite the massive (around 35%) undervaluation of the Brazilian currency and the sharp fall in real wages during the previous three and a half years. According to the above mentioned report (Shapiro, 1993: 220), by the end of the decade, as the Brazilian currency recovered part of its value, VW Brazil was losing its edge in the US markets against the Korean competition. "According to the firm's calculations, its exports would have been profitable if the Cruzado had remained at its 1985 parity with the dollar." (Shapiro, 1993: 221). That year, the Brazilian currency was 36 % undervalued. See graph 2.1 in Chapter 2.

[182] See Shapiro (1997: 74-8) for a discussion of alternative explanations of Brazil's export success during the 1980s.

[183] See Shapiro (1994: 225-26).

nearly half that amount during the recession of 1987.[184] The conditions for the valorisation of capital in the sector, however, would then be substantially transformed.

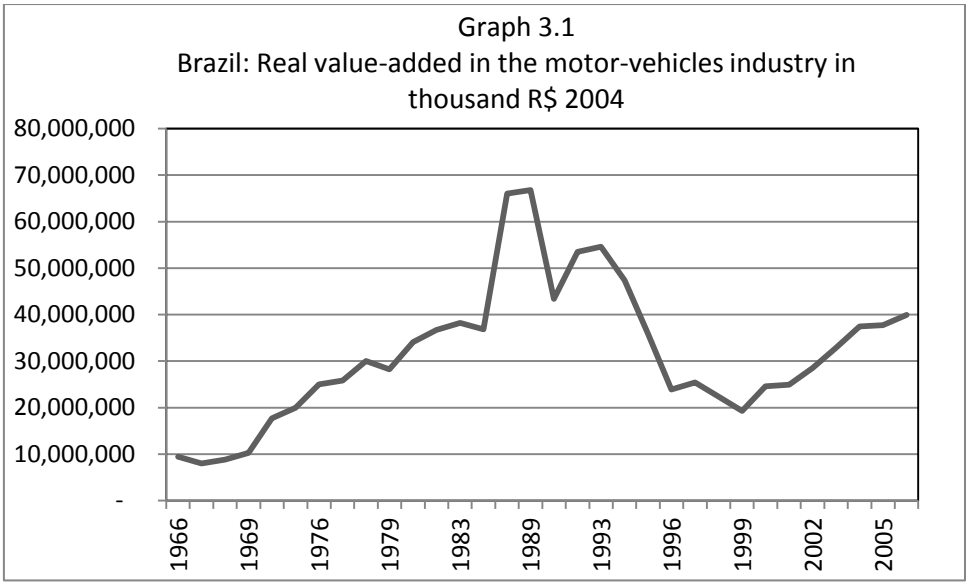
In 1993, as the land rent and the inflow of interest-bearing capital began to expand again, the production of motor-vehicles in Brazil entered a period of substantial recovery that lasted until 1997.[185] Total output reached then two millions units, 1.7 million of which were passenger cars. Though exports increased, notably to neighbouring Argentina under an 'administrated' trade programme, this recovery was largely based on the expansion of domestic demand.[186] As the internal market expanded, international assemblers redoubled their investment efforts in Brazil. This time, however, almost all investments in new plants were made outside the São Paulo metropolitan area, where the industry had been historically located. Peripheral regions offered much cheaper and less unionised labour, which, though less experienced in metal-mechanic activities, was nevertheless suitable under the new, increasingly automated, technological conditions. Moreover, somehow mirroring state actions during previous periods of high investments, regional governments embarked on an unprecedented 'subsidies war' to attract assemblers which was not only extremely onerous for their constrained budgets, as subsidies were substantial, but conspired strongly against the achievement of minimum efficient scales (MES) of production.[187] Indeed, only one of the 15 new plants built during the 1990s, Ford's factory in Camaçari (Bahia), achieved the 'theoretical' MES of 250.000 units per year.[188] Granting generous subsidies to new investments was not, however, the only state policy transferring resources to MNC auto assemblers. State-owned BNDES, then largely funded through forced savings programmes, also extended subsidised loans to finance investments and exports.[189] Finally, sales and production taxes were substantially lowered for 'people's cars' to stimulate their consumption.[190]

Moreover, while the market for motor-vehicles was kept highly protected, that for production equipment and auto-parts, notably electronic components, were largely

[184] See ANFAVEA (2008).
[185] See graphs 2.10 and 2.13 in Chapter 2 for the evolution of the land rent and net credit inflows available for appropriation.
[186] The MERCOSUR's Automobile Regime balanced exports and imports between members of the common market. See Vigevani and Candia Veiga (1997); O'Keefe and Haar (2001).
[187] See Rodriguez Pose and Arvix (2001); Arbix (2002). Cavalcante and Uderman (2004) estimated the present value of all incentives granted by the state of Bahia to Ford for the establishment of an assembly plant in Camaçari were equal to 75% of the total investment.
[188] See ANFAVEA (2008).
[189] See Medeiros Santos and Pinhao (s/d); Shapiro (1997: 78-81).
[190] See Bede (1997: 365-7).

liberalised and local content requirements significantly relaxed. This new protective structure was made operative through the implementation of the 1995 Automotive Plan that sharply increased the protection of the domestic market for finished automobiles, reversing the radical 1990-94 liberalisation programme which, in combination with a strongly overvalued exchange rate, had given place to a massive inflow of finished car imports and had provoked a strong lobby from the side of assemblers and trade unions for the reestablishment of trade controls.[191] Import tariffs for finished vehicles increased from 20% in 1994 to 70% during 1995-99, although they stayed at 35% for companies producing in Brazil. Import tariffs for auto-parts remained at 18% in 1994-95 and were lowered to 2.4-9.6% for 1996-99. Taxes for equipment imports were lowered to 2%.[192] During 1995-98, the Real was 55-83% overvalued, thus reducing the cost of imports by 35-43%. National content requirements thus went down from 85% at the beginning of the decade to 50-60% at its end.[193] This differentiated structure of market protection allowed the appropriation of a portion of land rent by foreign-owned assemblers, and also increased the portion of profits of those surviving nationally-owned auto-part firms appropriated by assemblers and first-tier suppliers through low-priced components. This process accelerated the denationalisation and the vertical integration of the auto-parts sector.[194]

[191] See Posthuma (1997: 404-5); Laplane and Sarti (2008: 153).
[192] See Medeiros Santos and Gonçalves (2001: 209); Laplane and Sarti (2008: 154).
[193] See Posthuma (1997: 406); Medeiros Santos and Burity (s/d: 7-8).
[194] According to Bede (1996), after the implementation of the Automotive Plan, 'effective protection' was 148% and -15% for assemblers and auto-parts producers, respectively. This biased protective structure turn profitability in the auto-parts sector into negative grounds. See Laplane and Sarti (2008: 179-82).



Source: IBGE, *Annual Industrial Survey*, various issues.

Despite being notable in terms of output, the 1993-98 expansion of motor-vehicles production differed in one key aspect from that of the period between 1968 and 1980. It occurred together with a contraction in the sector's value-added (see graph 3.1 above). As mentioned already, the combination of an overvalued currency (1994-98) and market opening for auto-parts and equipment improved the profitability of assemblers producing for protected domestic and, increasingly, regional markets but hurt that of inputs producers.[195] These policies reduced assemblers' domestic costs while maintaining the prices of their output. They were necessary to allow the normal valorisation of assemblers' capital despite their still low levels of productivity.[196] During the 1993/4-98 expansion, output per assembly work hour in Brazil was only 7% higher than in neighbouring Argentina, even when plants in the former tended to specialise on smaller vehicles than their counterparts based in the latter,[197] and 27% lower than the level of its, world-markets-oriented, Mexican counterpart.[198] In addition, as domestic consumer purchasing capacities remained weak *vis-à-vis* pre-1980 levels (real wages were lower in the 1990s than before 1980), production itself shifted to low-

[195] See Bede (1997: 383-6)
[196] According to McKinsey (1998), in 1995/6, labour productivity in the Brazilian motor-vehicle industry was only 30% of the US level which was itself lower than the Japanese. Also see, table A3.3.1 in the Appendix 3.
[197] See Bede (1997: 376).
[198] See table A3.3.3 in the Appendix 3.3 for the evolution of labour productivity and labour costs in Argentina, Brazil and Mexico.

value models. The share of 'people's cars' (i.e. with engines smaller than 1,000 cc) in the Brazilian market of automobiles increased from 4.3% in 1990 to 73% in 1998.[199]

As the 1970s expansion, the 1990s recovery, however limited, was followed by a sharp slump. At the end of the decade, domestic and regional (i.e. Argentine) demand for Brazilian motor-vehicles fell again as the global economy entered a new period of slow growth and the magnitude of land rent and foreign loans available to support industrial capital's valorisation in Brazil contracted strongly. Total motor-vehicles production fell from 2.07 in 1997 to 1.35 in 1999, recovered in 2000, and remained almost stagnant at around 1.8 million units per year until 2003. During this period, around 70% of the local sales of passenger cars were low-priced 'people's cars'.[200]

Nevertheless, by 2004 the Brazilian automobile industry entered a new period of fast growth. The recovery of the land rent was then, again, both boosting the process of 'subsidisation' of industrial production, notably of motor-vehicles, and permitting the expansion of domestic demand for them. While the increasing overvaluation of the exchange rate was channelling a portion of the expanding land rent directly to industrial capital, BNDES loans were now funding not only producers but also consumers of motor-vehicles, thus helping expand the domestic markets.[201] Moreover, the recovery of Brazil's main foreign markets for complex durable-consumer goods like automobiles, Argentina and Venezuela, was also enlarging the protected markets for Brazilian motor-vehicles. On the basis of investments largely undertaken during the 1990s, by 2007 the production of motor-vehicles in Brazil reached 2.97 million units, 80% of which were passenger cars.[202] Domestic sales then absorbed 73.5% of total output, while regional markets took 57% of foreign sales. Exports of automobiles outside South America, though increasing strongly, were largely destined to Mexico and South Africa, where quality regulations are not as stringent as in the industrially advanced countries.[203] In 2007, Mexico and South Africa took 16% and 11% of total foreign sales, respectively.

[199] See ANFAVEA (2008) for the evolution of the share of 'people's car' in domestic demand.
[200] See table A3.3.1 for the evolution of motor-vehicle production.
[201] Interest rates and repayment conditions on car purchases were softened significantly. See Pretti Casotti and Goldenstein (2008: 180).
[202] Most investments occurring during 2003-07 were on model development. See Laplane and Sarti (2008: 164); Pretti Casotti and Goldenstein (2008: 181).
[203] Brazil and Mexico signed in 2002 an agreement that permits the export and import of 50,000 automobiles per year duty free. As the pact with Argentina, this type of agreement has several implications. First, it is not affected by the overvaluation of the currency as imports and exports are roughly equal and what is lost through 'taxed' exports is gained through 'subsidised' imports. Secondly, though not to world market norms, it expands the scale of production for each model, as firms tend to specialise in different models in each country. Laplane and Sarti (2008: 170).

Yet, as exchange rate overvaluation strengthened from 24% in 2005 to 83% in 2008, in order to channel the expanding land rent to industrial capital, exports of automobiles fell strongly, by almost 20%. In US dollars at market exchange rates, assembly sector labour costs per motor-vehicle became higher than in its main export market, Argentina, and significantly above those in Mexico.[204] On the other hand, as economy-wide employment and real wages increased and consumer credit expanded, the share of 'people's cars' in domestic sales during 2004-07 fell back to around 55%. Moreover, with a substantially enlarged land rent sustaining the process of capital accumulation, the now largely foreign-owned auto-parts sector also enjoyed a general recovery.[205]

In summary, in contrast to the Korean experience but in line with most other 'developing' countries, motor-vehicle assemblers in Brazil have been almost exclusively wholly-owned foreign MNCs.[206] Domestic firms have concentrated on the less technology-intensive segments of the auto-parts sector, as the largest producers of components have also been foreign-owned companies with global operations.[207] Also in contrast to the Korean experience, the largest part of Brazilian production of motor-vehicles has been sold in the domestic and, crucially since the 1990s, regional markets. Sales beyond these protected markets, in the upward trend since the 1970s, have been only possible thanks to substantial state subsidies, a strongly undervalued exchange rate and/or wage-squeezes compensating for the internationally low productivity of local labour, largely resulting from the use of out-dated equipment and suboptimal production scales. Effectively, while 24% of locally produced motor-vehicles (23% for passenger cars) were exported between 1993 and 2007, the Mercosur, the enlarged protected 'domestic' market, became the largest destination, taking on average over half of Brazil's exports of automobiles and components.[208] Most of them occurred within the Argentina-Brazil automobile sector agreement of 'administered' trade, in which imports and exports compensate each other. The rest of overseas sales were largely directed to specific middle-income countries, Mexico and South Africa, within the frame of relatively similar bilateral trade agreements.

[204] See table A3.3.3. Brazilian hourly compensation costs in US$ jumped from 150% of Mexican values in 2004 to 250% in 2007. With lower productivity, US$ labour costs per unit of output in the assembly sector in Brazil increased from 210% of Mexican values in 2004 to 320% in 2007.
[205] See Laplane and Sarti (2008: 180-2) on the recent evolution of the auto-parts sector.
[206] The only domestically-owned company was the state-owned Fábrica Nacional de Motores S.A., created in 1942 and sold to Alfa-Romeo in 1967 (Shapiro 1991: 935).
[207] See Shapiro (1994: 191-3).
[208] See UNIDO (2003: 15); ANFAVEA (2008).

The relatively small size of the domestic and regional markets for motor-vehicles and, above all, the wide range of model diversification have meant that production volumes in Brazil have been consistently below world-market norms.[209] This has set up a barrier to the introduction of vanguard equipment, like CNC machine-tools, robots and other computer-controlled systems.[210] Consequently, labour productivity in Brazil, even if increasing, has been constantly lower than in leading producing countries, including Korea recently. Effectively, it took four times as much direct (assembly) and indirect (parts and components manufacturing) labour-time to produce a motor-vehicle in Brazil than in Japan in the 1970s, 5 times during the 1980s, 3 during the 1990s and 2.5 in the 2000s.[211] Production costs have thus been above those regulating world-market prices, despite several inputs, notably steel, electricity and, since 1990, labour-power have been usually purchased at below international prices.[212] The problems of international competitiveness have been most notable in the auto-parts sector where MES tend to be higher than in final assembly operations and the scale of Brazilian producers significantly below them. Moreover, the forms of appropriation of the land rent by industrial capital in general (e.g. the combination of an overvalued exchange rate and market protection) have further worsened the international competitiveness of local auto producers. Nevertheless, capital in the sector has been

[209] The issue of MES in the auto industry has been widely debated. Agreement, however, seems not to have been reached, notably for final assembly operations. Some authors argue that in the latter case MES have historically been around 250.000 units per plant (Husan, 1997), while others claim that this figure holds for each model produced and 1.000.000 per plant with four basic models (Fisher, 1988: 72-9). If the former was the case, only one (Ford's Bahia) of the 15 plants built in Brazil during the 1990s and few of the old ones would have ever achieved the MES of production. If the latter theoretical MES are correct, none of the Brazilian plants would have ever reached the threshold. In the case of parts and components, most authors agree that the MES range from 500.000 in the case of axles making to 1.000.000 for casting engine blocks. Nevertheless, it is thus probably more revealing to compare the scale of production of Brazilian subsidiaries with that of their plants in their countries of origin. For instance, Volkswagen plants in Germany assembled during the 1990s an average of 3.4 times the amount of cars of its plants in Brazil. In 2004, Fiat's plant in Cassino (Italy) produced as many cars as its plant in Betim (Minas Gerais, Brazil) but far fewer models. While the former has concentrated in one or two models, the latter has mass produced at least four. In 2007, when passenger car production reached the all-time record of 2.4 million units, there were 10 firms in Brazil owning 17 assembly plants and producing an average of 140,491 units per plant (of different models). Only two companies, Fiat and VW, were producing more than 250,000 units per plant.

[210] See Tauile (1988); McKinsey (1998). See also Veira and Coutinho Garcia (2004) comparing the level of automation of Fiat's plants in Betim and Cassino.

[211] See table A3.3.1. These figures, however, underestimate the differences since the early 1990s. First, since then Japanese firms were turning to cater to the higher end of global markets while assemblers in Brazil were beginning to concentrate in the production of low-end 'people's cars'. Secondly, the post-1990 reduction in local content requirements (and the increase in auto-parts imports) in Brazil artificially increased the levels of overall labour productivity, notably vis-à-vis highly self-sufficient national motor-vehicle industries like the Japanese.

[212] See Fisher (1988: 81-4); Eletrobras (1987).

itself able to accumulate through the appropriation of a (substantial) portion of the Brazilian land rent. In this way, MNC subsidiaries have been able to valorise normally without competing with their own parent houses in world markets and using already amortised equipment. The development and growth of the auto industry, however, has been, as the rest of the industrial sector, dependent on the evolution of the magnitude of the land rent available in the economy.

3.1.3) Transformations in the global semiconductors industry

The production of semiconductors is at the core of the microelectronics, and thus electronics, industries. The sector was born in the aftermath of the Second World War when the transistor replaced the vacuum valve as the main device used to control the motion of electrons and thus produce electrical amplification through non-mechanical means. Though the industry was originally heavily related to the US defence sector, the use of transistors quickly found commercial applications. Indeed, the transistor rapidly became a key input used to manufacture consumer and capital goods incorporating electronically-controlled functions. Already in the early 1960s, the transistor was replaced by the integrated circuit (IC) when technological improvements in materials and production equipment permitted the combination of several transistors into one single system.[213] ICs are at the centre of the development of electronically-controlled automated, computerised and robotised means of production (i.e. the so-called microelectronics revolution).[214]

The production of semiconductors (i.e. microchips) involves several labour processes which, though functionally integrated, are technically disarticulated and thus potentially spatially separable: R&D; mask making (the production of the celluloid filaments that contain the microscopic electronic circuits); wafer fabrication (the process by which the circuits in the mask are transferred to the silicon wafer and etched into its surface); assembly of transistors, diodes and integrated circuits; testing of the product. These component labour-processes require different types of capital-investment, specialised inputs and labour skills. The R&D stage is capital-intensive and, crucially, involves the participation of highly qualified and creative scientific and engineering

[213] The integrated circuit, or "chip", is basically a network of tiny wires fabricated on a surface, connecting transistors that switch on and off for processing data in binary code. (Brown and Linden, 2005: 280).
[214] On the origins of the semiconductors industry, see Flamm (1985: 39-48).

workers. Mask making and wafer fabrication, in turn, are the most capital-intensive part of the production process and need highly-skilled engineers as well as technicians. In addition, wafer fabrication also requires a significant numbers of semi-skilled workers, particularly operators of the 'diffusion' furnaces. The assembly stage has been predominately an unskilled-labour-intensive process, though since the second part of the 1980s, automated equipment has begun to replace the former. Finally, the testing stage, although increasingly capital-intensive and automated, requires large amounts of both technical and unskilled labour.[215]

Though semiconductor technology was born in the northeast of the USA, as soon as the industry emerged, it began to be relocated to the west coast, the Silicon Valley, in search for the proper supply of all types of labour-power needed in the integral process of microchips production. "On the one hand, the industry's demands for unskilled and semiskilled labour was largely filled by immigrant female Latino and Asian (especially Filipino) workers who resided in the San Jose area of the County, some distance from the centre of production in such north-County cities as Palo Alto, Mountain View and Sunnyvale. On the other hand, the industry's demands for highly trained scientists, engineers, and technicians have been filled largely by white male graduates of local universities and colleges who tend to reside in relatively close proximity to the semiconductor plants and laboratories."[216]

This 'spatial fix', however, would not be the industry's last. In effect, taking advantage of the vast local availability of cheap and highly disciplined female labour of peasant origin, Japanese industrial capital emerged, already in the late 1950s, as a major producer of simple transistors, mainly used in the manufacture of radios for export markets. Soon after, in the early 1960s, US firms responded to this competitive pressure by beginning to move their assembly facilities of these types of semiconductors to East and, subsequently, Southeast Asian locations, where a labour-force with similar characteristics as, but cheaper than, the Japanese could be found, or by also subcontracting these activities to local firms there.[217] A similar process of relocation

[215] See Flamm (1985: 48); Henderson (1989: 31-2). In the mid-1990s, even after automation had already reduced the requirements of unskilled labour, 80% of the workforce in an assembly plant is unskilled. Engineers comprise 6% of the workforce while technicians 13%. In the wafer fabrication facilities, engineers made between 15% and 24% of the workforce (plus 12-14% technicians), while in design stages they constituted 85% of it. See Brown and Linden (2005: 284, 296).

[216] See Henderson (1989: 40).

[217] "The primary appeal of South-East Asia, of course, is its large reserves of surplus labour and its low wage levels (see Table 1). But it must be stated immediately that abundant and cheap labour is not in itself a sufficient condition to draw in foreign direct investments. The *potential* attraction of this labour is

took place, later on, when ICs became the most important semiconductor device. Trade policies in the USA, including commercial laws, and in the recipient countries were modified to accommodate and mediate these transformations. The very low transport costs involved in the international movement of ICs, due to their low weight and small size, facilitated this process.[218]

Effectively, already by the late 1970s, Japanese firms were beginning to compete successfully with US manufacturers in the production of one type of ICs: Dynamic Random Access Memory (DRAM) chips. Apart from the actions of the Japanese 'developmental' state supporting local firms, several inter-connected factors and trends favoured this transformation in the structure of the global microelectronics industry. First, with the appearance of the microprocessor, the automation and robotisation of industrial equipment, including that used to manufacture semiconductors, underwent a rapid development. Though final assembly was done manually, wafer fabrication and testing were largely automated and thus required low-skill workers.[219] Secondly, DRAMs, or memory chips, were (and still are) the most standardised, mass produced, low-end segment of the ICs market.[220] Memory chips have thus been the segment of the advanced ICs market with the largest scale of production and the lowest level of scientific and engineering skills requirements; they require relatively little design capabilities.[221] Unlike in the microprocessor or application specific integrated circuits (ASICs) sectors, in DRAMs manufacturing most productivity improvements have come from "improving process technology and thus learning economies and yields, primarily through continuous improvements on the shop-floor and tedious trial-and-error."[222] Thirdly, by the 1970s Japanese capital had access to a large supply of both skilled and semiskilled workers at internationally low cost. The 'dual' character of the Japanese labour market, also assured the provision of

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only rendered actual when additional cultural and political attributes are forthcoming in the host society. Several countries in South-East Asia possess such additional attributes in abundance. They have stable and highly reliable labour forces that seem ready to accept not just low wages but also long hours, accelerated rhythms of work, round-the-clock manufacturing schedules, and so on. Women workers are an especially important element of these labour forces." Scott (1987: 144-5). See also Henderson (1989). "The two primary 'captive' producers (producing for internal use), IBM and AT&T, initially kept their assembly in the United States and adopted a higher level of automation than the offshore plants." Brown and Linden (2005: 285).

[218] See Scott (1991: 145-50); Flamm (1985: 48-9); Brown and Linden (2005: 282-5).

[219] See Flamm (1985: 50-1).

[220] See Tassey (1990: 91); Brown and Linden (2005: 285).

[221] See D.S. Cho et al. (1998: 499); Ernst (1998: 29).

[222] See Ernst (1998: 29-30). After basic designs were developed by US firms in the early 1970s, manufacturing ability began to count more than 'design flair'. See Mathews and Cho (2000: 42).

the unskilled portion of the labour-force, including that used in manual assembly, at particularly low costs. Fourthly, the discipline of the Japanese labour-force, of all types of qualities, increased its productivity when working as an appendage of automated systems of machinery or in the manual assembly of parts as particularly required in the semiconductors industry.[223] Fifthly, Japanese firms were able to exploit the substantial scale economies existing in DRAMs production due to their vertical integration (i.e. as electronics goods producers). Furthermore, Japanese producers could take advantage of rapidly changing technologies and entered the industry with the most vanguard equipment while their US counterparts found themselves with obsolete fixed capital.[224]

By the mid-1980s, Japanese memory chip manufacturers were not only out-competing their US counterparts due to their lower production costs. They were also continuously introducing innovations in process, production and, consequently, product technologies in this segment of the industry.[225] Nevertheless, sophisticated equipment and, above all, chip design were, well into the 1990s, developed through the adaptation of basic circuit architectures designed by US firms. In the case of higher value-added devices like microprocessors, which they were then beginning to produce, the technological dependence was even higher; they were mainly done under licenses from US firms. This commercial strategy was not, however, free of problems. Disputes over the copyrights of basic designs were frequently contested in the courts of law.[226] Still, by the late 1980s, Japan became the largest producer of semiconductors by volume.[227]

In global capitalism, however, nothing is stagnant. The same objective conditions that had allowed the development and growth of the Japanese semiconductors industry began, sooner or later, to challenge it. While automation of production equipment was developing further through the second half of the 1980s, including those used in the assembly stages,[228] microchip design also began to be automated through the use of specialised software programmes. The combination of further equipment automation and design computerisation not only permitted the production of more complex semiconductors, and thus reinforced the trend. It also

[223] On these characteristics of the Japanese semiconductors industry, see Mody and Wheeler (1987: 378-80).
[224] See Cho et al. (1998: 494-6).
[225] See Tassey (1990: 93); Cho et al. (1998: 496).
[226] See Mathews and Cho (2000: 152).
[227] See Linden et al. (2004: 251).
[228] For example, through the use of Surface Mount Technology. See Balconi (1999: 26-7) on the technological changes increasing the level of automation of productive facilities through the 1980s and 1990s. See Brown and Campbell (2001) for the 1990s.

resulted in the further standardisation of the production of complex microchips and thus gave place to new transformations in the industry's international division of labour.[229] First, US firms began to concentrate on the higher end of the industry's 'value chain', namely, the design and, to a lesser extent, production of microprocessors and ASICs. Secondly, chip fabrication became increasingly done in East Asian locations, notably in Taiwan and Singapore. This type of commercial association gave place to the emergence of foundries specialised in wafer fabrication for different clients and 'fabless' (i.e. without fabrication facilities) companies specialised in the design of the microchips.[230] On these bases, through the late 1980s, the US semiconductors industry started to reverse the previous trend and by the mid-1990s had, again, secured a larger share of the world markets of semiconductors than its Japanese counterpart.[231] Thirdly, since the late 1980s, Japanese producers began to lose an increasingly larger segment of the DRAMs market against Korean firms,[232] without being able to compete successfully with US firms in the design and production of higher value-added microprocessors and ASICs.[233] The growth in the supply of skilled and semi-skilled labour-force in these East Asian countries, together with the increased automation and standardisation, and thus simplification, of production processes, was allowing the move of their semiconductors industries from simply final assembly of chips to their full fabrication.[234]

The automation of microchips design not only facilitated the international separation of the R&D and fabrication stages. This process also tended to simplify several parts of the design engineering work, made possible its modularisation and, potentially, its international fragmentation. In effect, taking advantage of these developments, and also of the improvement in telecommunication technologies (resulting themselves from the on-going microelectronics 'revolution') and the local availability of low-cost engineers, capital began by the late 1990s to relocate to Asia some parts of the now simplified design work. Due to the large local supply of labour-force with engineering skills and their large experience in chip manufacturing,

[229] See Leachman and Leachman (2004: 207).
[230] See Leachman and Leachman (2004: 220-4); Brown and Linden (2005: 289-92)
[231] See Linden et al. (2004: 251).
[232] See Ernst (1998: 10).
[233] See Ernst (1998: 10); Leachman and Leachman (2004: 213-4).
[234] See Scott (1991: 156). On the impact of technological change during the 1990s on skill requirements in semiconductors fabrication, see Brown and Campbell (2001).

Taiwanese and Korean capitals have been at the forefront in this new transformation in the international division of labour in the semiconductors industry.[235]

Brazil has been among the few non-Asian developing countries, if not the only one, to have developed some sort of semiconductors industry beyond the pre-ICs era and the assembly stages of ICs. The development of the Brazilian semiconductors industry was not, however, sustained on the capacity of individual capital to valorise normally in the long term through its competition in world markets by means of vanguard technological development or the use of a relatively cheap and disciplined workforce for 'standardised productions'. On the contrary, the Brazilian semiconductors industry developed as part of the local process of import-substituting industrialisation. As has been generally the case in the Brazilian industrial sector, the long-run development and growth of the semiconductors industry thus depended on the magnitude of the extraordinary resources available to sustain it. Consequently, it extended as much as the evolution the latter permitted it, and collapsed when subsidies and protection granted to it dried out in the early 1990s.

The Korean semiconductors industry

The Korean electronics industry started in the late 1950s with the assembly of vacuum valves used for the manufacturing of radios for domestic consumers. A wide range of ISI-style policies were implemented then to promote the sector's growth. Apart from market protection and subsidised credit, in 1962 the new military government implemented a campaign to send radios to rural areas to publicise its actions. Nevertheless, despite being largely oriented towards the domestic market, helped by a combination of low wages, mild export subsidies and a slightly weakening (though still overvalued) exchange rate, in 1962 exports of radios began in earnest with shipments to the USA. The value of electronic goods exports fell, however, sharply in 1963 when the overvaluation of the currency strengthened, but increased again in 1964 when the opposite occurred. In December 1966, after four consecutive years of strong export growth, the government finally passed the first 'promotional law' for the electronics industry. The sector was then put at the centre of the Second Five-Year Economic Plan

[235] See Ernest (2005).

for 1967-71, and to support its development, a special agency, the Fine Instruments Centre (FIC), was created.[236]

In 1965, taking advantage of the large local availability of cheap and highly disciplined labour-power, mainly female workers of peasant origin, Komi became the first foreign-owned semiconductors firms to open productive facilities in Korea for the manual assembly of transistors and diodes. Recent changes in US tariff regulations, allowed these firms to export their output back to the USA paying only import taxes on the value added in Korea. The next year, Fairchild, the third largest and a leading US semiconductor manufacturer, followed suit and established a wholly-owned assembly facility, even if that was supposedly at odds with current regulations governing the inflow of FDI. The Foreign Capital Inducement Law was, nevertheless, soon amended in order to attract other companies in the sector. Under its auspices, all types of possible incentives were granted to foreign investors.[237]

In 1969, after several years of strong growth, state support to the industry expanded. The Korean government then passed the comprehensive Electronics Industry Promotion Law and the Eight-Year Plan (1969-76) for the promotion of the sector. In 1971, additional measures were implemented to further promote exports (e.g. relating access to domestic markets to export performance) and joint-ventures between foreign and local firms.[238] Moreover, the sector was also included in the heavy and chemical industries drive launched in 1973 and the Kumi industrial estate and Masan Export Processing Zone (EPZ) were developed to accommodate firms in the sector. Under this policy umbrella, preferential loans were made available to the electronics industry for equipment and technology acquisition and generous tax breaks were granted. These programmes were aimed at developing the domestic fabrication of semiconductors used in the emerging consumer electronics industry, then mainly imported from Japan.[239]

The production of components and parts, which included semiconductors, expanded rapidly and was until the mid-1970s the largest sub-sector within the Korean electronics industry.[240] At this point, the semiconductors sector was, unlike the rest of the electronics industry, mainly controlled by foreign-owned companies. Only one Korean firm, Anam, assembled semiconductors, though under subcontracting

[236] See Hong (1997: 80-1).
[237] See Hong (1997: 83); Mathews and Cho (2000: 112-3).
[238] See Hong (1997: 84-5).
[239] See Hong (1997: 80-1); Mathews and Cho (2000: 113-16).
[240] See Mitchell (1988: 139)

arrangements with US firms. Its place in the industry was, however, only marginal. Local production, nearly all exported, consisted of the manual assembly of transistors and ICs and their packaging, the two least skill-intensive parts of the industry's value chain.[241] Most foreign-controlled semiconductors production plants were located in the Massan EPZ, where trade unions were forbidden and most labour rights not respected. Young female workers of rural origin constituted the vast majority of the employed workforce.[242] This was not only an extremely cheap type of labour-power, notably as many workers lived in company dormitories, but also a highly disciplined, and thus productive.[243]

Despite initial foreign domination and specialisation in the low-end of the industry, strong state support for local firms and higher value-added activities would slowly begin to render some fruits. In 1974, the first wafer fabricating firm, Korea Semiconductors Inc., was formed as a joint venture between a domestic company and a US firm which provided the needed technology and know-how. This project failed and, in 1975, was bought by Samsung Electronics, aiming to manufacture simple semiconductor devices for its expanding consumer electronics production. Other firms followed suit and attempted to enter the sector through alliances with US and Japanese firms supplying or licensing production and product technologies and know-how. These included a future market leader, Goldstar. None of these projects, however, prospered beyond the production and assembly of simple ICs.

In 1975, as part of the implementation of the HCI Plan (1973-79), the Ministry of Trade and Industry (MTI) devised a six-year plan for the electronics industry to promote the domestic production of six electronic components, including silicon wafer fabrication and memory chips. The primary goal of the sectoral plan was the domestication of the entire process of semiconductor manufacturing by 1978. To accomplish this ambitious task, the Korean government planned to invest $150 million in facilities and $58 in R&D. A major institutional overhauling took place to carry out the project. Responding to the MTI initiative, in 1976 private firms formed the Electronic Industries Association of Korea (EIAK) by merging two existing industry associations. Later, in 1979, the EIAK absorbed the FIC, the semi-public organisation in charge of the sector's promotion, and in 1980 the import recommendation functions of

[241] See Hong (1997: 86).
[242] See Michell (1988: 146-47); Choi (1989: 63)
[243] See Ranis (1973: 403); Scott (1987: 151); Ernst (1998: 12).

the Electronic Products Manufacturers Association. Furthermore, also in 1976, the Korean Institute of Electronics Technology (KIET) was created in the Kumi industrial park under joint public and private sectors support. Its main goal was to assist R&D efforts in high-tech areas. By 1979, the KIET had built, licensing the necessary foreign technology, a pilot plant for the production of 16K memory chips. The know-how acquired was subsequently transferred to private sector producers.[244]

Despite these advances, by the turn of the decade, Korean semiconductors fabrication was still in its incipient stages. The material conditions were not yet mature for capital in Korea to do more than to assemble microchips or produce simple devices for low value-added consumer electronics such as wrist watches and transistors. In contrast to the previous period, during the 1970s consumer goods, rather than parts and components, led the fast growth (46% p.a.) of the Korean electronics industry. Parts and components production, still mostly controlled by foreign firms, declined as share of total output from 61.5% in 1972 to 48.4% in 1979.[245]

Nevertheless, the reality and performance of the Korean semiconductors industry would soon begin to change. In 1981-82, a number of promotional plans for the sector were launched and a new wave of investments in privately-owned fabrication facilities followed soon after. Apart from soft loans, the state also protected the domestic market for low-end products and granted subsidies for R&D projects destined to master foreign technologies.[246] Samsung, again, led the process and was swiftly followed by Goldstar, Hyundai and Daewoo, the largest *chaebols*. Investments in manufacturing facilities accelerated sharply after 1984, growing 45% per year up to 1991, totalling 12,200 million US$ of 2004.[247] To fund these massive investments, local firms complemented the soft loans granted by the government with resources borrowed in the non-banking financial sector and, to a lesser extent, in foreign financial markets. Equipment, know-how and chip designs were imported or licensed from US and Japanese manufacturers. Following the strategy pursued by Japanese firms before them and responding to the on-going reconfiguration of the global semiconductors industry, Korean firms began then to specialise in the production of standardised memory chips (DRAMs).[248] Indeed, Daewoo's attempts to do otherwise and produce more complex,

[244] See Hong (1997: 91); Mathews and Cho (2000: 118).
[245] See Hong (1997: 92-4).
[246] See Cho et al. (1998: 500); Mathews and Cho (2000: 120-1, 125-6).
[247] See Hong (1997: 102); Cho et al. (1998: 499).
[248] See Hong (1997: 100-3).

skill-intensive ICs, like microprocessors, failed massively and were quickly abandoned.[249]

Stimulated by their incipient commercial success in this sub-branch of the semiconductors industry, mostly under OEM arrangements, Korean firms, Samsung in particular, made significant efforts to develop independent indigenous technological capabilities for the production of memory chips. Results, however, were mixed. First, local firms still required foreign basic chip designs and foreign trained engineers to manage their projects. Secondly, indigenous 'designs' were still lagging well behind the world technological frontier. Thirdly, most part of domestic productions was done using technology licensed from foreign firms, in most of the cases already out-dated. Though allowing the growth of the industry, this commercial strategy was not free of difficulties for Korean firms as the prices of memory chips tend to fall rapidly with their technical obsolesce. Moreover, as their Japanese counterparts, Korean firms were sometimes sued by US semiconductors manufacturers for their alleged noncompliance with intellectual property rights.[250]

In 1986, partly in response to the emerging lawsuits filed by US companies for the alleged infringement of intellectual property rights and partly in response to the demand from local firms, the Korean state sponsored and co-financed the creation of the research consortium Electronics and Telecommunications Research Institute (ETRI). This project brought together the largest firms in a concerted effort for technological 'leapfrogging'. This project, which attempted to develop locally Very Large-scale Integrated Circuits, allowed Korean firms to narrow the technological gap with their US and Japanese competitors in DRAMs production. In addition, in order to strengthen their technological capabilities, Korean firms also invested heavily in the creation of R&D centres in the Silicon Valley.[251] The labour-force necessary to undertake these activities was more abundant there than in Korea. Yet, despite all these efforts, in the mid-1980s most of the sector's workforce (around 80%) was still employed by MNCs or domestic firms subcontracted to assemble and package semiconductors for foreign producers while the other fifth were employed by domestic firms, mostly the big three, both fabricating wafers and assembling them.[252] Furthermore, an important part of

[249] See Mathews and Cho (2000: 125).
[250] See Bello and Rosenfeld (1992: 157-61); Hong (1997: 106-7).
[251] See Hong (1997: 99); Mathews and Cho (2000: 121-9); Graham (2003: 68-9).
[252] Calculated from Henderson (1989: 59, 64-6).

wafer fabrication by the latter was done under OEM arrangements between them and 'merchant' firms in the USA.[253]

Nonetheless, when the early 1990s computer boom began, Korean firms were launching DRAM products similar to those produced by their foreign competitors, although still engaging in alliances of some sort with foreign partners for this purpose, or directly purchasing the technology.[254] It was estimated that in 1992 and 1993 the Korean semiconductor industry had to spend 14% and 16% of its annual turnover on royalty payments.[255] It was then apparent that Korean firms did not have access to an industrial labour-force capable of pursing independent vanguard technological development in semiconductors manufacturing, not even in the relatively simple DRAM market where innovations are mainly based on production and process rather than on product technologies. In 1994, there were only 252 PhD researchers in the entire Korean semiconductors industry. As had been the case during the 1970s 'big push' to heavy industry, different state departments began to plan and implement policies to address this situation and rapidly upgrade the skills of the local workforce.[256]

In spite of these limitations, by the mid-1990s, Korean firms were becoming the largest and most efficient DRAM manufacturers in global markets, displacing their Japanese counterparts ten years after these had displaced their US competitors. The further standardisation of production processes, in part resulting from continual advances in the microelectronics industry, and the improved qualification of the local workforce, made that possible. The automation of materials and information handling taking place during the 1990s greatly reduced the skills required from operators and technicians in semiconductors fabrication, by limiting their involvement in productive decision-taking and, thus, increasing the monotonousness of their work.[257] Korean firms then reached the average levels of labour productivity of their US and Japanese counterparts at much lower wage cost.[258]

Korean firms, however, did not become world-market leaders. To begin with, when they achieved full-scale operations and finally caught up technologically with global leaders in Japan and the USA, there were many competitors supplying state-of-the-art DRAMs, most based in other Southeast-East Asian countries, notably Taiwan

[253] See Mathews and Cho (2000: 124-33).
[254] See Mathews and Cho (2000: 137-40); Graham (2003: 69).
[255] See Ernst (1998: 21).
[256] See Hong (1997: 110-2).
[257] See Brown and Campbell (2001).
[258] See Baily and Zitzewitz (1998: 265).

and Malaysia. Furthermore, by then, it was apparent that, even if constantly upgraded in terms of memory power, DRAM chips were becoming a high-tech 'industrial commodity' increasingly sold on the basis of low price rather than advanced technological features.[259] Neither were Korean firms at the vanguard of memory chips production technologies and design, capable of capturing the so-called innovation quasi-rents in a market where prices fall rapidly throughout the product's life-cycle.[260]

In 1995, when the global market of semiconductors reached its peak, 91% of Korean semiconductors production was concentrated in mass produced, low-end memory chips. The insufficient local supply of world-class design engineers limited the domestic production of higher value-added microchips.[261] Almost all equipment and high value components were imported, mainly from the USA and Japan.[262] Furthermore, despite the massive increase in DRAM manufacturing, 50% of the industry's revenue came from low value-added ICs assembly and testing and the production of relatively simple discrete devices such as diodes and transistors.[263] One year later, the glut in the global market of semiconductors resulted in the massive fall in the price of DRAMs, not only severely affecting the profitability of semiconductors producers but also constituting one of the major causes of the 1997-98 economic and financial crisis in Korea.[264] Semiconductors had become Korea's leading export.

As with most of the previous periods of economic turmoil, the aftermath of the crisis saw consolidation in the semiconductors sector. Hyundai and LG merged to become Hynix which was later bought by market leader US's Micron. Only Samsung remained an independent producer of semiconductors, probably because of its world leadership in consumer electronics manufacturing where most of its output was destined. Semiconductors production in Korea expanded sharply after slump, with firms getting increasingly involved in the independent design of their own microchips. The bases of this recovery, however, have remained contradictory and limited. First, memory chips continued dominating the product mix despite the intention of companies to reverse this situation. Secondly, if local design capabilities improved significantly, this was largely helped by the further automation and modularisation of design activities which manifested themselves in the simplification/standardisation of *specific* stages and

[259] See Graham (2003: 71).
[260] See Cho et al. (1998: 499); Baily and Zitzewitz (1998: 265); Keller and Pauly (2001: 11-2).
[261] See McKinsey (1998) cited Graham (2003: 121).
[262] See Ernst (1998: 27-8).
[263] See Mathews and Cho (2000: 43).
[264] See Noland (2000: 196-98); Baily and Zitzewitz (1998: 263).

types of design processes.[265] Design software, basic chip architecture and advanced manufacturing equipment, as well as the capacity to design and produce complex semiconductors like microprocessors and ASICs, have not been yet developed in Korea.[266]

In summary, the integration of Korean semiconductors producers in the industry's global division of labour has, as in the cases of steel and automobile manufacturing, ridden on the possibility of using the country's *relatively* cheap and disciplined (and thus productive) workforce to perform different tasks either in the manual assembly of components, as an appendage of the machinery or in engineering and design activities for world-markets-oriented standardised productions.

The Brazilian semiconductors industry

The Brazilian semiconductors industry was born in the 1950s, when MNCs specialised in the production of electronic consumer goods, like radios and TV sets, for the domestic market began a process of substitution of imports of components, like transistors and diodes, with local productions.[267] As in the rest of the expanding industrial sector, the process of normal valorisation of capital invested in this industry was based on the appropriation of a portion of the land rent rather than in the access to cheap and disciplined labour, as in 1960s Korea. The combination of an overvalued exchange rate (for imports of equipment, key inputs and core materials) and market protection, together with the subsidised provision of public utilities and tax breaks, constituted the main forms of land rent appropriation by individual capitals in the Brazilian electronics industry. This complemented the surpluses normally available for appropriation in the sector and thus sustained their process of accumulation despite their internationally high production costs. As in Korea, the emerging semiconductors industry largely concentrated on the less skill- and technology-intensive products and stages of the production processes, namely, the assembly of simple devices. Nevertheless, already in 1968, well before Korean efforts in the field began, the first

[265] See Ernst (2005); Brown and Linden (2005: 299-315).
[266] See Joo (2005: 21).
[267] See Sousa Melo et al. (2001: 13); Ripper Filho (2004: 1-2).

steps in the domestication of semiconductors manufacturing were taken with the creation of a Microelectronics Laboratory at the University of São Paulo.[268]

Despite these public and private sector efforts, it was only in the 1970s, under the policy umbrella of the NDP II destined to promote the domestic capital goods industry, that some of the leading global semiconductors manufacturers, including Fairchild Semiconductors, Texas Instruments, Phillips, Siemens and NEC, established subsidiaries in Brazil to assemble and test low-tech ICs. On the one hand, the expansion of electronic goods consumption had enlarged the domestic market for micro-components. On the other, new pecuniary incentives were added to the already existing ones, notably through the activities of the newly created Telebrás System (the federal state-owned telecommunications holding company). Telebrás became thereafter a key player in the import-substituting effort in the microelectronics industry. First, as most SOEs at the moment, when purchasing equipment, Telebrás not only gave priority to local suppliers but also promoted the development of the related local components industry. Secondly, in 1976 Telebrás created the Research and Development Council (CPqD), in charge of developing telecommunication technologies in partnership with local companies. These efforts included, among others, a project to design ASICs used in telecommunications equipment. Their 'fabrication', however, was sourced abroad. There was then no foundry in the country capable of producing them.[269]

During the latter part of the 1970s, as the land rent and the net inflow of credit available to support capital accumulation expanded, the Brazilian state pushed further towards 'industrial deepening'. As part of this strategy, the National Informatics Policy (PIN) was launched to coordinate policies for the development of the local microcomputers industry.[270] As in other sectors, state subsidies and market reserves were then adopted for that purpose. In 1979, the PIN was absorbed by the Special Secretariat for Informatics (SEI), also in charge of promoting the local development of automation, software and electronics components (including semiconductors). Under these conditions, the Brazilian electronics and micro-components industries grew strongly during the late 1970s and most of the first part of the 1980s.[271]

Despite these advances, the specific limitations to the development of the local microelectronic components industry in general and the semiconductors in particular

[268] See Sousa Melo et al. (2001: 14).
[269] See Sousa Melo et al. (2001: 14-5).
[270] See Tigre (1987) on state efforts to develop the local microcomputers industry.
[271] See Sousa Melo et al. (2001: 14-5).

became already evident in the contradictory character of sectoral policy. While the aforementioned actions were undertaken, other policies implemented simultaneously were largely detrimental for the normal development of the industry. In 1967, the Manaus free trade zone (MFTZ) was established, and in 1972 was transformed into an industrial district. As Korea's Massan EPZ, the MFTZ mainly hosted electronics firms. However, in sharp contrast to other contemporary developing country experiences, particularly in Korea, the MFTZ was designed to supply the domestic, rather than export, markets. Electronics companies established there, most of them foreign-invested, were allowed to import components and equipment duty-free.[272] This 'regional promotion' policy was in practice a blow to the growth of the local production of semiconductors. It reduced the market for mass-produced, standardised low-end chips for the electronic consumer goods industry, the segment of the market first developed in all 'late comers' to the sector (e.g. Japan, Korea).[273]

During the 1980s, the Brazilian state, through the SEI, stepped up its promotion of the local semiconductors industry, as its Korean counterpart was concurrently doing. In 1985-86, the Brazilian authorities selected three companies, Itaú, Docas and Sharp, to perform the full cycle in the production of ICs in Brazil. The Technological Centre for Informatics, created to support the local development of software, was charged with production of the lithographic masks to be used by the three companies to print the circuits into silicon wafers.[274] Despite these concerted efforts at expanding local productive capacities, by the second part of the 1980s, Brazilian production of ICs was still in an incipient stage. The largest part of local production still focused in assembling and testing discrete components, like diodes, capacitors and transistors. A few firms produced simple ICs, while almost the entire local demand for microprocessors, memory chips and ASICs was satisfied through imports.[275]

Through the late 1980s, however, while the Korean semiconductors industry was beginning to take-off, Brazilian efforts in microelectronics would start to fall apart. Despite the strong support granted to it under the umbrella of the 1984 Informatics Law, the agreement between the government and the private sector to fund PNI's actions towards the development of the aforementioned projects fell through after 1986 as the

[272] See Sousa Melo et al. (2001: 15); Ripper Filho (2004: 14).
[273] See Sousa Melo et al. (2001: 16)
[274] See Sousa Melo et al. (2001: 16-7); Ripper Filho (2004: 9-10).
[275] See Sousa Melo et al. (2001: 14); Carvalho (2006: 102-4).

economy entered in a deep crisis.[276] Involved companies desperately sought for niches in which to specialise. Only one of them, Sharp, had managed to master the full cycle in the production of ICs, although through its purchase of RCA's facilities to produce low-complexity digital circuits when the US subsidiary was exiting the Brazilian market.[277]

In the 1990s, as the land rent available for appropriation manifested itself incapable of sustaining a highly diversified and deepened industrial sector, the microelectronics industry suffered its strongest blow. The process of trade liberalisation, notably for industrial equipment, components and parts, combined with a strongly overvalued exchange rate, killed the microelectronics industry. As cheaper imports flooded the domestic market, firms involved in the fabrication of semiconductors disappeared, or concentrated in back-end stages (i.e. assembly), in niche productions or in providing related services.[278] Support granted to firms established in the MFTZ were generalised to the rest of the consumer electronics industry. On the contrary, electronic goods assemblers kept enjoying market protection, subsidies and, now, low-cost components and equipment. Local content requirements in exchange for public subsidies were lowered and their enforcement relaxed. [279] Moreover, the formation of the Mercosur, where almost all exports of electronic goods have been destined, enlarged their protected markets.[280]

If sharp market opening destroyed, in the early 1990s, the local production of micro-components used in consumer-electronic goods, the privatisation of Telebrás System in 1998 gave the last blow to the production of semiconductors used in telecommunications equipment. The new owners, most of them foreign companies, shifted their demand of equipment from local suppliers to their international partners, thus indirectly reducing the demand for domestically produced, relatively complex semiconductors. The CPqD was transformed into a not-for-profit organisation and abandoned almost completely the development of equipment and semiconductor components. Thereafter, the CPqD has increasingly concentrated in the development of software for the telecommunications industry and the provision of related services.[281]

[276] This experience sharply contrasted with the contemporary Korean efforts in the ETRI consortium.
[277] See Sousa Melo et al. (2001: 17).
[278] Fairchild Semiconductors, for instance, had to close down its recently installed and unused Campinas manufacturing facility. See Ripper Filho (2004: 2).
[279] See Sousa Melo et al. (2001: 17-9).
[280] See Bonelli and Castelar Pinhero (2008: 82-5).
[281] See Lourdal, et al. (2006: 310-11).

Yet, there was, however, a notable exception to these negative trends. In 1997, when the Brazilian economy was in its third year of relatively robust growth, global leader Motorola (later Freescale Semiconductors) established a R&D centre in the high-tech area of Campinas (São Paulo) to design microchips for clients in the Latin American automotive and telecommunications sectors. Helped by the sharp devaluation of the national currency and the contraction of real wages during 1999-2003, Freescale managed to engage in the development of projects and design of circuits for export markets. Though marginal in international terms, Freescale's centre in Campinas has grown continuously, absorbing part of the personnel previously employed by CPqD.[282] Based on this experience, a new set of policies began to be implemented to support the industry again, especially the production and design of ASICs. These included the *National Microelectronics Plan* (2002) and the *Industrial, Technology and Foreign Trade Policy* (2004).[283] Moreover, as the magnitude of the land rent expanded strongly after 2005, state efforts to develop an indigenous semiconductors industry resurfaced. In 2008, the publicly-owned CEITEC SA was founded to design and produce ASICs, in an initiative that closely resembled the ISI projects implemented during the 1970s.[284]

The long-term prospects of these policies are far from clear. To begin with the microelectronics industry faces the severe lack of highly-trained professionals. In 2001, there were only 198 individuals with postgraduate education (114 with a doctoral degree) working in the Brazilian microelectronics industry, either in public sector institutions or private companies. The supply of technicians with knowledge in physics and chemistry, required in the production of ICs, was even more deficient. At that time, there were only 86 engineers and 34 technicians working in the industry.[285] In addition, due to the increasing overvaluation of the currency after 2004, the cost of the local labour-force in current US$ has become as expensive as that of established global leaders in East Asia. In 2006 hourly compensation costs for production workers in 'Computer and Electronic Product Manufacturing' in Brazil were already higher than in Taiwan (US$ 7.03 v US$ 6.76), the leader among developing countries production ASICs, the sector of the industry in which Brazilian policy makers aim to enter.[286] In 2008, wages paid to chip design engineers working for CEITEC in Brazil were as high

[282] See Sousa Melo, et al (2001: 21); Carvalho (2006: 103)
[283] See Carvalho (2006: 105-08)
[284] See CEITEC SA (2011).
[285] See Carvalho (2006: 113-4).
[286] See BLS (2009).

as those paid in Taiwan and Korea, where the industry is already largely consolidated.[287] Finally, CEITEC's equipment has been apparently donated by Motorola and is reputedly well away from the state-of-the-art facilities used by its Taiwanese counterparts.[288]

In summary, the Brazilian semiconductors industry developed, as the rest of the local industrial sector, under strong state support, market protection and the possibility to import equipment and key inputs with an overvalued currency. These policies mediated the appropriation by capital in this sector of a portion of the land rent, and eventually also of credit inflows. As the rest of the local industrial sector, its development and growth performance became, since its origins, dependent on the evolution of the land rent available to support it and thus compensate for the difference between local and global markets production costs.

2.3) Summary and conclusions

The present chapter had two main goals. First, it aimed to present historical and analytical evidence in support of the hypothesis that the structural change undergone by Korea since the mid-1960s, and its transformation into a major global supplier of industrial goods, has resulted from specific transformations in global markets leading to the emergence of the NIDL sketched in the introduction of this thesis. In particular, it was claimed that the emerging technological base has led to a structure of skill requirements in large-scale industries that could be particularly satisfied with a labour-force with the characteristics of the East Asian, notably the Korean. In essence, these technological transformations, associated with the computerisation of the calibration of machine-tools and the automation of the assembly line, have tended to simplify several labour processes in the shop-floor in a way that they could be efficiently performed by a less skilful but cheaper workforce. The discipline of Korean labour, *vis-à-vis* other

[287] The yearly costs of employing a chip design engineers in Korea and Taiwan were around 65,000 and 60,000 US dollars, respectively, including office infrastructure, wages and benefits (Ernest, 2005: 56). In 2003-05, the annual base salary for a chip design engineer in the USA, Japan, Taiwan and India was around 82,000, 60,000, 30,000 and 15,000 US dollars, respectively. In 2008-09, Brazil's CEITEC, the newly established state-owned company specialised in chip design and manufacturing, was offering wages of R$ 70,200 per year for informatics systems analysts. This was approximately US$ 38,000 at the market exchange rate and 21,000 US$ at PPP exchange rate. When employer's contributions are added, the cost raises to 53,500 and 29,300, respectively. The year, CEITEC offered to pay R$ 221,000 for process engineering managers; 120,500 and 66,000 at the current and PPP exchange rates, respectively without the roughly 40% employer contributions.

[288] See Carvalho (2006: 122).

equally cheap national labour-forces, resulting from its historical origins and contemporary political circumstances, accentuated this newly emerging 'competitive advantage'. The second purpose of this chapter was to present historical and analytical evidence supporting the argument advanced above with respect to the specific characteristics of the Brazilian economy, namely, that capital has accumulated there through the appropriation of a portion of the land rent and its complementary sources of extraordinary social wealth.

In order to support these claims, the chapter identified the main characteristics and manifestation of key technological developments in the global steel, automobile and semiconductors industries since the 1960s and their impact in determining the respective and contrasting competitive capabilities of Brazilian and Korean companies in these sectors. These three industries were chosen not only because they have been at the centre of both countries' industrial development, but also, and mainly, because they together carried out the most important transformations in production processes in large-scale industrial productions in the last four decades or so.

Through the analysis of the evolution of the Korean and Brazilian steel, automobile and semiconductors industries, the chapter advanced three main conclusions. First, that Korean competitiveness in world markets for steel, cars and memory chips, and the bases for the normal valorisation of capitals in these industries, has sprung from the relative cheapness of its workforce and from its particularly high productivity for specific, simplified portions of work processes in these sectors. This was irrespective of the technical and commercial singularities of each of the three sectors. Secondly, it was shown that the normal valorisation of capital in the Brazilian automobile and semiconductors (and also non-integrated steel) industries rested on the appropriation of a portion of land rent through the combination of specific state policies and institutions. For a large part of the period under study, these included, among others, the activities of state-owned integrated mills selling low-cost steel to downstream industries, as in Korea, and buying equipment and construction services at inflated prices from upstream sectors. This form of capital accumulation, it was shown in the analysis, lifted strong barriers to the use of vanguard technology and thus hurt industrial capital's international competitiveness in these sectors of production. This, too, was irrespective of the technical and commercial singularities of each of the three sectors.

Appendix 3.1

Measuring the determinants of the rate of valorisation of industrial capital in the Korean, Japanese and Brazilian steel industries

Chapter three presented a brief review of the specific transformations of the worldwide steel, automobile and semiconductors industries since the 1960s and then put forward an interpretation on the differentiated integration of Korean and Brazilian firms in these sectors' global division of labour. In so doing, the chapter identified the specific sources of profitability of Korean and Brazilian firms in these branches of industry. This appendix presents the methodology used for the measurement of the determinants and rate of profitability of individual capitals in the Korean and Brazilian steel industries. It also presents the results of the measurement of the concrete rate of profit of specific representative capitals in the steel under different hypotheses.

1) The measurement

The measurement of the annual rate of profit of a specific industrial capital consists of comparing the mass of profits realised through the year (i.e. the difference between the revenues obtained from the sale of the output and all the costs directly or indirectly involved in its production) with the capital advanced to obtain them. The rate of profit measures then the valorisation capacity of each individual capital.

Several methods have been derived from the theoretical foundations of mainstream economics to represent the rate of profit of specific industrial capitals. The most widely used is the practice of representing it by the so-called Internal Rate of Return (IRR). The IRR is the annual rate of compound discount that balances the net present value of an investment's income stream. The inadequacy of the IRR to represent the rate of profit accurately consists in its incapacity to account for the specifically determined turnover period of each component part of advanced capital.

For instance, in the computation of the IRR, the portion of the fixed capital consumed that returns after each cycle of production is discounted by the interest rate and separated. This means that to reflect the turnover of fixed capital accurately, the IRR would either produce different annual rates of profit or, alternatively, would require

different output prices to sustain a constant rate of profit. Both are obviously in contradiction to the normal pattern of accumulation of any industrial capital.

When considering the circulating part of capital advanced for valorisation, the inaccuracies multiply. First, the method treats differently the profits materialised in the circulating part of capital with a turnover period shorter than one year than those with a turnover period equal to one year. While the former are capitalised, the latter are separated from the capital in process of valorisation. This inconsistency is not free of problems in the measurement process; indeed, they manifest in different rates of profit for capitals of the same magnitude according to the turnover speed of their circulating part. Secondly, the procedure implicit in the method of computation of the IRR is based on the assumption that all different component parts of circulating capital have the same turnover period and do not overlap. This extremely strong assumption with no real plausibility distorts the exact magnitude of circulating capital advanced for valorisation.

These inconsistencies are not just a problem of measurement. On the contrary, behind them lie the very neo-classical foundations of the IRR model, notably its use of the cycle of valorisation of capital lent at interest (capital whose valorisation does not involved a productive process) to represent the cycle of valorisation of industrial capital.

In order to overcome these difficulties, a model developed by Iñigo Carrera (1996), based on Marx's analysis of the process of turnover of industrial capital presented in Volume II of *Capital*, is used here. This model avoids the above mentioned technical problems by computing fixed and circulating parts of advanced capital through the register of the movement of each portion through its specific turnover process. In the case of circulating part, the amount of capital advance is equal to the addition of the money-capital advanced in each different portion of circulating capital by the number of times it turnover through the year.

$$Kc = \sum_{i}^{n} Kc_i / v_i$$

Where,

Kc is circulating capital disbursed for the year;

Kc_i is each portion of the circulating capital;

v_i is specific turnover speed of each portion of the circulating capital.

On its turn, the amount of fixed capital advanced for valorisation is computed as the average value through the useful life of the instruments that compose it.

$$Kf = \sum_{i=1}^{n} \sum_{j=1}^{m} [\left(Kf_i - \frac{Kf_i}{m}\right) * (j - i)]/m$$

Where,

Kf_i is the amount of capital disbursed for the year in the instrument *i*;

i is the number of instruments of production;

j is the number of productive circuits in which the instrument *i* is used;

m is useful life of instrument *i* measured in productive circuits.

When the number of circuits for which an instrument is used is relatively large, its average value through its useful life tends to be equal to its replacement value divided by two.

$$Kf = \sum_{i}^{n} \frac{Kf_i}{2}$$

Total advanced capital is thus:

$$K = Kf + Kc$$

2) The data

The following variables are necessary to calculate the annual rate of profit and the other variables estimated by the model:

1) Value (at replacement cost) and useful life of fixed capital invested in productive facilities

2) Production costs per unit of output

3) Value of sales

4) Output produced

5) Turnover speed of circulating capital

6) Production time

7) Amount and conditions of credit offered by suppliers and extended to consumers

The following sources were used to obtain the base data:

Korea:

1) POSCO (2004)

2) Barnett D. and R. Crandall (1986)

3) Park, Y (1997)

4) US Bureau of Labor Statistics (2009)

5) Barnett. D and L. Schorsch (1983)

Brazil:

1) BNDES (1987)

2) Instituto Brasileiro de Siderurgia, various years.

3) Mendes de Paula, G. (1993)

4) Fisher, B., et al. (1988)

5) D'Costa, A. (1999)

Parameters and assumptions of the model:

1) Based on data on merchandise turnover speed published in the Korean Economic Statistics Yearbook and Conjuntura Econômica (Brazil), circulating capital was assumed to turn over six times per year.

2) The production process was assumed to last one month.

3) It was assumed that producers pay their inputs in cash and sale at two months credit.

3) Results of the measurement

The model produces information on the following variables:

1) Value of fixed capital advanced

2) Value of circulating capital advanced

3) Turnover speed of circulating and fixed capital

4) Value of capital valorised

5) Value of capital used during the year

6) Value of annual profit

7) Annual rate of profit

The following table presents the results of the measurement of the profitability of individual capitals in the Korean, Japanese and Brazilian industries in different points in time. These measurements are presented for different hypothesis related to the concrete conditions of valorisation of individual capitals in these countries. The first line of the table presents the results for POSCO's Pohang plant in 1985. It presents the firm's rate of profit for the capital advanced in the Pohang plant for three hypothesis regarding output prices. The rate of profit is calculated valuing the output at the prices actually sold, at the prices the company charged for its exports and at those prevailing in the global markets for equivalent products. It is also calculated for two hypothesis regarding plant's useful life: fifteen and twenty years. The last column of the first line presents the average rate of profit in the manufacturing sector in Korea in 1985. The second line of the table presents the same set of measurements for POSCO's Gwangyang plant in 1995. The third line of the table presents the same sets of measurements for the aggregate of both plants in 2003. The fourth line in the table presents the rate of profit of a representative plant with the average productive capacity in the Japanese steel industry in 1985. It is calculated at average capacity utilisation in that and at full capacity. It is also calculated for two hypothesis regarding equipment's useful life: fifteen and twenty years.

The second part of the table presents the measurement results for the Brazilian steel industry. The first two lines present the rate of profit estimated for Tubarão Steel Company (CST) in 1985 under two hypotheses regarding construction costs and plant's useful life. The third line shows the rate of profit of estimated for Açominas under two hypotheses regarding the plant's useful life. The last three lines show the rate of return on capital invested (i.e. the rate of profit) for Brazilian steel producers in the flat (ex-state-owned) sector calculated by McKinsey (1998) for 1995. It was calculated for three different hypotheses regarding the magnitude of capital advanced for valorisation: at 'replacement cost', 'current market value' and 'privatisation values'.

Table A3.1.1

Rates of profit in the steel industry. Different hypotheses.

Year	Plant / company	Actual prices		Export prices		International prices		Manufacturing
				Useful life				
		15	20	15	20	15	20	
1985	Pohan	1.40	4.27	22.33	25.20	18.82	21.69	14.8
1995	Gwangyang	2.26	5.15	30.05	32.94	22.29	25.17	10.8
2003	POSCO	5.00	7.95	17.31	20.26			9.7

		Actual capacity		Full capacity	
		Useful life			
		15	20	15	20
1985	Japan average	8.45	11.50	21.94	24.82

		Actual capacity			
		Useful life			
		15	20		
1985	CST	-2.39	0.73		14.8
1985	CST (1)	5.26	8.33		
1985	Açominas	-1.80	1.37		
1995	Ex-SOEs (2)			23.4	5.5
1995	Ex-SOEs (3)			3.6	
1995	Ex-SOEs (4)			10.2	

Source: See text
Notes: (1) = at international construction costs; (2) = at privatisation values; (3) = at replacement values; (4) = at current market values

Appendix 3.2

Measuring the rate of valorisation of industrial capital in the Korean and Japanese automobile industries

Due to lack of sufficient information, the model presented in Appendix 3.1 cannot be used to analyse the determinants and magnitude of the rate of profit of individual capitals in the motor-vehicle industry. The companies' balances were, instead, used to measure the average profitability of one Korean representative firm, Hyundai, and the global leader, Toyota. These companies' balances for the period 1985-1996 were published in Storey (1997).

In order to calculate the rate of profit of Hyundai and Toyota in each specific year, the operational surpluses earned (plus interests gained) during that year were divided by the residual value of the capital advanced for valorisation. The latter was estimated by adding to the stock of capital of the first year the flow of new investments and deducting the flow of depreciation of each portion of capital existing in the first year of the series and added to it thereafter. The consumption of fixed capital (i.e. the rate of depreciation) was assumed to be 6.67% per year (i.e. 15 years of useful life for the equipment). Toyota's stock of fixed capital in 1985 was considered to be in the middle of its useful life. The value of the stock of fixed capital in 1985 was divided by 2. Hyundai's stock of fixed capital in 1985 was considered to be at the beginning of its useful life. A new modern plant was opened in 1985 in the city of Ulsan with the capacity to produce 300,000 units per year, an amount equal to that registered in balances of the company during that year. The following table presents the basic data and results.

Table A3.2.1

Profitability of Toyota and Hyundai

	TOYOTA					HYUNDAI				
	OP	OP + I	K	OP / K	(OP+I)/K	OP	OP + I	K	OP / K	(OP+I)/K
1983	187	277	3,219	5.8	8.6					
1984	498	594	3,315	15.0	17.9					
1985	698	819	3,607	19.4	22.7	82	90	966	8.5	9.3
1986	509	639	3,437	14.8	18.6	109	117	917	11.9	12.8
1987	373	498	3,874	9.6	12.9	449	449	1,673	26.8	26.8
1988	463	601	4,273	10.8	14.1	446	446	2,362	18.9	18.9
1989	476	713	5,936	8.0	12.0	482	482	1,868	25.8	25.8
1990	757	1,061	6,926	10.9	15.3	539	539	4,235	12.7	12.7
1991	1,134	1,376	6,931	16.4	19.9	485	485	5,252	9.2	9.2
1992	436	654	7,872	5.5	8.3	373	373	5,896	6.3	6.3
1993	352	506	7,714	4.6	6.6	408	408	6,330	6.4	6.4
1994	224	355	8,108	2.8	4.4	704	704	7,146	9.8	9.8
1995	252	335	8,420	3.0	4.0	951	951	8,089	11.8	11.8
1996	402	491	8,291	4.8	5.9	1,040	1,040	8,916	11.7	11.7
1997	728	806	9,274	7.9	8.7					
average				9.29	11.98				13.32	13.47

Note: OP = Operating profits; I = Interest earned; K = Fixed capital

Appendix 3.3

Brazilian, Korean, Japanese, Argentinian and Mexican automobile industries: base data

This appendix presents base time-series of the Brazilian, Korean, Japanese, Argentinian, and Mexican motor-vehicle industries. The goal here is to compare their average labour productivity and labour costs per unit of output. The former were constructed dividing the total amount of motor-vehicle units annually produced by the number of workers employed in the industry (both in assembly and components sectors) and the average number of hours worked in the sector. Tables A3.3.1 and A3.3.2 present the data for the Japanese, Korean and Brazilian motor-vehicle industries between 1969 and 2007 while table A3.3.3 does it for the Brazilian, Mexican and Argentinian between 1974 and 2007.

Table A3.3.1

Motor-vehicle industry - totals (includes terminals and parts producers)

	Production units (thousands)			Employment (thousands)			Output per worker		
	Japan	Korea	Brazil	Japan	Korea	Brazil	Japan	Korea	Brazil
1969	4,675		354	561			8.3		
1970	5,289		416	581			9.1		
1971	5,811		517	575			10.1		
1972	6,294		622	605			10.4		
1973	7,083		750	632			11.2		
1974	6,552		906	612		304	10.7		3
1975	6,942		930	604	21	335	11.5		2.8
1976	7,842	50	987	622		338	12.6		2.9
1977	8,514	85	921	631		347	13.5		2.7
1978	9,269	159	1,064	639		394	14.5		2.7
1979	10,038	204	1,128	652	69	400	15.4	3	2.8
1980	11,482	123	1,165	683	60	412	16.8	2	2.8
1981	11,731	133	781	698	56	302	16.8	2.4	2.6
1982	11,347	163	859	696	51	327	16.3	3.2	2.6
1983	11,899	221	896	700	59	312	17	3.8	2.9
1984	12,378	265	865	720	65	348	17.2	4.1	2.5
1985	12,271	378	967		79	383		4.8	2.5
1986	12,260	602	1,056		99	421		6.1	2.5
1987	12,249	980	920		125	394		7.9	2.3
1988	12,700	1,084	1,069		148	401		7.3	2.7
1989	13,026	1,129	1,013	746	158	428	17.2	7.1	2.4
1990	13,487	1,322	914		176	403		7.5	2.3
1991	13,245	1,498	960		183	365		8.2	2.6
1992	12,499	1,730	1,074			337			3.2
1993	11,228	2,050	1,391			343			4.1
1994	10,554	2,312	1,581			344			4.6
1995	10,196	2,526	1,629		221	319		11.5	5.1
1996	10,347	2,813	1,804			292			6.2
1997	10,975	2,818	2,070			302			6.9
1998	10,050	1,954	1,586		193	264		10.1	6
1999	9,895	2,843	1,357	705		257	14		5.3
2000	10,145	3,115	1,691	683	204	273	14.9	15.3	6.2
2001	9,777	2,946	1,817	664		273	14.7		6.6
2002	10,257	3,147	1,792	646		288	15.9		6.2
2003	10,286	3,178	1,828			338			5.4
2004	10,512	3,469	2,317	725	247	363	14.5	14.1	6.4
2005	10,800	3,699	2,531		254	373		14.6	6.8
2006	11,484	3,840	2,611			380			6.9
2007	11,596	4,086	2,970			408			7.3

Table A3.3.1

Motor-vehicle industry - totals (includes terminals and parts producers)

	Annual hours worked per employee			Hours per car					
	Japan	Korea	Brazil	Japan	Japan*	USA*	Korea	Korea*	Brazil
1969	2,329		2,144	279	280	173			
1970	2,310		2,145	254	254	189			
1971	2,268		2,129	225	224	162			
1972	2,250		2,112	216	217	169		3,033	
1973	2,258		2,096	202	203	167		2,244	
1974	2,128		2,080	199	200	182		2,378	698
1975	2,030		2,064	177	176	174		1,475	742
1976	2,112		2,048	168	173	163		1,360	702
1977	2,143		2,032	159	158	165		1,270	764
1978	2,125		2,016	147	146	170		1,006	746
1979	2,167	2,691	2,000	141	147	179	905	917	710
1980	2,216	2,750	1,985	132	139	202	1,348	1,255	702
1981	2,200	2,780	1,974	131	138	204	1,175	1,118	764
1982	2,153	2,783	1,963	132	140	204	870	839	746
1983	2,168	2,815	1,952	128	139	163	748	725	680
1984	2,220	2,812	1,942	129	141	165	685	670	780
1985	2,207	2,802	1,931		139	155	587	572	765
1986	2,209	2,852	1,920		133	154	467	453	765
1987	2,214	2,815	1,910		132	173	358	348	818
1988	2,211	2,743	1,899		132	174	374	352	713
1989	2,190	2,640	1,889	125	132	170	370		798
1990	2,155	2,594	1,879				345		827
1991	2,086	2,568	1,874				314		712
1992	2,008	2,539	1,869						586
1993	1,923	2,539	1,865						459
1994	1,925	2,540	1,860						404
1995	1,946	2,564	1,855				224		363
1996	1,968	2,521	1,850						299
1997	1,989	2,491	1,846						269
1998	1,936	2,400	1,841				237		306
1999	1,925	2,466	1,841	137					349
2000	1,968	2,483	1,841	132			163		298
2001	1,946	2,465	1,841	132					277
2002	1,979	2,428	1,841	125					295
2003	1,980	2,422#	1,841						340
2004	1,967	2,411#	1,841	136			172		288
2005	1,954	2,384#	1,841				163		271
2006	1,964	2,342#	1,841						268
2007	1,965	2,317#							

Sources: Watanabe (1987: 42); Williams (1994: 61-2); Fuss and Waverman (1992: 32-6); Fischer (1988: 99); Bae (1987); ANFAVEA (2008); Korea Automobile Manufacturers Association (2007); Japan Automobile Manufacturers Association (2008); Groningen Growth Centre (2006); Bureau of Labor Statistics; Brazilian Institute of Geography and Statistics, *Annual Industrial Survey*, various issues.
Note: * = Williams (1994) estimates; # = calculated using the evolution of hours worked in manufacturing.

Table A3.3.2

Motor-vehicle industry - Labour costs

	US$ per hour			US$ per car			PPP US$ per car	
	Japan	Korea	Brazil	Japan	Korea	Brazil	Korea	Brazil
1969	1.0		1.1	291				
1970	1.2			304				
1971	1.4			322				
1972	1.9			406				
1973	2.5		1.6	512				
1974	3.2		1.7	630		1,213		949
1975	3.8			672				
1976	4.1		2.2	695		1,525		1,186
1977	5.0		2.5	787		1,947		1,433
1978	7.2		2.8	1,055		2,093		1,574
1979	7.4		3.1	1,037		2,197		1,890
1980	7.3			960				
1981	8.0		4.0	1,051		3,046		3,006
1982	7.7	1.4	4.2	1,021	1,252	3,120		3,234
1983	8.5	2.0	3.0	1,087	1,495	2,045		2,806
1984	8.5		2.4	1,103		1,869		3,007
1985								
1986								
1987								
1988			4.9			3,527		3,947
1989			9.1			7,273		6,669
1990			7.9			6,539		4,612
1991								
1992			8.7			5,121		4,545
1993			10.4			4,780		4,150
1994		8.1	11.0			4,462		2,993
1995		9.9	14.2		2,218	5,158	2,428	2,823
1996	28.9	11.8	12.9			3,852		2,191
1997	27.2	9.7	12.4			3,345		2,040
1998	25.5	7.4	12.0		1,759	3,673	2,881	2,378
1999	29.0	9.7	7.7	3,973		2,697		2,683
2000	30.0	10.8	8.1	3,980	1,753	2,420	3,292	2,359
2001	27.2	9.9	6.7	3,589		1,861		2,210
2002	26.4	12.4	5.8	3,287		1,711		2,210
2003	28.6	13.1	6.1			2,087		2,442
2004	30.5	14.9	7.0	4,134	2,549	2,028	4,049	2,128
2005	30.3	17.0	9.1		2,783	2,459	4,454	1,978
2006	28.5	19.6	10.9			2,920		1,987
2007	28.3	21.7	13.1			3,304		1.951

Source: Table A3.3.1

Table A3.3.3

Latin American Motor-vehicle industry

	Production units			Assembly employment			Output per worker		
	Brazil	Mexico	Argentina	Brazil	Mexico	Argentina	Brazil	Mexico	Argentina
1974	905,920		286,312	104,072		57,400			4.99
1975	930,235		240,036	104,556		54,556	8.90		4.40
1976	986,611		193,517	112,429		50,012	8.78		3.87
1977	921,193		235,356	111,514		48,765	8.26		4.83
1978	1,064,014		179,160	123,927		38,402	8.59		4.67
1979	1,127,966		253,217	127,081		41,201	8.88		6.15
1980	1,165,174		281,793	133,683		38,851	8.72		7.25
1981	780,883		172,363	103,992		28,334	7.51		6.08
1982	859,304		132,117	107,137		23,267	8.02		5.68
1983	896,462		159,876	101,087		23,449	8.87		6.82
1984	864,653		167,323	107,447		23,620	8.05		7.08
1985	966,708		137,675	122,217		20,715	7.91		6.65
1986	1,056,332		170,490	129,232		22,129	8.17		7.70
1987	920,071		193,315	113,474		21,820	8.11		8.86
1988	1,068,756		164,160	112,985		21,313	9.46		7.70
1989	1,013,252		127,823	118,369		19,281	8.56		6.63
1990	914,466		99,639	117,396		17,430	7.79		5.72
1991	960,219		138,958	109,428		18,317	8.77		7.59
1992	1,073,861		262,022	105,664		22,161	10.16		11.82
1993	1,391,435		342,344	106,738		23,027	13.04		14.87
1994	1,581,389	1,100,000	408,777	107,134	46,838	25,734	14.76	23.49	15.88
1995	1,629,008	900,000	262,401	104,614	38,926	21,362	15.57	23.12	12.28
1996	1,804,328	1,200,000	313,152	101,857	40,777	22,728	17.71	29.43	13.78
1997	2,069,703	1,400,000	446,306	104,941	43,987	26,286	19.72	31.83	16.98
1998	1,586,291	1,500,000	457,956	83,049	49,047	22,963	19.10	30.58	19.94
1999	1,356,714	1,500,000	304,834	85,100	52,168	18,522	15.94	28.75	16.46
2000	1,691,240	1,900,000	339,246	89,134	53,950	17,381	18.97	35.22	19.52
2001	1,817,116	1,900,000	235,577	84,834	51,628	14,250	21.42	36.80	16.53
2002	1,791,530	1,800,000	159,356	81,737	47,262	12,166	21.92	38.09	13.10
2003	1,827,791	1,600,000	169,621	79,047	41,101	12,501	23.12	38.93	13.57
2004	2,317,227	1,577,000	260,402	88,783	38,569	13,751	26.10	40.89	18.94
2005	2,530,840	1,684,000	319,755	94,206	38,746	16,485	26.86	43.46	19.40
2006	2,611,034	2,045,000	432,101	93,243	44,833	19,095	28.00	45.61	22.63
2007	2,970,280	2,095,000	544,647	104,274	49,266	24,164	28.49	42.52	22.54

Table A3.3.3

Latin American Motor vehicle industry

	Hourly compensation US$			Annual hours worked		
	Brazil	Mexico	Argentina	Brazil	Mexico	Argentina
1974				2,080	2,063	1,993
1975				2,064	2,061	1,990
1976				2,048	2,060	1,987
1977				2,032	2,058	1,983
1978				2,016	2,057	1,980
1979				2,000	2,055	1,977
1980				1,985	2,054	1,974
1981				1,974	2,055	1,961
1982				1,963	2,056	1,949
1983				1,952	2,057	1,936
1984				1,942	2,058	1,923
1985				1,931	2,058	1,911
1986				1,920	2,059	1,899
1987				1,910	2,060	1,886
1988				1,899	2,061	1,874
1989				1,889	2,062	1,862
1990				1,879	2,063	1,850
1991				1,874	2,063	1,856
1992				1,869	2,062	1,862
1993				1,865	2,061	1,869
1994	11.0	4.1		1,860	2,078	1,875
1995	14.2	2.6		1,855	2,095	1,882
1996	12.9	2.7	9.6	1,850	2,233	1,889
1997	12.4	3.0	9.4	1,846	2,201	1,896
1998	12.0	3.1	9.8	1,841	2,145	1,903
1999	7.7	3.5	11.4	1,841	2,195	1,899
2000	8.1	4.0	11.0	1,841	2,155	1,872
2001	6.7	4.7	11.0	1,841	2,128	1,836
2002	5.8	4.9	3.9	1,841	2,155	1,739
2003	6.1	4.6	4.5	1,841	2,120	1,774
2004	7.0	4.5	5.1	1,841	2,110	1,774
2005	9.1	4.8	6.5	1,841	2,179	1,774
2006	10.9	5.0	7.7	1,841	2,150	1,774
2007	13.1	5.3	9.3	1,841	2,136	1,774

Table A3.3.3

Latin American Motor-vehicle industry

	Hours per car			Labour cost per car - US$		
	Brazil	Mexico	Argentina	Brazil	Mexico	Argentina
1974	239		400			
1975	232		452			
1976	233		513			
1977	246		411			
1978	235		424			
1979	225		322			
1980	228		272			
1981	263		322			
1982	245		343			
1983	220		284			
1984	241		272			
1985	244		288			
1986	235		246			
1987	236		213			
1988	201		243			
1989	221		281			
1990	241		324			
1991	214		245			
1992	184		158			
1993	143		126			
1994	126	88	118	1,391	362	
1995	119	91	153	1,694	232	
1996	104	76	137	1,344	204	1,312
1997	94	69	112	1,163	208	1,047
1998	96	70	95	1,157	214	937
1999	115	76	115	893	264	1,316
2000	97	61	96	789	247	1,059
2001	86	58	111	578	273	1,218
2002	84	57	133	486	276	520
2003	80	54	131	488	250	594
2004	71	52	94	496	234	476
2005	69	50	91	622	242	597
2006	66	47	78	717	234	604
2007	65	50	79	845	266	735

Sources: ANFAVEA (2008); ADEFA (2008); US BLS; Hufbauer and Schott (2005:373-7); Instituto Nacional de Estadística y Geografía (2010).

Chapter 4

Long-term Development, Potentialities and Limitations of the Brazilian and Korean Processes of Capital Accumulation

The previous two chapters put forward evidence in support of the two main hypotheses proposed in this thesis. Chapter 2 presented the measurement of primary sector surpluses, largely under the form of agrarian land rent, in Brazil and Korea between 1955 and 2005 and of the portions of these surpluses respectively appropriated by landowners and other social actors. It was shown that industrial capital and its junior partners in Brazil were supported for most of the period by the transfer, through state policies, of a portion of the land rent available in the economy. It was also shown that the same process occurred in Korea before the late-1960s but not thereafter. Since the early-to-mid-1970s, the Korean agrarian sector has become a net recipient of resources from the rest of the economy and the profitability of industrial capital rested entirely on the surpluses normally available for appropriation in that sector, though foreign loans were important in supporting capital formation.

Chapter 3 analysed main trends in the post-1950s processes of technological development on a global scale, and their impact upon the structure of skills required from the industrial workforce. It also examined the specific cases of the steel, automobile and semiconductors industries, and traced their development in Korea and Brazil since the 1950s, analysing and comparing the bases for the valorisation of individual capital there. The qualitative and quantitative analyses presented in the chapter confirmed that the process of valorisation and accumulation of industrial capital in Brazil and Korea rested on specifically different bases: the possibility to appropriate land rent in Brazil, and the possibility to produce goods for world markets using a *relatively* cheap and disciplined labour-force in Korea.

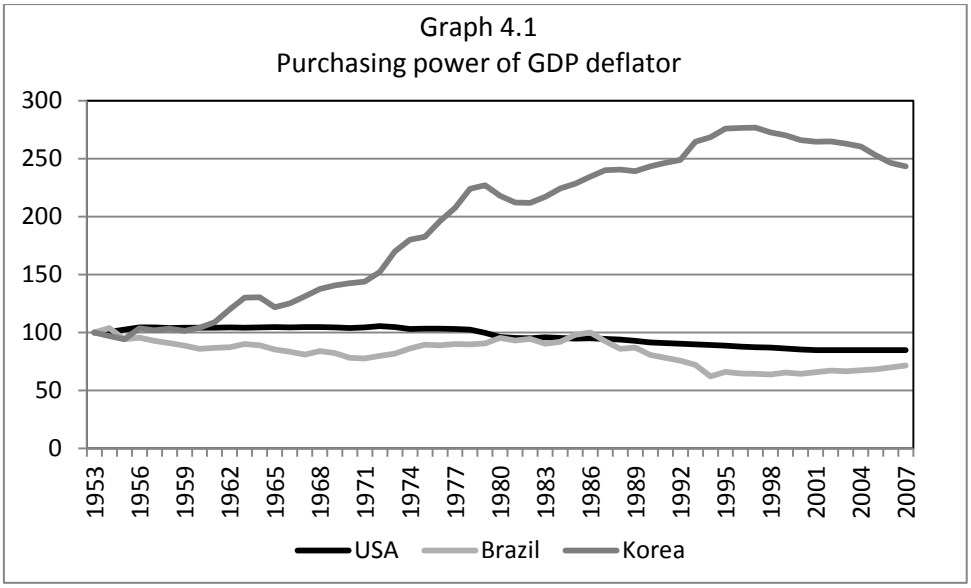
The present chapter will relate the findings presented in the previous two chapters to general trends in the Brazilian and Korean processes of economic development and growth between the mid-1950s and the mid-2000s. The main political-economy developments associated with these processes in each country have been schematically depicted in Chapter 1. Specific attention will be paid here to the evolution of quantitative economic indicators and political institutions expressing the essential characteristics of Brazilian and Korean capitalist development. In order to support the

task, this chapter will also refer to appropriate developments in the USA and Japan. The USA is used here as an expression of a national process of capital accumulation that reproduces itself through the development of vanguard science and technology. The Japanese economy is, in turn, the earliest and so far most developed national process of capital accumulation based, at least originally, on the use of relatively cheap and highly disciplined labour-power.

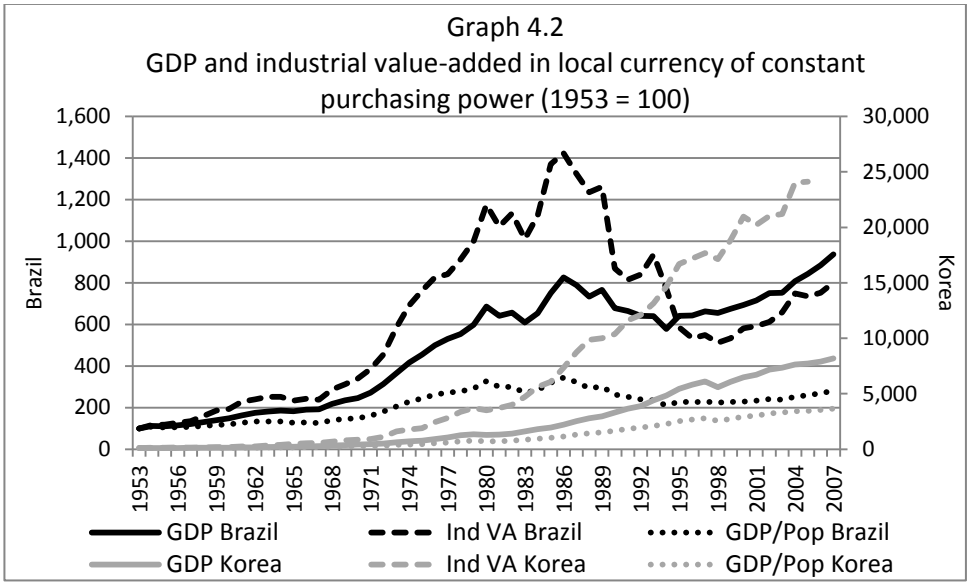
4.1) Economic growth in Brazil and Korea between the mid-1950s and the mid-2000s

Before analysing in detail the long-term performance of the Brazilian and Korean economies, it is necessary to clarify the methodology used to measure the evolution of economic growth. Unless stated differently, economic growth is measured in terms of the evolution of Gross Domestic Product (GDP) in local currency of constant purchasing power (i.e. time-series of nominal GDP are deflated using the evolution of the relevant Consumer Price Index) rather than in constant prices of a base year. In the first place, and crucially, the evolution of GDP in prices of a base year is a quantity index, incapable of measuring the evolution of social wealth in its capitalist value-form. In other words, it measures the temporal evolution of the quantity of goods and services produced, not of their combined value. Secondly, in the Brazilian case, the base year for the computation of the GDP in constant prices is 1980, when the post-WWII period of fast growth through 'state-led' ISI ended and the long-term fall of international commodity prices began.[1] As graph 4.1 below shows, the purchasing capacity of prices implicit in the Brazilian GDP fell significantly after the mid-1980s. This further reduces the relevance of the GDP in constant prices as an accurate measure of the evolution of the production of social wealth in Brazil.

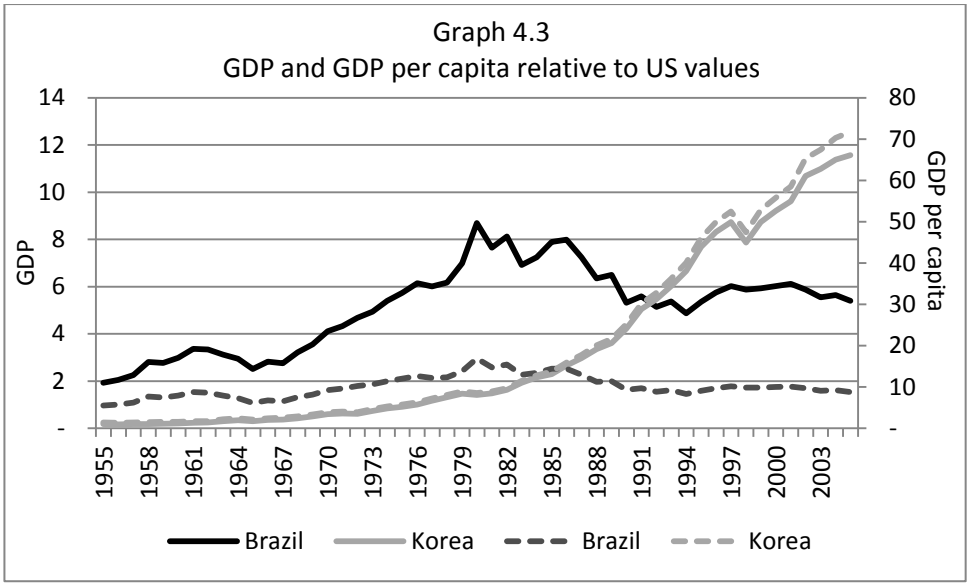
[1] Though the base was changed to 2000, values before 1995 were estimated using the growth rate of the 'old' GDP in constant prices of 1980.



Source: Table C.1 in Appendix C



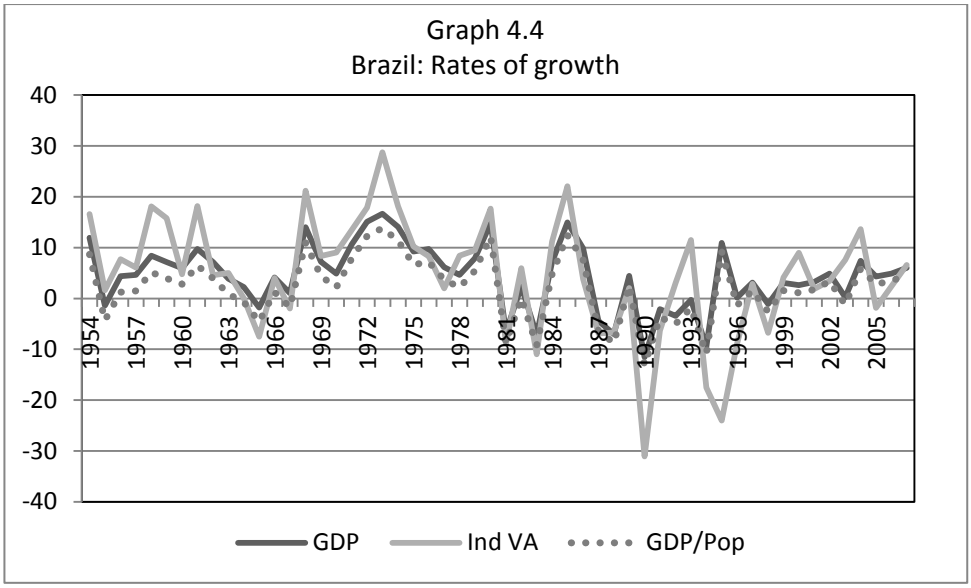
Source: Tables C.1 and C.3 – Population data: IBGE (Brazil); Bank of Korea and World Development Indicators (Korea)



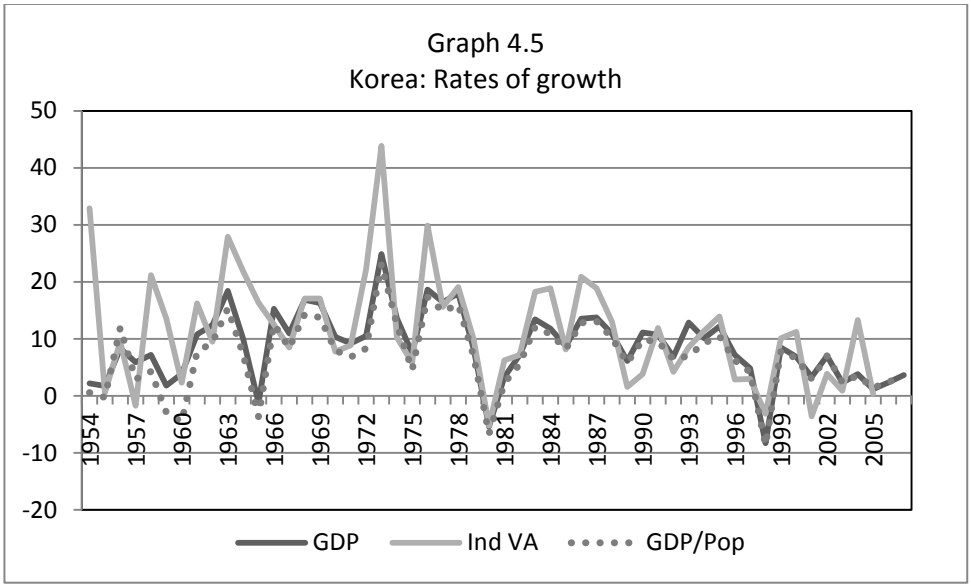
Source: Tables C.3 and C.17

Notes: Values in domestic currency were converted into US$ using PPP exchange rates estimated in this thesis. GDP per capita appears in dotted lines.

The growth experiences of the Brazilian and Korean economies during the period under study show similarities and differences. Between the mid-1950s and the late-1970s, both countries grew robustly, averaging 8% and 12% (4.6% and 8.2% in per capita terms) per year, respectively. As was seen in Chapter 2, in Brazil this was a period of relatively strong expansion of the land rent and, after 1968, also of large inflows of foreign interest-bearing (loan) capital. Combined, these sources of extraordinary social wealth were able to sustain a strong process of capital accumulation through 'state-led' ISI. In Korea, this period included the rapid recovery from war destruction, supported by the available agrarian and mining surpluses and large foreign aid inflows. It also included the post-mid-1960s structural transformation of the economy into a major producer of industrial goods for world markets, supported by a large inflow of loan capital to fund capital formation. As the Brazilian and Korean economies grew rapidly, they went from being only 2% and 0.2% of the size of their US counterpart in 1955 to 8.7% and 1.4%, respectively. In this process, income per capita in these countries increased from 5.5% and 1.5% to 17% and 8.5% of US levels, respectively (see graph 4.3 above).



Source: Tables C.1 and C.3



Source: Tables C.1 and C.3

As can be grasped from the graphs above, similarities also prevailed with respect to Brazilian and Korean rates of growth during large parts of the 1955-1980 period. Growth was fast but irregular in both economies during the second half of the 1950s and the first part of the 1960s. Indeed, the two countries suffered severe economic crises during 1964-65 as the masses of extraordinary social wealth supporting the process of ISI fell relative to capital's need for them. In Brazil, this was associated with a contraction of the land rent and of interest-bearing capital inflows. In Korea, the crisis was largely related to a sharp drop in foreign aid inflows. Yet, while the growth process

accelerated sharply in Korea immediately thereafter, when the economy was undergoing a key moment in its structural transformation (i.e. the emergence of labour-intensive, export-oriented industries like electronics and clothing), in Brazil recovery did not occur until 1968, when foreign loans were again forthcoming in large quantities and managed to complement a stagnant land rent.

The 1970s was a period of fast economic growth for both countries. Brazil enjoyed a massive expansion of the land rent available for appropriation and the inflow of interest-bearing capital associated with the 'commodities boom' and the recycling of petrodollars, respectively. With these enlarged resources, the process of ISI reproduced itself on an expanded scale. Korea was now undergoing its transformation into a major producer of heavy industrial and petrochemical goods (e.g. steel) for world markets, as well as a major provider of overseas construction services, using large reserves of cheap, disciplined and highly productive labour-power, and taking advantage of the large supply of low-cost credit in global financial markets. Yet, when the decade ended both economies were entering into severe crises. The global economy slowdown was affecting negatively the demand for raw materials, and hence their prices and the magnitude of the Brazilian land rent, and also the demand for those industrial inputs, consumer and capital goods produced in Korea. At the same time, the tightening of global credit markets was reducing the availability of financial resources for developing country economies. Indeed, both countries entered the decade of the 1980s with their economies going through their deepest crises since the 1950s.

After the early 1980s, the differences between the Brazilian and Korean growth trajectories became greater than their similarities (see graphs 4.2, 4.4 and 4.5). Economic growth slowed significantly in Brazil while accelerating in Korea. Between 1981 and 2005, the Brazilian and Korean economies grew at 1% and 7.6% annual average (-0.75% and 6% in per capita terms), respectively. As this occurred, the relative size of the Brazilian economy shrank from 8.7% of its US counterpart in 1980 to 5.5% in 2005, while the Korean increased from 1.4% to 11.5%. In this process, income per capita in these countries went from 17% and 8.5% to 8.8% and 72% of US levels, respectively (see graph 4.3). It was argued above that the reasons behind this differentiated performance are to be found in the distinctive forms under which industrial capital (and its junior partners) valorised and accumulated in each country after the mid-1960s, and in the way in which the post-1980 global economy developments thus manifested themselves in these national economies.

In Brazil, throughout the entire period, capital accumulated under the same, unchanged specific form. Small-scale by international standards, industrial capital was able to compensate for high production costs by appropriating a portion of the abundant land rent and of foreign interest-bearing capital inflows (i.e. external credits) which increasingly complemented the former. In general terms, the reproduction of the Brazilian process of capital accumulation has thus depended on the evolution of the mass of these resources available for appropriation to compensate for the difference between local and world markets production costs, broadly determined by labour productivity differences. As was seen for the specific industries analysed in the previous chapter, the low cost of the local labour-force was not, generally, enough to compensate for its low productivity resulting from this particular type of economic organisation. Hence, the post-1980 deceleration of the rate of economic growth largely resulted from the contraction of the combined masses of extraordinary social wealth available to support capital *relative* to capital's need for them to valorise normally (i.e. at the general or normal rate of profit). As was seen above, this *relative* contraction of the land rent resulted in the dismantling of several state policies supporting the ISI process and thus in the collapse of industrial valued added and the stagnation of GDP growth.

The long-term stagnation (i.e. relative contraction) of the combined mass of land rent and interest-bearing capital inflows, however, was realised through the alternation of periods of expansion and contraction of these resources. To a very large extent, the pace of economic growth in Brazil after 1980 was marked by that irregular evolution, as well as that of the constantly widening 'productivity gap'.[2] Following global developments in the demand for raw materials (and, thus, their prices and the size of land rent), and in the supply of credit to developing countries (and, thus, the magnitude of net interest-bearing capital inflows), economic growth accelerated around the middle part of the 1980s, 1990s and 2000s, and decelerated around the beginning and end of these decades.[3] Again, while periods of land rent expansion gave place to the reintroduction of some forms of state support for the ISI process, the opposite was generally the case during periods of land rent contraction.

[2] See graphs 2.10 and 2.13 in Chapter 2 for the evolution of the land rent and of the net inflow of foreign loans in Brazil.
[3] See graphs 1.1 and 1.2 in Chapter 1 for global economy developments in terms of commodity prices and interest rates. See Kaminsky (2005) for the evolution of private capital inflows to developing country economies since the 1970s.

In terms of strength, the post-1980 Korean growth experience has been radically different from the Brazilian. Nonetheless, in terms of cyclicality, both economies have shown a relatively similar movement. In general terms, the Korean process of economic growth during this period remained, as hitherto, dependent on the evolution of global demand for the type of industrial goods produced in Korea and on the capacity of capital there to compete in world markets based on the use of a *relative* cheap and disciplined labour-force. As the 1979-82 global economy recession ended, Korean economic growth accelerated strongly during 1983-88 while exports expanded and increasingly included high value-added products, like automobiles, cold-rolled steel and ships. Growth decelerated during 1989-92, when global economic growth and exports demand slowed, but accelerated again during 1993-96, as external demand recovered and productions for world markets began to include high-tech goods, like semiconductors and consumer electronics under Original Brand Manufacturer arrangements. Yet, economic growth decelerated once again thereafter as the international competitiveness of the local industrial sector began to be challenged by industrial capitals located in lower-wage countries, crucially in Southeast Asia, Mexico and China.

4.2) Growth of industrial exports in Brazil and Korea

The most immediate manifestation of the specific differences between the Korean and Brazilian processes of capitalist development is their distinct experiences with industrial exports. As was shown for the sectors analysed in Chapter 3, the expansion of manufactured exports has been far stronger in Korea than in Brazil.[4] Effectively, while the strong expansion of industrial exports has been a key aspect of the post-mid-1960s structural transformation of the Korean process of capitalist development, the reproduction of the Brazilian process of capital accumulation during the post-WWII resulted in a much weaker record in this area of economic activity.

During its post-mid-1960s export-led growth process, Korea's sales in global markers expanded strongly, at around 30% (36% for industrial goods) per year during 1965-1980, albeit starting from a very low base, and 8.5% (8.6% for industrial goods) per year during 1981-2005. As a result of this growth, the share of exports in GDP

[4] See table A4.1 in the Appendix at the end of this chapter for the evolution of exports in Korea and Brazil.

increased from 8% in 1965 to 44.5% in 1980 and, though decreasing to around 15% in 2002, remained at 20% in the second part of the 2000s. In this process, the participation of industrial goods in total exports increased from 10% (most of which were processed raw materials like food and beverages) in 1962 to more than 90% from 1980 onwards.

However, more significant, and revealing of the transformations at stake, has been the evolution of the relationship between the value of industrial exports and the value added in the sector. While in 1962, the value of industrial exports in Korea was equal to 6% of the industrial value-added, it was around 180% during the second part of the 1970s and the early 1980s. This not only shows the strong export orientation of Korea's industrial sector after the mid-1960s, but also the high import content of its exports during that period. The exports-to-value-added ratio fell continuously during the 1980s and 1990s to reach only 60% in 2002 as the process of industrial deepening proceeded further and, with it, the expansion of domestic demand for intermediate and consumer goods. The latter was needed to manufacture higher value-added goods for world markets and to reproduce a labour-force undertaking increasingly complex productive activities. Thereafter, the ratio of exports value to industrial value-added increased again to 76.5% in 2005 as the economy embarked on an export-led recovery and domestic consumption growth remained contained in the period that followed the 1997-98 economic crisis.[5] This significant expansion of the international competitiveness of Korean industrial capital, as seen in the previous chapter, has resulted not only from the cheapness of the local labour-force relative to that of its main competitors, but also from its rapidly increasing productivity. Both combined have resulted in *relatively* low unit labour costs in several, though not all, manufacturing branches and activities. The next section will analyse the evolution of labour productivity in the Korean and Brazilian industrial sector relative to world market standards (i.e. the USA). Section 4.5 below will analyse the evolution of labour costs.

The Brazilian exporting experience contrasts markedly with the Korean. The annual rate of growth of Brazilian exports averaged 12% (22% for industrial goods) during 1964-1980, albeit also starting from a very low base and receiving generous subsidies, and 4.4% (5.4% for industrial goods) during 1981-2005. In this process, export participation in GDP oscillated around 8-9% between the 1960 and 1990, when the domestic market remained highly protected, and around 10-12% between 1991 and

[5] See table A4.2.

2003 as large-scale trade opening policies were introduced. In 2004-05, they jumped to 17.7% of GDP as primary goods prices rose in the build-up to the 2007-08 'commodities boom'. Yet, this level of exports-to-GDP was similar to those experienced in the mid-1950s, at the end of the 'commodities boom' associated with the Korean War. In Brazil, high value-added industrial productions have been particularly oriented towards domestic and, since the 1990s, regional markets. Though industrial goods constituted more than 50% of total exports after the late 1980s, most of them have been processed locally available raw materials (i.e. food and beverages, cotton textiles, leather shoes, steel and aluminium) or, as in the case of motor-vehicles, agricultural machinery and consumer-electronics, receiving substantial subsidies or destined to the Mercosur – i.e. the expanded, and still protected, 'domestic' market.

It is interesting to note here that the evolution of the relationship between industrial exports value and the value added in the sector followed in Brazil a trend different from that observed in Korea. The value of industrial exports was equal to only 5% of industrial value-added during the 1960s, 11% during the 1970s, when export subsidies peaked, and 18% in the 1980s, when the strong undervaluation of the exchange rate stimulated overseas sales. These relatively low exports-to-value-added ratios resulted from the general domestic-markets orientation of Brazil's industrial sector during that period, itself an outcome of the specific form under which capital accumulates there. The ratio of exports to value-added increased from 25% in the early 1990s to 62.7% in 2005, as industrial value-added contracted (see graph 4.2 above) and high valued-added sales to regional markets expanded.[6] Both of these trends were already seen for the motor-vehicles industry and will be discussed in more detail in the second part of this thesis.

4.3) Growth of labour productivity in the Brazilian and Korean industrial sectors

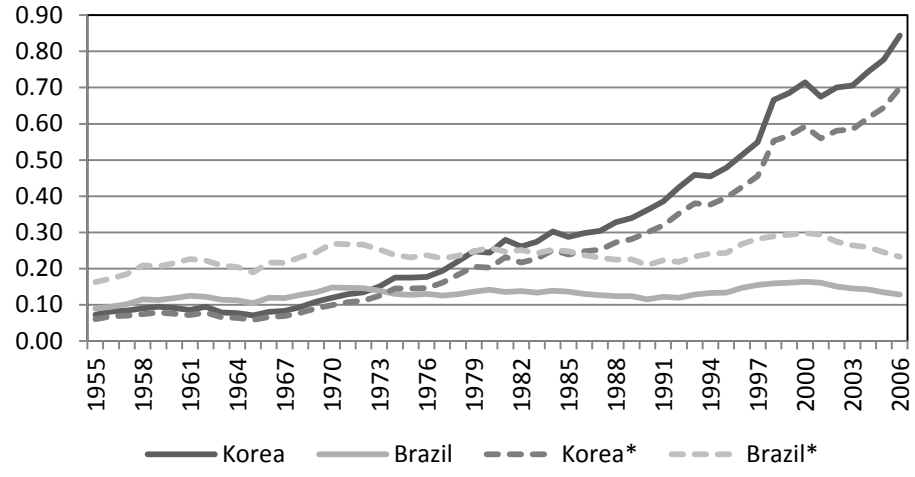
The increased international competitiveness of the Korean industrial sector was not simply the result of a comparative advantage in production intensively using cheap labour, as already argued above. It was also based on the continuous, strong surge in the productivity of the local industrial workforce, resulting from three main factors: the simplification/standardisation of several industrial labour-process due to the continual

[6] See table A4.2.

developmental of equipment automation; the historically-developed characteristics of the local workforce (i.e. its subordination to factory authority and its discipline for large-scale collective/collaborative labour-processes); and, the continuous upgrading, especially after the mid-1970s, of its quality (i.e. formal skills and on-the-job experience).

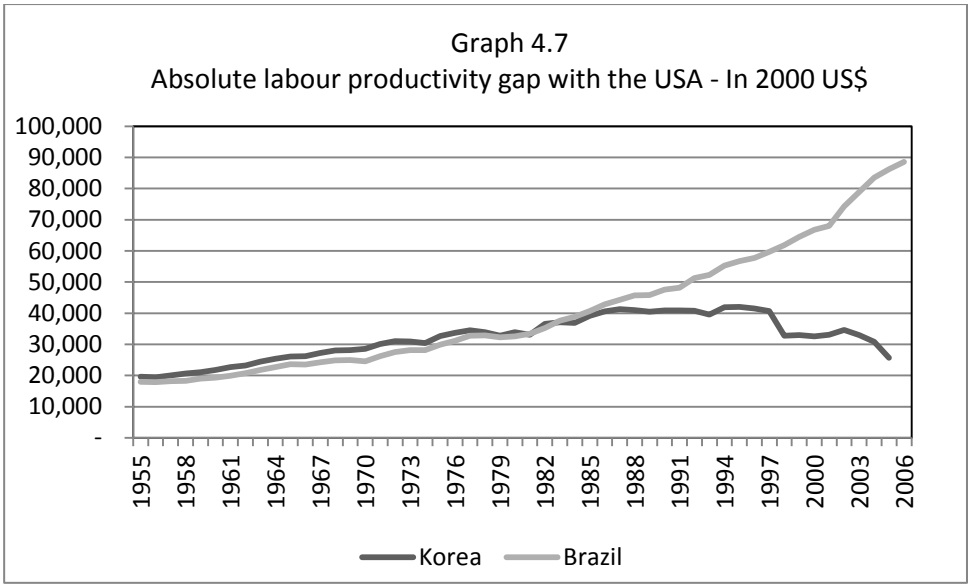
In Brazil, material conditions supporting productivity growth in the industrial sector have been radically different. In general terms, the narrowness of the domestic market and the highly diversified structure of the local industrial sector have imposed strong constrains on the use, let alone the development, of vanguard technology and, consequently, to the increase in labour productivity. Moreover, the possibility to accumulate through the appropriation of land rent has allowed, and thus created the incentives for, MNC subsidiaries to use out-dated, fixed capital, further limiting the growth of labour productivity in the industrial sector.

Graph 4.6
Labour productivity relative to the USA (manufacturing)



Source: Table C.28

Note: Korea* = labour productivity per hour; Brazil* = mainstream manufacturing sector



Source: Table C.28

Note: corrected for differences in hours worked in the case of Korea

Under the above-mentioned conditions, labour productivity in the Korean industrial sector grew at an annual average rate of 2.9% between 1955 and 1965, before the structural transformation of its accumulation base began, and 10% between 1966 and 2005, after the change. Consequently, as can be gathered from graph 4.6 above, the average level of labour productivity in the Korean industrial sector remained around only 6% of US levels between 1955 and 1965 and increased continuously thereafter to reach 65% of US levels in 2005. This massive catching-up process, nevertheless, occurred at different speeds across the post-mid-1960s period. The productivity of industrial labour in Korea grew substantially faster than in the USA between 1965 and the early 1980s (12% p.a. against 2.8% p.a.) and thus increased from 6% to 25% of US levels; grew only slightly faster than in the USA during the 1981-87 (5.7% and 4.3%) and thus remained around 30% of US levels; and grew again significantly faster than in the USA thereafter (9.4% and 3.8%), more than doubling the ratio between them. As can be observed in graph 4.7 above, it has been during the post-1987 period that the absolute productivity gap first stabilised (1987-97) and, subsequently, shrank markedly (after 1997). Before the mid-1980s, the large original absolute gap was enough to neutralise the relatively faster growth of labour productivity in Korea than in the USA.

Graph 4.6 also shows that labour productivity in the Brazilian mainstream industrial sector fluctuated around 20-30% of US levels across much of the period studied, growing at an average of 4.35% per year between 1955 and 2005, which was

only 1% faster than in the USA. As in Korea, there were marked differences across that fifty-year long period. Labour productivity in Brazil grew faster than in the USA during much of the second half of the 1950s, when MNCs accelerated their entry in the country and thus upgraded the technological profile of the local manufacturing base, and during the second half of the 1960s, when a wave of foreign direct investments, fusions and the disappearance of small firms took place in the Brazilian industrial sector.[7] Labour productivity in Brazil grew approximately as fast as in the USA during much of the 1970s and the 1980s, and sped up during the 1990s, when large sections of small- and medium-sized nationally-owned companies disappeared, a new wave of FDI took place and the strong overvaluation of the currency allowed the rapid importation of equipment, and slowed again during the post-2000 recovery. As can be seen in graph 4.7 above, with the productivity of industrial labour in Brazil growing approximately as fast as in the USA, and starting from a much lower level, the absolute gap between them has widened continuously. It is this constantly widening of the absolute productivity gap that partly explains the contraction in the production of industrial value-added during 1994-97 when the magnitude of the land rent and net interest-bearing capital inflows available and actually appropriated by industrial capital reached levels close to those of the 1970s.

4.4) Individual and collective characteristics of the Brazilian and Korean industrial labour-forces

The substantial increase in the productivity of Korean industrial labour described in the previous section has not meant, however, the 'upgrading' of its quality to the levels of its counterparts in the industrially advanced economies. Though rapidly catching-up, the average productivity of industrial labour in Korea has remained lower than in the USA throughout the period studied. As shown in graph 4.6 above, even after the impressive surge since the mid-1980s, the average productivity of Korean industrial labour in the mid-2000s remained around 65-70% of US levels. Unsurprisingly, though partly converging, the individual and collective characteristics (e.g. levels of average formal education, structure of skills and composition) of both national labour-forces have remained distinct. The average productivity of Brazilian industrial labour, on the

[7] See Newfarmer and Muller (1975: 98-111).

contrary, has been far from approaching industrially advanced economy levels. The possibility for capital to accumulate without investing the use and development of state-of-the-art technologies has resulted there in the development of an industrial workforce with attributes that have also tended to differ from those of its US counterpart. The specific evolutions of the productive characteristics of the Korean and Brazilian workforces have been a form of realisation of the processes of capitalist development that use and reproduce them. These evolutions have come about through differences in the conditions of their purchase and use by capital and in the consumption patterns of these national labour-forces, especially their distinct educational experiences.

It is usually argued that the availability of a highly educated workforce was one of the main factors explaining Korea's strong post-1960s productivity gains and overall growth experience.[8] This, however, was hardly the case. When the Korean economy began its impressive export-led growth process, the average years of education received by the local labour-force were not only low in absolute terms, but also below those received in countries like Brazil where illiteracy was extensive.[9] On the contrary, rapid and sustained advances in educational attainments in Korea, notably in comparison to Brazil, have themselves resulted from the developments and transformations of the process of export-oriented industrialisation, rather than having been a precondition to that process, legacy of the Japanese colonial period, as sometimes claimed.[10]

Moreover, the post-mid-1960s rapid increase in the average level of education of the Korean labour-force to approach industrially advanced country levels, hides some, often unnoticed peculiarities that reveal the underlying specific characteristics of the local process of capital accumulation. First, class sizes have been larger and students-to-teacher ratios higher in Korea than in countries like the USA and Brazil, notably before the 1990s.[11] This had the effect of reducing the contact between teachers and students and, consequently, strengthened the reliance on lecture-centred education strategies and the use of pedagogical practices such as memorisation and recitation (i.e. rote-learning) which are known to stifle creativity as well as independent thinking. These teaching

[8] See e.g. Rodrik (1994).
[9] See table A4.3 at the end of this chapter for the evolution of average years of schooling in Korea, Brazil and the USA. Illiteracy rates in Korea in 1945 reached 78% (Lee 2008: 11). In 1970, 33% of Brazilian population of age 15 or more was analphabetic. This proportion fell to 25% in 1980, 18.7% in 1990 and 11.1% in 2005. This information was published in various demographic censuses and is available in Ipeadata.
[10] See also Amsden (1989: 220) on this point.
[11] See table A4.4.

practices, nevertheless, promoted discipline and collective/collaborative work habits.[12] In effect, the rapid quantitative expansion in the provision of educational services during the 1960s, 1970s and most of the 1980s was achieved there at a relatively low cost and, consequently, at the expense of qualitative improvements.[13] Education expenditure as a proportion of national income in Korea was, until recently, low in international terms. Moreover, even if they have increased recently, per capita expenditure in education in Korea has been in absolute terms (the only ones that matter in practice) well below those of leading industrial countries.[14] Secondly, the practice of 'automatic promotion' has been widely used at all levels of the system while a central role has been given to moral (i.e. discipline), health and physical education, notably before the mid-1970s but also subsequently.[15] It was only after the 1970s, as the demand for a relatively qualified labour-force increased sharply, that the Korean state introduced specific reforms in order to include science and technology teaching at secondary education level[16] and, more important, implemented its massive programmes of 'vocational training' to increase rapidly the supply of semiskilled workers, almost non-existent in the country hitherto.[17] Primary and secondary education, together with the three-year long compulsory military service, enabled male prospective industrial workers to acquire rapidly the specific skills and discipline required for factory labour. It was only after the 1980s, when class sizes and students to teacher ratios fell substantially, that 'student-centred' educational methods began to prevail in Korea.[18] Nevertheless, as late as 2007 the module 'disciplined life' still formed part of the compulsory curriculum during the first 10 years of formal education in Korea.[19]

In Brazil, the situation has been markedly different. Resources spent on education have never been stretched as thinly as in Korea. On one hand, this has meant

[12] See Golladay and King (1979: 157); McGinn (1980: 77).
[13] See World Bank (1993: 243); Huh (2007a: 12-4).
[14] See table A4.5.
[15] See McGinn (1980: 40-5, 73-5); Huh (2007b: 137, 142). "Although there was emphasis on individualism and productivity in the curriculum in the 1950s, that was replaced in the 1960s with more emphasis on collectivity and conformity. What distinguished the curriculum of Korean schools from that of countries whose attempts at development have not resulted in rapid growth and relative equity is *not* its emphasis on science and technology. The major difference seems to be that Korean education places a heavy stress on moral education [which includes 'anti-communism'] and discipline. It is hard to fit this characteristic into the human resources development of the education's contribution." (Mason et al., 1989: 370).
[16] See Lee (2008: 54-5, 64-5).
[17] See Lee (2008: 41-4); Shin (2003: 103-4). The level of instruction provided through this programme, however, was basic. See Amsden (1989: 223-4).
[18] See Huh (2007a: 15-7, 34-40).
[19] See Huh (2007a: 46).

that class sizes have been smaller, thus theoretically improving the quality of the education provided and the space for the development of 'independent' thinking. On the other hand, educational attainments in Brazil, though improving constantly, have been nowhere near as universally spread as in Korea. Nevertheless, two caveats should be introduced here in relationship to the formal education received by the Brazilian industrial workforce *vis-à-vis* the Korean. First, given the low levels of education attained by Brazilian rural inhabitants and the urban marginal populations, it is highly probable that the evolution of average years of schooling underestimates the real educational levels of workers in the mainstream manufacturing sector, notably as average student to teacher ratios in Brazil have been relatively similar to US levels. Secondly, and probably more relevant for manual worker skills acquisition, from the 1940s onwards, well before the Korean experience in the field began, vocational training programmes were extensively implemented in Brazil, both by the state and by employer associations, notably during the 1970s process of industrial 'deepening'.[20]

Not only has the average level of education of the Korean and Brazilian industrial workforces been lower than their US counterparts. More importantly, their composition has also been different. First, the proportion of production (i.e. manual) workers in the total industrial workforce has been significantly higher in Korea and Brazil than in the USA.[21] Secondly, and related to the previous, the proportion of employees with tertiary education has been lower in these countries than in the USA throughout the entire period under study, though it has been increasing rapidly after 1980 in Korea.[22] Thirdly, the availability of such highly qualified workers as scientists and engineers involved in Research and Development (R&D) activities, and thus the production of scientific and applied knowledge, have been lower in Korea than in the industrially advanced countries against which its industrial sector has been competing in global markets. Crucially, this portion of the industrial workforce has been significantly lower in Korea than in Japan, a country that not only has a relatively similar economic structure, and pattern of insertion into the international division of labour, but also specialises in productions closely competing with Korean industrial output.[23] In Brazil, the participation of R&D workers in the total labour-force has been substantially lower

[20] See Correa do Lago et al. (1983: 123-28, 401-30); Valle Silva (2008: 476).
[21] See table A4.7.
[22] See table A4.8. Enrolment rates in higher education in Korea increased from only 16% in 1980 to 35% in 1985 and 55% in 1995. See Shin (2003: 133).
[23] See table A4.9.

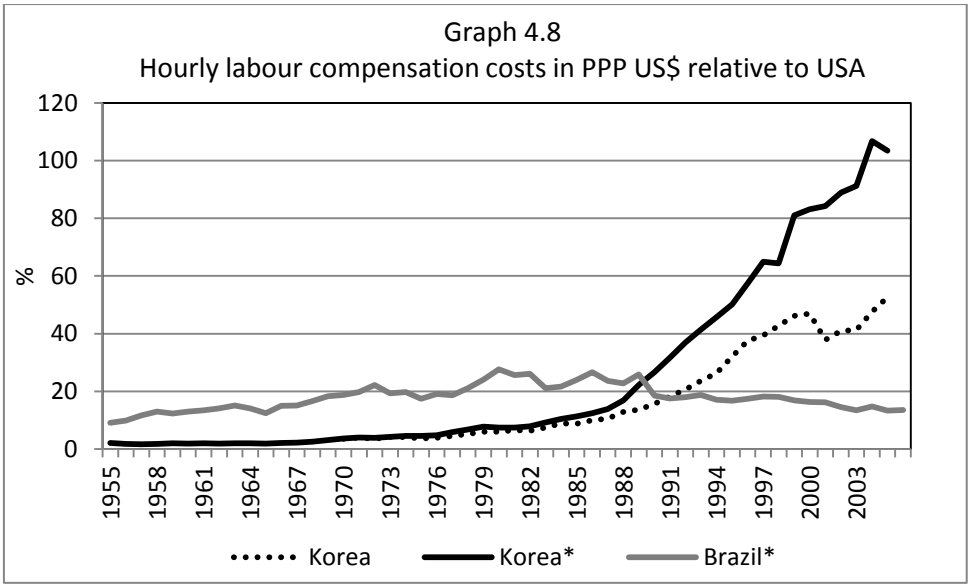
than in Korea and the industrially advanced countries. In other words, due to the specific characteristics of both processes of capital accumulation, the portion of the workforce producing technological and scientific developments, whether vanguard or adaptive, has been significantly smaller there than in those countries where capital accumulates through the development of vanguard technology.[24] Moreover, the share of non-production workers in Korea's industrial sector has been particularly reduced due to the relatively low presence of supervisory and administrative personnel, resulting from the high degree of subordination of manual workers to factory authority.[25]

4.5) Cost and reproduction patterns of the Brazilian and Korean labour-forces

As mentioned above, the increasing international competitiveness of Korean industrial capital, revealed in the rapid growth of manufactured exports, resulted from the high productivity of its labour-force *relative* to its cost. Table A4.12 in the Appendix, at the end of this chapter, shows the evolution of hourly labour compensation costs in Korea, Brazil and USA. It can be seen there that, relative to US levels, Korean labour costs in US dollars at market exchange rates were not only low but, also, lower than the ratio of labour productivity throughout the entire period studied except the years immediately before the 1997/98 crisis. In Brazil, on the contrary, the same was true only during periods when the exchange rate was not kept overvalued (i.e. late 1960s, 1980s and early 2000s).

Though relevant when analysing competition in world markets, the evolution of labour costs in US$ at market exchange rates distorts the real cost of labour-power in each national economy. As was seen before, the price of foreign currency in each country varies depending on the exchange rate policy being implemented. An overvalued currency increases domestic costs in world markets while an undervalued exchange rate has the opposite effect. To avoid this distortion, the following graph plots the evolution of Korean and Brazilian labour costs in US$ at PPP exchange rates relative to US levels.[26]

[24] See tables A4.10 and A4.11 for the evolution of scientific production in Brazil, Korea and several industrially advanced countries.
[25] See Amsden (1989: 167-73).
[26] As explained in Chapter 2, 'absolute' PPP exchange rates are not useful for this purpose. PPP exchange rates estimated in this thesis are thus used for the conversion.



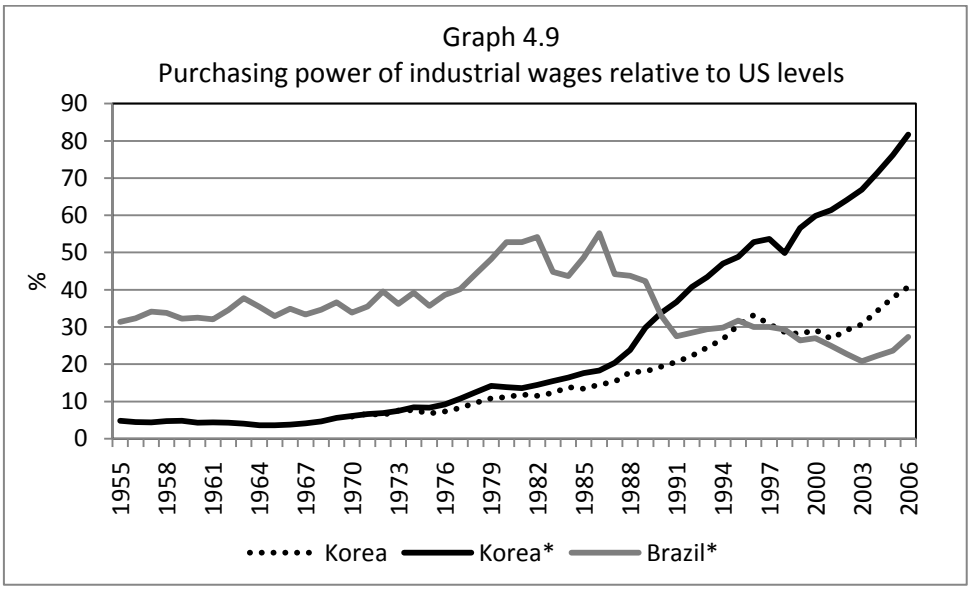
Source: Tables C.4, C.5 and C.17

Note: Korea* = manual workers in permanent employment; Brazil* = manual workers in permanent employment

Three main observations can be made from graph 4.8. First, it can be seen that the *real* cost of labour in Brazil increased from 9% of US values in 1955 to 28% in 1980 and, as economic growth slowed, decreased thereafter to be only 13% in 2005. Secondly, that the cost of manual labour *with permanent employment contract* in the Korean industrial sector increased from 2% to around 100% of the *average* cost of US manual industrial labour between 1955 and 2005. Thirdly, that the average cost of industrial labour in Korea increased more slowly, from 3.5% to 52.5% of US levels between 1970 and 2005. Fourthly, comparing graph 4.8 and table A4.12, it can be seen that post-1997 labour costs in Korea remained low for international standards only due to the exchange rate undervaluation policy pursued there.

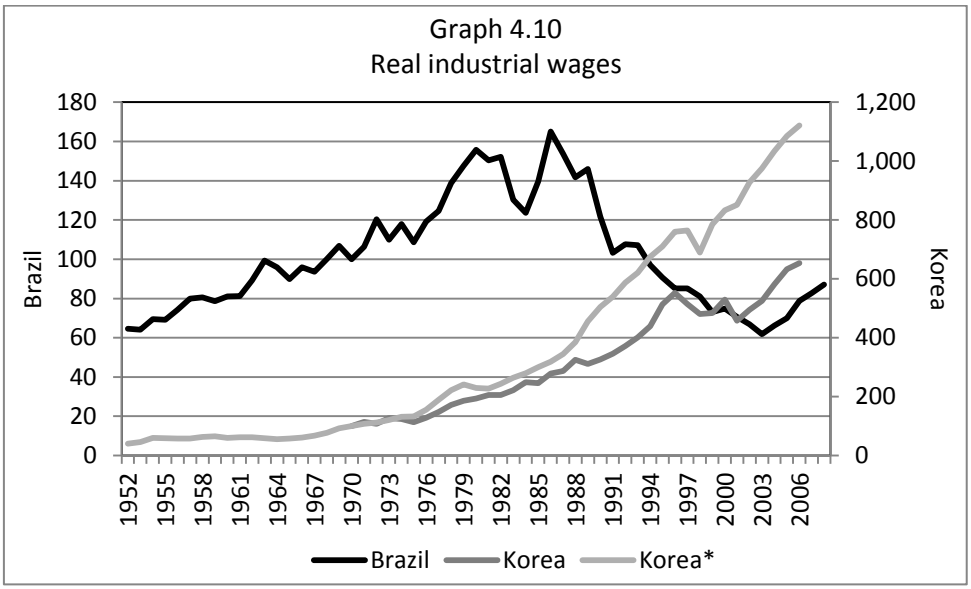
Yet, though relevant to measure the real cost of labour-power in each domestic market, graph 4.8 does not provide an accurate picture of the evolution of industrial wages' purchasing power and thus of their capacity to reproduce labour's productive attributes and to absorb domestic productions. As foreign exchange, the price of goods and services consumed by the labour-force also differs from country to country and so does, then, the purchasing capacity of wages. To account for this distortion, the following two graphs plot the evolution of Korean and Brazilian hourly industrial wages

in 2005 PPP US$ relative to US levels and in local currency of constant purchasing power.[27]



Source: Tables C.30

Note: Korea* = Manual workers in permanent employment; Brazil* = Manual workers in permanent employment



Source: Tables C.4 and C.5

Note: Korea* = Manual workers in permanent employment

[27] As explained in Chapter 2, 'absolute' PPP exchange rates are used for this purpose.

As can be gathered from graph 4.9 above, the average purchasing power of hourly manufacturing wages in Korea and Brazil has been substantially lower than in the USA throughout most of the period studied. In Korea, however, it has been catching-up with US levels, increasing from less than 10% of the latter during the late 1960s to 55% for all employees and 80% for mainstream manual workers in the mid-2000s. This substantial and continuous improvement in the purchasing capacity of industrial wages has resulted in the expansion of labour's productive attributes, as reviewed in the previous section. This general trend, however, hides both a changing speed in the catching-up process and a changing pattern in the evolution of the payment conditions of the different portions of the industrial workforce. The increase in the average purchasing power of industrial wages in Korea (see graph 4.10) and their catching-up with industrially advanced country values (see graph 4.9) was constant but relatively slow until the late 1980s when they reached only 20-22% of US levels. Moreover, during this period, crucially before the late 1970s, the gap between wages paid to manual workers and to their clerical and managerial counterparts, and the 'premium' paid for education, were not only substantially larger than in industrially advanced countries like the USA, but was also growing rapidly.[28] As with labour productivity, the growth of real wages and their catching-up process were extremely fast after the mid-1980s. In contrast to the previous period, while real wage growth accelerated, the gap between blue and white collar worker wages decreased substantially until the early 1990s. Nevertheless, the gap started to increase again thereafter, together with that between large and small company employee wages. Internationally high and growing differences in the payment conditions of 'permanent' and 'temporary' employees have also been common in Korea, notably after the late 1990s crisis. Indeed, while until the late 1980s wages paid to manual industrial workers with permanent contracts were roughly equal to the average wage paid in the sector (which includes those paid to 'temporary' workers as well as clerical worker salaries), in 2005 permanent worker wages were at least 50% higher (see graph 4.10 and table C.5). Gender-based wage differentials in the Korean manufacturing sector, though decreasing continuously since the 1970s, have been, together with the Japanese, the largest in the world for a large part of the period studied.[29] These differentials have been larger at lower levels of educational attainments. In other words, since the early 1970s,

[28] See tables A4.13, A4.14 and A.15.
[29] See also Amsden (1989: 204); Monk-Turner and Turner (2000); Seguino (2000).

industrial capital has found in Korea a labour market with not only an internationally cheap and highly disciplined industrial labour-force, but also with a highly differentiated structure of remunerations. These conditions have been particularly suitable for the emerging and consolidating technological base. On the one hand, these wage disparities allowed the differentiated compensation of the portion of the labour-force working as an appendage of the machine and of the fraction performing more skill-intensive activities. On the other hand, they allowed, crucially through gender-based wage disparities, the development of the relatively high-wage heavy and petrochemical industries while minimising the impact on the normal functioning and international competitiveness of low-wage clothing, textile and electronics industries, where female employment has tended to be concentrated.

The evolution of industrial wages' purchasing power has also been irregular in Brazil. First, as can be seen in graph 4.10, the average purchasing capacity of industrial wages increased substantially between the end of WWII and the mid-1970s, remaining throughout this period at around 35% of US levels (see graph 4.9), well above the ratio of labour productivity. Though this growth was relatively universal within the mainstream manufacturing sector until the mid-1960s, it was marked by an increased differentiation thereafter, when the military took over. In contradistinction to what was taking place in the industrially advanced countries, between the mid-1960s and the early 1970s, the purchasing power of skilled industrial worker wages/salaries in Brazil increased substantially while those of manual workers remained largely stagnant and even fell slightly.[30] Secondly, between the early 1970s and 1980, the average purchasing capacity of wages in the mainstream industrial sector in Brazil increased substantially to reach around 50-55% of US levels, as the manufacturing base deepened and industrial productions for domestic markets grew strongly. Again in contrast to the Korean experience, that ratio was almost double that of Brazilian industrial labour productivity relative to US levels. As mentioned, the use of out-dated equipment in Brazil limited, *ceteris paribus*, the growth and level of productivity of labour of a given quality. The growth of purchasing power evidenced during most of the 1970s was, also in contrast to the contemporary experience in industrially advanced countries, broadly universal. Thirdly, the purchasing power of Brazilian industrial wages oscillated around 40% of US levels during the 1980s, and thereafter, as industrial value-added and

[30] See table A4.16.

employment contracted, fell continuously to become only 25% of US levels during the first half of the 2000s. This massive wage contraction, however, generated another source of extraordinary profits for capital to complement the land rent in sustaining capital's valorisation. Fourthly, unlike in Korea, the purchasing capacity of Brazilian wages relative to US levels has been substantially higher than the real costs of labour for social capital throughout the entire period studied (see graphs 4.8 and 4.9). The appropriation of land rent through low food-prices allowed capital to lower the cost of labour-power of any given quality.

Fast increases in wages and labour productivity in Korea, however, have been accompanied by internationally long working-days, even increasing during the 1970s and most part of the 1980s, when the manufacturing sector was undergoing its 'deepening' into heavy and, subsequently, consumer-durable goods industries. Even as late as 2005, the working-day in the Korean industrial sector was 27% longer than in the USA.[31] This trend indicates that workforces in both countries have been, on average, performing labour-processes of different quality, notably with respect to their average intellectual intensity and complexity. Indeed, this was one of the conclusions yielded by the analysis of the composition of both labour-forces. In contrast, the evolution of the length of the average working-day in Brazil has been similar to the US pattern, and has remained around 5-10% above of US levels throughout the entire period. This evolution, together with the relatively high average purchasing power of manufacturing wages, indicates that, until the mid-1980s, the industrial labour-force in Brazil was reproduced with productive attributes and performed activities closer to those of its US counterpart than its Korean. This was necessary to reproduce a process of industrialisation that then was, in many respects, a small-scale replica of its US counterpart. Partly as a consequence of this evolution in the length of the working-day, industrial accidents have also been substantially higher in Korea than in the USA and Brazil during much of the period under study.[32] Together with the low wages prevailing there until the late-1980s, this has meant that job separation rates were, until the 1990s, substantially higher in Korea than in Brazil and in such countries as Japan and Taiwan.[33] These conditions also resulted in particularly high mortality rates in Korea, notably among female workers who were rapidly being incorporated into the industrial

[31] See table A4.7.
[32] See table A4.17.
[33] See table A4.18.

labour market.[34] Indeed, only a society with access to a massive surplus population, as the Korean then, can afford the accelerated wear and tear of its labour-force.[35]

4.6) Labour market institutions and working-class political representation in Brazil and Korea

The individual and collective characteristics of the Korean and Brazilian industrial labour-forces reviewed above have not sprung spontaneously. On the contrary, they have been a product of, and have expressed and realised, the specificities of the national processes of capital accumulation that use, and thus reproduce, them. As such, they have largely resulted from the evolution of three intrinsically related factors: state expenditures on labour's reproduction; the structure and dynamics of labour markets; and, the forms of working-class political representation.

During most of the period studied, expenditures on such services as education, healthcare and housing in Korea were, as a general trend, undertaken largely by the private sector.[36] In the case of education, a division of labour tended to prevail between public and private sectors. While the former concentrated almost fully in providing universal primary instruction, the latter largely monopolised the provision of secondary and tertiary tuition.[37] Only in the last couple of decades, have increases in state expenditures in higher education meant that the overall cost of education provision has tended to be shared almost equally between the private and public sectors.[38] Housing and healthcare, as well as social security, have remained largely privately supplied.[39] The cost of reproducing the Korean labour-force has thus been largely included in the direct and indirect wages paid by employers. This trend has, *ceteris paribus*, introduced a limit to labour's universal, undifferentiated reproduction. In Brazil, on the contrary, until the early 1990s neoliberal reforms, state participation in labour's reproduction was, as a general trend, relatively extended, albeit until the 1970s and crucially the mid-

[34] See table A4.19.
[35] See Koo (2001: 54-6).
[36] See Shin (2003).
[37] See McGinn (1980: 15-7); World Bank (1993: 199); Huh (2007b: 137-8).
[38] See Huh (2007a: 65). See World Bank (1993: 43-6) for a comparison between East Asian countries, including Korea, and other developing countries.
[39] See McGinn (1980: 15-27, 70-1) for education; Park (1998) for housing; Shin (2003: 90-2) for healthcare.

1980s, directed largely to urban workers with formal employment contracts.[40] Moreover, to a much larger extent than in Korea, services like healthcare, housing and leisure were provided by industry-wide trade unions rather than by individual companies.[41] Combined, state and trade union actions sustained a minimum degree of universality in the consumption of 'public' services among workers in the mainstream manufacturing and service sectors while excluding the rest of the working-class from that consumption.

Hence, the specific features of labour market institutions and working-class political representation have thus been fundamental in mediating the respective patterns of consumption and the conditions of reproduction of the Korean and Brazilian labour-forces. Not only through their role in the determination of wages paid to the different fractions of the industrial workforce, but also through their part in the determination of state expenditures in universal public services. In this way, these market and political institutions have mediated the reproduction of the specific characteristics of the Korean and Brazilian processes of capital accumulation.

Post-WWII labour market institutions and working-class politics in Korea and Brazil have not only differed from each other, since they have mediated specifically distinct processes of capitalist development, but also from those prevailing in countries where the process of capital accumulation involves the production of a workforce capable of pursuing vanguard scientific and technological development. In the USA, for instance, labour unions have been structured in the form of trade or industry-wide organisations affiliated to national confederations, the AFL-CIO (American Federation of Labor-Congress of Industrial Organisations) the largest and until recently the only one.[42] Between the passage of the 1935 Wagner Act and the early 1980s, industrial relations there were broadly structured around the process of collective bargaining by which employers negotiated with trade unions not only payment conditions but also detailed work rules and grievance procedures for a particular branch of industry during a specific period of time. Negotiated at the company level, contracts agreed in this way became thereafter effective for the entire branch of industry, thus homogenising

[40] See Correa do Lago et al. (1983: 174-93) and Plank (1996: 70-85, 123-28) for education; Santos (1999) for housing; Cardoso and Jaccoud (2009: 230-39) for an overview of educational and healthcare policies. See also Maloy (1979); Lewis and Lloyd-Sherlock (2009) for social security provision.
[41] See Erickson (1979: 36-9).
[42] See Aglietta (1979: 190-8). See Boyer (1995) for a comparison of the US experience with that of other developed nations.

payment and working conditions across each industrial sector.[43] National confederations, in turn, lobbied the state, with more or less success according to the historical circumstances, for certain universal working conditions and the universal provision of public services and social welfare, sometimes through direct intervention in national party politics.[44] Though being legally entitled to do otherwise, crucially after the passage of the 1947 Taft-Hartley Act,[45] the US state restrained from systematically intervening in trade union affairs and in the bargaining process between them and private-sector employers, as well as from enforcing the legal restriction of public sector employees to the right to strike.[46]

Since the mid-1970s, and crucially the early 1980s, several changes have taken place in the US system of industrial relations. These changes have help mediate the reproduction of the essential features of the NIDL within the US national process of capital accumulation. To being with, in parallel to the introduction of neoliberal reforms in the fields of social and economic policy, the US state changed its overall approach to labour issues, pursing a 'political offensive' against trade unions.[47] Together with the 1974-75 recession and the 1979-82 economic crisis, this policy-shift weakened labour's bargaining power and helped capital to accelerate the process of differentiation of the conditions of work and remuneration of the distinct portions of the US labour-force.[48] As a consequence of these developments, the process of collective bargaining was transformed thereafter. First, collective bargaining has tended to be increasingly located at the company, or even plant, level, reducing industry-wide homogeneity of contracts,

[43] See Aglieta (1979: 193-8); Coriat (1992: 211-4); Silver (2003: 153).
[44] Unlike in Western Europe, the process of capital accumulation in the USA did not need to come about, at the end of WWII, through the concentration of industrial capital under public ownership as a precondition for capital to compete in the global markets through the vanguard development of science and technology. The scale of the US domestic market was large enough to accommodate more than one industrial capital in every branch of production. There was no need, therefore, for the consolidation there of an independent working-class party with reformist social-democratic ideology aiming to gain control of the state for the construction of 'socialism' as in Western Europe. The Cold War presented the perfect excuse to eliminate these elements from the US mainstream trade union movement (Aglietta 1979: 191-3; Silver 2003: 157). Nevertheless, the latter, though remaining politically independent from mainstream parties, usually granted their support to the Democratic Party, generally favouring the universal provision of public services and the legal regulation of working conditions (Goldfield (1987: 26-32); Perusek and Worcester, 1995: 6, 13).
[45] The Taft-Hartley Act removed large part of the labour rights introduced by the Wagner Act and also helped 'purged' trade unions from their so-called radical elements. See Aglietta (1979: 191-2).
[46] See Perusek and Worcester (1995: 8-12); Silver (2003: 151-8, 160-1).
[47] See Campbell (2005: 195-7).
[48] See Perusek and Worcester (1995: 12-5); Toulouse (1995: 35-46); Silver (2003: 163-4); Brenner (2005: 165-6, 195-8).

and thus working and pay conditions.[49] Secondly, the rigidity of work rules in negotiated contracts has been eased, notably in terms of job specifications, thus 'flexibilising' work practices and facilitating the development of 'multitask', Japanese-style manual workers. Thirdly, industrial sectors and regions where non-unionised firms prevail have expanded significantly, thus weakening the bargaining power of trade unions in traditional industrial areas.[50]

As noted, Korean labour market institutions and forms of working-class political representation tended to differ from these patterns, as well as from the Brazilian. In general terms, three main stages can be identified in the evolution of Korean labour relations and politics. The first period included the US military government (1945-48) and Rhee's autocratic regime (1948-60) during which trade unions were first brutally 'purged' from the 'radical' elements that had emerged through the liberation struggles and, subsequently, incorporated, in a subordinate role, into the structure of Rhee's ruling Liberal Party in a pseudo-corporatist fashion, even if labour laws had been designed following the US 'liberal' model.[51] The second stage lasted most of the 1960s. After a period of complete suspension of trade union rights and a new purge of their potentially 'radical' elements, following the 1961 military coup, in 1963 the government reformed the labour laws, establishing an openly corporatist model. Unions were organised along industrial lines and industry-wide unions under the umbrella of the government-sponsored, KCIA-controlled Federation of Korean Trade Unions (FKTU).[52] Nevertheless, the firm remained the unit upon which trade unions were structured. Following the corporatist model, the state was given the power to recognise unions and to intervene in their affairs, while unions were granted exclusive representation. As in many other corporatist labour regimes, the right to strike was, *de facto*, severely restricted through the stipulation of lengthy formal processes to solve labour disputes without affecting social 'peace'. However, in sharp contrast to most corporatist experiences, trade unions were banned from taking part in political activities, crucially supporting opposition parties. Moreover, the labour courts were, unlike in Brazil, usually hostile to workers and labour protection laws were thus never fully

[49] See Freedman (1982: 16); Goldfield (1987: 46-8); Theelen (2001: 78).
[50] See Coriat (1992: 214-8) for the automobile industry and Scherrer (1995) for the steel industry.
[51] See Hamilton (1986: 23-4); Choi (1989: 28-9); You (1995: 117); Bello and Rosenfeld (1992: 29-30); Koo (2001: 26).
[52] The Korean Central Intelligence Agency (KCIA) was a massive counterintelligence state institution formed in 1961. See Part II of this thesis.

enforced. Labour-management councils were also formed to promote 'industrial peace', though their activities remained limited.[53]

The third stage started in the late 1960s and, in most relevant aspects, has lasted until the present. This period began with the passing of legislation severely restricting trade union activities in foreign-owned companies, which was soon after generalised, for reasons of 'national security', to the rest of the industrial sector. The rights of collective bargaining and collective action were curtailed and interference of counterintelligence agencies in labour affairs largely increased.[54] In 1972, another measure expanded further the range of sectors where trade unions were banned in the 'public interest'. These changes in labour market institutions were strengthened through the implementation, during 1973-74, of a series of amendments to the pre-existing labour laws that *de facto* established a structure of working-class economic representation following the Japanese model of company-centred industrial relations, ending for most practical purposes with industry-wide associations. The functions of hitherto largely decorative labour-management councils at the company or factory level were strengthened while the organisational structure and the role of industrial unions were considerably weakened.[55] With the exception of a few sectors where small companies prevailed (e.g. the clothing industry), negotiations between capital and labour would thereafter take place at company, and sometimes plant, level, and increasingly without union intermediation. State interventions in the labour market would concentrate in the political persecution and intimidation of non-compliant workers attempting to form independent unions. The state would also acquiesce to companies taking advantage of the system of exclusive representation and registering company-controlled 'puppet' unions. Unsurprisingly, most *chaebol* conglomerates and large-scale state firms remained largely union-free until the late 1980s. Unlike Brazil, direct and comprehensive state intervention in the determination of the conditions of purchase and use of labour-power would only occur when the parties failed to agree on contested issues, or during specific moments of economic hardship to limit wage growth.[56] Hence, in this unfavourable environment, trade unions slowly lost centrality

[53] See Choi (1989: 84-5); You (1995: 118); Bello and Rosenfeld (1992: 30-1); Koo (2001: 27-8).
[54] See Choi (1989: 87-92); Bello and Rosenfeld (1992: 31, 33-4); Koo (2001: 29-30); Shin (2003: 98-100).
[55] See Choi (1989: 90-2); West (1987: 495-97); Shin (2003: 98-100).
[56] See Choi (1989: 93-106); You (1995: 121); Shin (2003: 100). As labour laws forbade the existence of more than one union per company, it was not uncommon that management in conjunction with

as representatives of labour's interests. Negotiations, then, took place increasingly in the so-called 'management-labour committees' while trade union associations at higher levels than the company remained under state control and usually stifled lower-level incipient activism. This consolidated a type of 'corporatism without labour participation' which was further reinforced through new legislation passed in 1980, transforming *de jure* the structure of union representation.[57]

From 1987 onwards, the formation of democratic unions became easier, crucially in the *chaebols*, but umbrella federations competing with the state-controlled FKTU and union participation in national politics remained banned until the second part of the 1990s. Despite these latter changes, two key characteristics of Korean labour affairs have remained intact. First, trade unions and the process of collective bargaining have remained based at the company level. Secondly, the participation of trade unions in national politics has remained marginal and distant from mainstream parties.[58]

In general terms, these labour market institutions have, *ceteris paribus*, structurally weakened labour's bargaining power, as workers in each company have tended to compete implicitly with their counterparts in other firms in the same sector of production. These labour market institutions limited wage growth and working conditions improvement, and thus helped sustain labour costs at internationally low levels until the mid-1980s. They reinforced historically developed settings. Moreover, the combination of weak federations and trade unions legal or practical exclusion from any significant involvement in national party politics has also restricted inter-union solidarity and lobbying for the universal provision of public services and social security by the state. In this way, these labour market institutions have helped reproduce a differentiated structure of working and payment conditions. Finally, by excluding irregular and unemployed workers from union representation, even when working in the mainstream industrial sector, these institutions have turned this type of workers into social pariahs, further reducing their cost for capital. Together, these forms of working-class economic and political representation have thus mediated the reproduction of the fragmented labour markets, as reviewed in the previous section in relation to real wage evolution.[59]

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acquiescent blue collars workers registered compliant company unions with the monopoly of labour's representation.

[57] See West (1987); Shin (2003: 128-9).

[58] See Koo (2001: 201-17).

[59] See You (1995: 119-20, 129).

In Brazil, labour market and political institutions have been closer to the 'classic' corporatist type. To begin with, the Brazilian Labour Code (Consolidação das Leis do Trabalho) has governed industrial relations since it was created in 1943, consolidating a number of laws that had been passed during the previous twenty years. The Labour Code set regulations not only related to working conditions and grievance procedures, but also to the structure of the system of industrial relations. Trade unions were to be organised at industry and regional levels, for a specific occupational category, with representation at county level, which was the base unit of organisation. Federations and national confederations were allowed to emerge coordinating the actions of regionally based industry associations. Confederations including different occupational categories were, however, forbidden until the late-1980s. Nevertheless, they were tolerated during much of the post-WWII period, with the exception of 1965-79. The Labour Code was so detailed in terms of regulations over working conditions that the process of collective bargaining, when not forbidden, was largely confined to negations on remunerations.[60] In contrast to the Korean experience, this has taken place at the industry or occupation, rather than at the enterprise, level. In contrast to the US experience, the process of collective bargaining has taken place between unions and employers' association in the same industrial sector. Conflicts over other issues have been dealt with in Labour Courts, the state institution created to enforce the implementation of labour laws. Moreover, in sharp contrast to the experiences in the industrially advanced countries and in Korea, trade unions in Brazil have concentrated, apart from their economic functions, on the provision of 'public' services and social security for their members. In effect, a portion of their incomes, collected through a compulsory tax on all workers with formal employment contracts in a specific sector (regardless of their affiliation status), has been earmarked for the provision of social welfare. Finally, as in Korea, the Brazilian state has, until the 1980s, also controlled the emergence and development of trade unions, as their legal status and funding has depended upon approval and control from the Ministry of Labour.[61]

Brazil's labour legislation experienced just a few important changes after its promulgation, the most significant being those introduced in the aftermath of the 1964 military coup, and those included in the 1988 Constitution after the reintroduction of democratic government. The military regime introduced two main changes. First, it

[60] See Bronstein (1978).
[61] See Erikson (1979: 29-34); Malloy (1979: 56-61); Amadeo and Camargo (1995: 152-60).

passed legislation that together with the action of counterintelligence agencies, including persecution and torture of non-compliant union leaders, reduced significantly the power of trade unions, which had increased during the previous years, and the ability of workers to organize collectively. Secondly, the military government also passed legislation in order to allow the state to influence more closely the evolution of real wages, suspending *de facto* the process of collective bargaining. This legislation was mostly used during 1965-79, but was only completely abrogated in 1995. Conversely, the 1988 Constitution reinstated, or extended in terms of coverage, most labour rights restricted or eliminated during the military dictatorship and updated the existing regulations on wages, working hours and severance payments.[62]

Forms of working-class political representation in Brazil have also differed from the Korean and US experiences. Trade unions in Brazil, however restricted their actions might have been, were generally allowed to participate in national politics, both during democratic periods (1946-1964 and after 1985) and when the military regime maintained the pretension of conserving pseudo-democratic political institutions. However, unlike in Western Europe, the political intervention of the Brazilian working-class has not been independent from other social classes.[63]

These labour market and political institutions, crucially the structure of trade unions, have resulted, *ceteris paribus*, in stronger bargaining power on the side of Brazilian labour and relatively more universal provision of public services and welfare for those in formal employment *vis-à-vis* the Korean experience. In this way, these labour market and political institutions helped reproduce a structure and level of skills and remunerations, as well as working conditions, in the mainstream industrial sector closer to those prevailing in the industrially advanced countries than in Korea, at least before the mid-1980s. These institutions have also helped reproduce the limited character of the Brazilian process of industrialisation in three other ways. First, working-class political dependence on inter-class alliances prevented the centralisation of capital under public ownership beyond basic industries as happened in many

[62] See Amadeo et al. (2000: 3-8); Gonzaga et al. (2003: 168).

[63] During 1946-1964, trade unions were the main pillar of the Brazilian Workers Party (PTB), which governed most of the period in alliance with the Social Democratic Party (PSD), representing politically the national bourgeoisie. During the military government (1964-1985), trade unions were incorporated in the base of support of the Brazilian Democratic Movement (MDB) created by the military to represent the 'opposition' in Congress. Thereafter, unions remained integral parts of the Party of the Brazilian Democratic Movement (the successor of the MDB) and the newly created Workers' Party, both of which governed in alliance with the right-of-centre Liberal Front Party during 1985-1990 and 2003-present, respectively. See Skidmore (1988); Fausto (1999); Bethell (2008).

European countries. Secondly, by making public services and social security (state and union provided) available only to workers with formal employment contracts, as was largely the case until the 1970s, capital managed to expand the productive attributes of these workers without expending resources in the rest of the working-class. Thirdly, state direct involvement in the regulation of wages, crucially during 1965-79, allowed their rapid contraction when extra surpluses were needed to complement the land rent available for appropriation.

4.7) Summary and conclusions

The present chapter analysed the evolution of a number of key macro and microeconomic variables that jointly express the specific characteristics and the transformations of the Brazilian and Korean processes of capitalism development throughout the period under study. Some of these variables reveal the relationship between global industrial capital and its Brazilian and Korean portions. Others express the characteristics and transformations in the productive attributes of the Brazilian and Korean labour-forces that realised that relationship. The present chapter also briefly analysed the general evolution of labour market and political institutions that have mediated the specific reproduction of these workforces as forms of realising the global integration of capitalism through the evolving international division of labour. The second part of this thesis will rely on this information to pursue a political economy analysis of the historical development of the Brazilian and Korean processes of capital accumulation. In doing so, it will deepen the analysis of the transformations in labour market and political institutions presented above.

This chapter found that the specific characteristics of the Brazilian and Korean processes of capitalist development, explained previously, manifested themselves in different evolutions of their growth patterns, of their export activities, and of the characteristics and productivity of their labour-forces. It was shown that the productivity of Korean industrial labour increased strongly after the mid-1960s transformation of the country's economic formation and got increasingly closer to world market leaders. Throughout this period Korean industrial exports expanded massively and economic growth accelerated and remained robust while the productive attributes of the local labour-force undertook a substantial transformation. It was also shown that the evolution of these variables in Brazil was far more modest, expressing the specific

characteristics and limitations of the local process of capitalist development. After growing strongly during much of the pre-1980 period, the performance of the Brazilian economy slowed markedly as the land rent and its complementary sources of extraordinary social wealth became incapable of compensating for the growing productivity gap between local industrial labour and world market norms. As growth slowed, a new source of extraordinary profits emerged, namely, the payment of labour-power below its value.

Appendix A4

Tables

Table A4.1

Exports

	Total exports (in millions of US$)		Total exports (% of GDP)		Manufactures exports (% of merchandise exports)		Industrial exports (in millions of US$)	
	Brazil	Korea	Brazil	Korea	Brazil *	Korea	Brazil **	Korea
1955	1,423	18	17.74	2.43				
1956	1,482	25	16.48	3.47				
1957	1,392	23	13.37	2.85				
1958	1,243	14	9.48	1.60				
1959	1,282	20	9.15	2.01				
1960	1,269	32	8.07	2.85	-			
1961	1,403	41	7.65	3.21	-			
1962	1,214	56	6.21	3.92	3	18	37	10
1963	1,406	87	7.30	4.61	3	45	42	39
1964	1,430	118	7.32	5.14	5	47	205	55
1965	1,596	173	8.83	7.92	8	59	284	103
1966	1,741	251	7.84	8.98	7	61	293	152
1967	1,654	321	7.21	10.29	10	67	343	214
1968	1,881	457	6.42	11.83	8	74	381	338
1969	2,311	624	6.60	12.49	10	76	495	475
1970	2,739	836	6.41	13.53	13	77	665	641
1971	2,904	1,067	5.95	15.11	15	82	822	872
1972	3,991	1,625	6.89	21.49	19	84	1,222	1,360
1973	6,199	3,221	9.09	31.71	20	84	1,942	2,706
1974	7,951	4,462	9.82	35.31	24	85	2,263	3,777
1975	8,670	4,945	9.22	32.88	25	81	2,585	4,025
1976	10,128	7,716	9.04	41.73	23	87	2,776	6,747
1977	12,119	10,048	9.92	42.03	25	85	3,840	8,525
1978	12,658	12,722	8.94	42.11	33	88	5,083	11,229
1979	15,244	15,057	8.51	40.07	38	89	6,645	13,385
1980	20,132	17,512	8.30	44.40	37	90	9,028	15,684
1981	23,293	21,268	9.72	46.01	39	90	11,884	19,146
1982	20,175	21,853	7.62	41.29	38	91	10,253	19,920
1983	21,899	24,446	8.94	35.79	39	91	11,276	22,222
1984	27,005	29,245	9.47	34.48	41	91	15,132	26,678
1985	25,639	30,282	7.69	31.18	44	91	14,063	27,651
1986	22,349	34,715	6.26	29.18	48	92	12,404	31,909
1987	26,224	47,281	7.65	33.55	50	92	14,839	43,664
1988	33,789	60,696	10.42	35.40	53	93	19,188	56,494
1989	34,383	62,377	9.65	31.47	54	93	18,634	57,964
1990	31,414	65,016	10.18	26.58	52	94	17,011	60,805
1991	31,620	71,870	9.44	23.75	55	93	17,757	66,719
1992	35,793	76,632	10.97	22.11	57	93	20,754	71,141
1993	38,555	82,236	10.77	20.49	59	93	23,437	76,593
1994	43,545	96,013	12.63	20.38	55	93	24,959	89,617
1995	46,506	125,058	11.74	21.99	54	93	25,565	116,703
1996	47,747	129,715	10.62	19.95	54	92	26,411	119,832
1997	52,986	136,164	10.60	18.76	54	91	29,192	123,883
1998	51,120	132,313	9.94	19.23	55	91	29,380	120,835
1999	48,013	143,685	8.74	17.75	54	91	27,331	131,414
2000	55,119	172,268	9.32	19.05	59	91	32,559	156,331

Table A4.1

Exports

	Total exports (in millions of US$)		Total exports (% of GDP)		Manufactures exports (% of merchandise exports)		Industrial exports (in millions of US$)	
	Brazil	Korea	Brazil	Korea	Brazil *	Korea	Brazil **	Korea
2001	58,287	150,439	9.41	15.44	54	91	32,959	136,470
2002	60,439	162,471	9.83	14.52	53	92	33,069	149,733
2003	73,203	193,817	12.03	16.10	52	93	39,764	179,623
2004	96,678	253,845	14.67	19.08	54	92	53,137	233,989
2005	118,530	284,419	17.66	19.81	54	91	65,353	258,365

Source: Tables C.3, C.16 and C.17
Note: * = does not include semi-manufactured products; ** = includes semi-manufactured products

Table A4.2

Industrial value-added and GDP in US$ PPP

	Industrial value-added (in millions)		Value of industrial exports (% of industrial value-added)		GDP in millions	
	Brazil	Korea	Brazil	Korea	Brazil	Korea
1955					8,023	741
1956					8,993	721
1957					10,405	808
1958					13,115	875
1959					14,018	997
1960					15,718	1,125
1961					18,341	1,279
1962	4,773	173	0.78	5.91	19,538	1,427
1963	4,754	246	0.88	15.95	19,251	1,886
1964	4,726	332	4.33	16.56	19,549	2,295
1965	4,113	372	6.90	27.56	18,069	2,184
1966	5,049	465	5.80	32.69	22,208	2,794
1967	5,059	507	6.78	42.15	22,946	3,118
1968	6,865	630	5.54	53.66	29,299	3,862
1969	8,300	820	5.96	57.99	35,036	4,996
1970	10,519	990	6.32	64.72	42,699	6,181
1971	12,336	1,130	6.66	77.20	48,830	7,063
1972	14,988	1,337	8.15	101.67	57,946	7,563
1973	19,471	2,057	9.97	131.56	68,201	10,159
1974	23,934	2,458	9.45	153.63	81,007	12,638
1975	28,064	2,904	9.21	138.62	94,082	15,041
1976	32,995	3,887	8.41	173.59	112,081	18,488
1977	34,533	4,982	11.12	171.11	122,122	23,906
1978	41,512	6,367	12.24	176.38	141,659	30,214
1979	53,273	8,017	12.47	166.96	179,176	37,577
1980	73,919	8,411	12.21	186.48	242,523	39,443
1981	71,179	10,078	16.70	189.97	239,526	46,229
1982	81,366	11,531	12.60	172.76	264,592	52,923
1983	72,185	15,464	15.62	143.70	244,832	68,296
1984	87,158	20,345	17.36	131.13	285,017	84,817
1985	108,235	23,053	12.99	119.95	333,320	97,116
1986	109,435	29,986	11.33	106.41	356,737	118,951
1987	102,493	37,002	14.48	118.00	342,993	140,943
1988	97,218	45,739	19.74	123.51	324,290	171,441
1989	104,398	50,292	17.85	115.26	356,438	198,183
1990	70,468	57,985	24.14	104.86	308,688	244,631
1991	73,161	72,580	24.27	91.93	334,999	302,589
1992	76,052	80,688	27.29	88.17	326,281	346,630
1993	93,292	93,889	25.12	81.58	358,132	401,279
1994	81,795	111,404	30.51	80.44	344,818	471,073
1995	64,381	136,804	39.71	85.31	396,125	568,783
1996	66,463	150,023	39.74	79.88	449,574	650,310
1997	73,729	163,910	39.59	75.58	500,092	725,674
1998	71,470	163,496	41.11	73.91	514,249	687,990
1999	77,170	194,879	35.42	67.43	549,538	809,649
2000	88,220	225,382	36.91	69.36	591,436	904,394

Table A4.2

Industrial value-added and GDP in US$ PPP

	Industrial value-added (in millions)		Value of industrial exports (% of industrial value-added)		GDP in millions	
	Brazil	Korea	Brazil	Korea	Brazil	Korea
2001	91,131	225,640	36.17	60.48	619,189	974,254
2002	89,310	250,179	37.03	59.85	615,136	1,119,255
2003	94,833	263,976	41.93	68.05	608,448	1,203,592
2004	108,663	317,666	48.90	73.66	658,819	1,330,136
2005	104,158	338,048	62.74	76.43	671,033	1,436,037

Source: Tables C.3, C.16 and C.17

Table A4.3

Average years of schooling (working age population)

	Korea	Brazil	Sao Paulo	USA
1944	0.6			
1960	3.3	2.1	3.9	11
1966	4.5			
1970	4.8	2.9	3.3	
1973		3.2		12
1974	5.6			
1980		4.2	4.4	
1987	8	5.3		13
1991		5.4	5.8	
1999	9			13
2001		6.0	6.9	
2002		6.1	7.2	
2003		6.3	7.3	
2004		6.4	7.4	13.3
2005	11.2	6.5	7.5	

Source: Ipeadata for Brazil; McGinn, et al. (1980: 109) for Korea (1944-1974); Iñigo Carrera (2008: 92) for Korea 1987 and 1999, and for USA 1960-1999; Ministry of Education and Department of Human Resources (2007: 22) for Korea 2005; OECD Family Database for USA 2004.
Note: The values for Korea (1944-74) were calculated by taking the weighted average of the average of each category (0; 1-6; 7-9; 10-12; 13-14; 15+, years) of educational attainment

Table A4.4

Students per teacher

	Primary education			Secondary education				
	Korea	USA	Brazil	Korea	Korea #	Korea ##	USA	Brazil
1960	58.6			*33.95*	40.7	27.2		
1965	62.4		26.1	*34.75*	39.3	30.2		10.2
1970	56.9		24.3	*36.05*	42.3	29.8		8.9
1975	51.8		21.8	*37.3*	43.2	31.4		14.5
1976		20	22.7				18	14.7
1977			22.9					14.5
1980	47.5			*39.2*	45.1	33.3		
1985	38.3			*35.5*	40	31		
1991	35.6		22.53	25.23				14.54
1998	30.9	15.68		22.69				
1999	30.9	15.41	25.95	22.13			14.92	22.62
2000	32.2	15.01	24.80	21.02			14.61	22.12
2001	32.1	15.44	22.97	19.91			15.16	19.33
2002	32.0	14.83	24.05	18.24			14.88	19.12
2003	31.3	14.81	21.57	17.68			14.92	16.73
2004	30.1	14.21	21.39	17.76			14.98	16.00
2005	29.0	14.13	21.04	18.04			14.94	
2006	27.9	13.81						

Sources: Correa do Lago (1983); World Development Indicators (2008); McGinn (1980); Cho and Breazeale (1991: 568).
Notes: # = Middle-school; ## = High-school

Table A4.5

Education expenditure (% of GNI)

	Korea	USA	Brazil
1970	2.65	7.45	3.60
1971	2.13	7.44	3.60
1972	2.13	7.44	3.60
1973	2.13	7.44	3.60
1974	2.13	7.44	3.60
1975	1.62	7.42	3.60
1976	2.38	7.04	3.60
1977	2.38	7.04	3.60
1978	2.38	7.04	3.60
1979	2.38	7.04	3.60
1980	3.14	6.65	3.60
1981	2.74	6.43	4.10
1982	5.65	6.64	4.35
1983	3.59	6.63	3.11
1984	3.52	6.48	2.86
1985	3.55	4.49	3.40
1986	3.32	6.75	4.19
1987	3.26	4.56	4.23
1988	2.65	4.67	4.27
1989	2.94	4.68	4.55
1990	3.08	4.75	4.63
1991	3.14	5.09	4.63
1992	3.35	5.43	4.63
1993	3.52	5.26	4.63
1994	3.70	5.36	4.63
1995	3.68	4.79	4.72
1996	3.36	4.79	4.23
1997	3.20	4.79	4.23
1998	3.13	4.79	5.02
1999	3.06	4.79	4.18
2000	3.31	4.79	4.17
2001	3.31	4.79	4.16
2002	3.57	4.79	4.09
2003	3.73	4.79	4.19
2004	4.04	4.79	4.29
2005	4.04	4.79	4.29
2006	4.04	4.79	4.29

Source: World Development Indicators

Table A4.6

Per capita expenditures in education (in US$ PPP)

	Korea	USA	UK	Japan	Finland
1997					
Elementary	3,308	5,718	3,206	5,202	4,639
Secondary	3,518	7,230	4,609	5,917	5,065
Higher	6,844	17,466	8,169	10,157	7,145
1999					
Elementary	2,838	6,582	3,627	5,240	4,183
Secondary	3,419	8,157	5,608	6,039	5,863
Higher	5,356	19,220	9,554	10,278	8,114
2001					
Elementary	3,714	7,560	4,415	5,771	4,708
Secondary	5,159	8,779	5,933	6,534	6,537
Higher	6,618	22,234	10,753	11,164	10,981

Source: Huh (2007a: 67)

Table A4.7

Production workers and hours worked

	Production workers / all workers (man.)			Hours worked per year			Hours worked in manufacturing	
	Korea	Brazil	USA	Korea	Brazil	USA	Korea	USA
1960	0.84	0.80	0.75	2,269	2,134	1,956		1,943
1961		0.77	0.74	2,235	2,135	1,942		1,945
1962		0.77	0.74	2,240	2,136	1,958		1,964
1963		0.83	0.74	2,235	2,137	1,946	2,825	1,968
1964		0.81	0.74	2,165	2,138	1,953	2,856	1,974
1965		0.83	0.74	2,259	2,139	1,972	2,960	1,989
1966		0.81	0.75	2,245	2,141	1,981	2,976	1,995
1967		0.81	0.74	2,273	2,142	1,958	2,919	1,967
1968		0.82	0.74	2,315	2,143	1,953	2,903	1,956
1969		0.81	0.73	2,367	2,144	1,953	2,862	1,947
1970	0.82		0.68	2,273	2,145	1,909	2,789	1,903
1971	0.82		0.70	2,329	2,129	1,893	2,717	1,906
1972	0.82		0.71	2,386	2,112	1,889	2,697	1,937
1973	0.81	0.82	0.71	2,428	2,096	1,887	2,683	1,940
1974	0.81	0.81	0.70	2,475	2,080	1,859	2,607	1,902
1975	0.81		0.68	2,494	2,064	1,826	2,635	1,881
1976	0.81	0.85	0.69	2,569	2,048	1,820	2,743	1,899
1977	0.81	0.85	0.68	2,541	2,032	1,819	2,762	1,903
1978	0.81	0.85	0.69	2,569	2,016	1,827	2,765	1,906
1979	0.80	0.85	0.68	2,555	2,000	1,826	2,713	1,897
1980	0.80		0.65	2,541	1,985	1,812	2,772	1,867
1981	0.80	0.83	0.64	2,527	1,974	1,795	2,802	1,873
1982	0.79	0.84	0.63	2,635	1,963	1,783	2,806	1,834
1983	0.78	0.85	0.63	2,612	1,952	1,792	2,838	1,891
1984	0.78	0.85	0.63	2,593	1,942	1,808	2,834	1,919
1985	0.78		0.63	2,593	1,931	1,813	2,825	1,914
1986	0.79		0.61	2,536	1,920	1,794	2,875	1,913
1987	0.80		0.62	2,607	1,910	1,797	2,838	1,920
1988	0.80	0.73	0.62	2,621	1,899	1,811	2,765	1,940
1989	0.79	0.73	0.61	2,569	1,889	1,825	2,661	1,940
1990	0.79	0.72	0.61	2,527	1,879	1,807	2,615	1,930
1991	0.78		0.60	2,511	1,874	1,796	2,589	1,914
1992	0.75	0.73	0.61	2,491	1,869	1,786	2,560	1,940
1993	0.74	0.73	0.63	2,485	1,865	1,802	2,560	1,966
1994	0.78	0.74	0.61	2,484	1,860	1,816	2,561	1,984
1995	0.78	0.73	0.61	2,497	1,855	1,832	2,585	1,969
1996	0.79	0.75	0.61	2,490	1,850	1,828	2,542	1,964
1997	0.79	0.76	0.61	2,439	1,846	1,839	2,511	1,981
1998	0.74	0.76	0.61	2,351	1,841	1,850	2,419	2,100
1999	0.78	0.75	0.62	2,358	1,841	1,856	2,611	2,113
2000	0.79	0.76	0.62	2,377	1,841	1,855	2,579	2,094
2001	0.78	0.77	0.62	2,366	1,841	1,831	2,527	1,928
2002	0.77	0.77	0.59	2,327	1,841	1,812	2,495	1,932
2003	0.77	0.77	0.59	2,298	1,841	1,788	2,489	1,930
2004	0.76	0.76		2,260	1,841	1,789	2,478	1,947
2005	0.75	0.77		2,222	1,841	1,785	2,451	1,936

Source: Ratio of production to all workers from Amsden (1989: 171) for 1960 Korea and ILO for 1970-2005; from the Annual Industrial Survey for Brazil; from US Census Bureau for USA. Hours worked in all sectors from Groningen Grown and Development Centre (GGDC) 'Total economy' database for Korea, Brazil and USA. Hours worked in manufacturing from GGDC 'ICOP Industrial' database for Korea 1963-98; from Korea Ministry of Labour for Korea 1999-2007; from NIPA Tables for USA 1960-2005.

Table A4.8

Labour force with tertiary education (% of total)

	Korea	Brazil	USA
1990	14		
1991	15		
1992	16	6	52
1993	18	6	
1994	18		
1995	19	6	56
1996	20	7	56
1997	20	7	56
1998	23	7	57
1999	24	7	57
2000	24		
2001	25		
2002	27		
2003	30		
2004	31		
2005	32		
2006	34		

Source: KOSIS (Korea), World Development Indicators (Brazil), US Census Bureau (USA)

Table A4.9

Scientists and engineers in R&D (per million people)

	Korea	Japan	Brazil	UK	France	USA
1980	484	3,778			1,391	2,859
1981	536	3,934	175	2,254	1,580	2,973
1982	725	4,048	256	2,271	1,658	2,993
1983	808	4,156	299	2,251	1,698	3,047
1984	921	4,425	362	2,283	1,790	3,332
1985	1,017	4,538	391	2,314	1,855	3,512
1986	1,141	4,737		2,361	1,893	3,671
1987	1,267	4,840		2,353	1,961	3,744
1988	1,344	5,016		2,397	2,053	3,811
1989	1,560	5,175		2,319	2,135	3,675
1990	1,645	5,395		2,311	2,186	
1991	1,762	5,558		2,217	2,267	3,743
1992	2,032	5,671		2,263	2,475	
1993		5,138		2,413	2,536	3,676
1994	2,637	6,293		2,441	2,583	
1995	2,235	5,368	168	2,504	2,607	
1996	2,193	4,909		2,448	2,659	

Source: OECD Science, Technology and R&D Statistics

Table A4.10

Scientific and technical journal articles (per million people)

	Korea	Japan	Brazil	UK	France	USA
1981	4	213	12	547	343	576
1985	10	245	11	570	334	579
1986	13	263	13	673	377	742
1987	16	253	12	646	362	712
1988	18	281	12	641	383	727
1989	24	297	14	669	402	759
1990	27	312	16	682	404	767
1991	31	319	17	696	413	767
1992	40	355	20	736	457	775
1993	50	348	18	736	456	759
1994	66	374	19	785	490	759
1995	84	375	21	784	499	726
1996	105	400	23	794	513	717
1997	126	408	27	787	521	696
1998	152	426	31	789	538	690
1999	182	436	34	797	535	674
2000	204	450	37	819	534	683
2001	232	441	40	771	517	668
2002	246	442	44	752	512	661
2003	280	448	46	759	504	675
2004	317	442	52	760	494	688
2005	340	434	53	757	498	692

Source: OECD Science, Technology and R&D Statistics

Table A4.11

Scientific and technical journal articles (per million employees)						
	Korea	Japan	Brazil	UK	France	USA
1982	45	455	24	944	675	1065
1983	51	462		984	689	1084
1984	65	510	30	1069	769	1100
1985	81	500	27	1080	774	1071
1986	106	538		1147	841	1058
1987	134	541	31	1136	845	1005
1988	165	575	35	1142	864	988
1997	198	582	41	1116	883	950
1998	257	611	48	1114	903	937
1999	305	632	52	1118	892	913
2000	333	652		1138	872	925
2001	377	639	61	1068	832	918
2002	393	645	67	1045	822	925
2003	450	652	70	1049	820	956
2004	501	639	79	1052	805	959
2005	535	625		1048	812	963

Source: OECD Science, Technology and R&D Statistics
Note: Values in Table A4.10 were standardised using employment rates

Table A4.12

Labour costs in US$ and productivity in manufacturing

	Korea as % of USA			Brazil as % of USA		
	Cost*	Cost**	Productivity	Cost*	Cost**	Productivity
1955	3.66		6.03		18.11	16.30
1960	2.88		7.55		17.46	21.49
1965	2.57		5.83		16.11	18.91
1966	2.82		6.63		14.85	21.66
1967	3.35		6.87		16.25	21.54
1968	3.87		7.79		15.31	23.15
1969	4.73		8.99		15.30	24.50
1970	5.27	5.63	9.90	21.54	16.52	26.89
1971	5.59	6.27	10.71	19.69	15.02	26.66
1972	5.48	5.58	11.13	22.44	17.05	26.60
1973	5.64	6.31	12.46	23.79	18.09	25.27
1974	6.95	6.97	14.49	26.80	20.45	23.69
1975	6.50	5.90	14.50	24.52	18.86	23.09
1976	7.72	6.85	14.62	26.36	20.52	23.70
1977	9.33	7.94	16.04	27.64	21.92	22.85
1978	11.43	9.78	18.28	30.46	24.75	23.54
1979	13.74	11.66	20.53	31.03	25.26	24.79
1980	12.04	10.85	20.22	27.66	22.07	25.75
1981	11.57	11.25	23.18	29.08	23.49	24.69
1982	11.47	10.18	21.63	28.72	22.83	25.09
1983	11.57	10.33	22.75	17.66	14.23	24.22
1984	11.64	11.02	25.09	14.41	11.70	25.22
1985	11.47	9.82	23.84	16.22	12.98	24.77
1986	11.90	10.59	24.72	18.28	14.38	23.69
1987	14.13	11.95	25.17	21.18	16.66	22.97
1988	18.93	15.97	27.19	17.68	13.82	22.45
1989	26.45	18.31	28.15	32.51	25.48	22.54
1990	29.49	19.78	29.96	28.24	22.47	20.94
1991	33.00	22.31	31.95	21.25	16.76	22.26
1992	36.09	24.17	35.18	21.34	16.53	21.80
1993	38.43	26.72	38.04	22.49	17.55	23.30
1994	42.31	28.99	37.69	26.88	21.01	24.15
1995	46.84	35.65	39.63	32.58	25.55	24.33
1996	50.52	40.05	42.55	32.50	26.02	26.78
1997	47.60	37.54	45.53	31.71	25.36	28.23
1998	33.44	30.25	55.23	29.69	24.76	28.91
1999	46.20	37.39	56.77	17.99	14.17	29.33
2000	49.03	37.98	59.21	17.84	14.44	29.76
2001	43.62	26.56	55.93	14.49	10.29	29.35
2002	45.76	27.78	58.06	11.87	7.98	27.37
2003	48.78	28.21	58.48	12.21	7.52	26.41
2004	57.99	32.12	61.66	14.88	8.54	25.94
2005	60.86	37.26	64.44	17.49	11.19	24.50
2006	70.13	42.20	69.97	21.02	14.32	23.27

Source: Tables C.4, C.5, C.28 and C.30
Note: Cost* = manual workers; Cost** = all employees

Table A4.13

Korea: Wage differentials 1967-89

	M	C	SA	SE	P	E+MS	HS	JC	C	F	male
1967						63	100			46	100
1971	359	204	118	90	100	71	100			44	100
1972	382	183	133	91	100	68	100			46	100
1973	406	206	151	100	100	70	100			48	100
1974	354	197	130	92	100	71	100	136	208	44	100
1975	458	215	123	104	100	70	100	135	215	42	100
1976	474	222	112	103	100	69	100	139	216	44	100
1977	439	206	131	100	100	71	100	139	211	46	100
1978	431	181	125	99	100	72	100	141	214	45	100
1979	436	176	107	97	100	77	100	137	215	43	100
1980	395	162	89	100	100	77	100	131	213	44	100
1981	367	163	96	100	100	78	100	129	206	45	100
1982	345	158	134	102	100	79	100	126	199	44	100
1983	343	155	130	101	100	82	100	123	195	45	100
1984	337	153	128	101	100	83	100	119	191	46	100
1985	340	153	136	99	100	85	100	118	189	47	100
1986	318	150	130	96	100	86	100	114	184	48	100
1987	306	144	117	94	100	90	100	112	180	50	100
1988	282	136	113	95	100	90	100	108	167	50	100
1989	258	131	103	87	100	91	100	108	162	51	100

Source: Lee and Lindauer (1997: 60, 63)
Note: M = Managerial; C = Clerical; SA = Sales; SE = Service; P = Production; E+M = Elementary plus middle school; HS = High school; JC = Junior college; C = College; F = Female

Table A4.14

Korea: Wage differentials between College and High School Graduates (100) in 1978

	Korea	USA
Male	208	140
Female	214	128

Source: Source: Lee and Lindauer (1997: 61)

Table A4.15

Korea: Wage differentials 1993-2007

	O/T		O/P		-HS/U	HS/U	Col/U	S/L	I/R	F/M	B/W	B/A*
	monthly	hourly	monthly	hourly	monthly					hourly wage		
	total	total	total	total	total	total	Total	total	total	manufacturing sector		
1993	0.75	0.66	0.67	0.58	0.48	0.56	0.65	0.74		0.53	0.68	
1994	0.75	0.66	0.67	0.57	0.48	0.58	0.66	0.71		0.54	0.68	
1995	0.75	0.65	0.67	0.57	0.47	0.57	0.66	0.71		0.55	0.68	
1996	0.75	0.64	0.67	0.55	0.45	0.57	0.65	0.67		0.55	0.71	0.88
1997	0.75	0.64	0.67	0.55	0.45	0.57	0.65	0.69		0.56	0.70	0.87
1998	0.75	0.66	0.67	0.58	0.45	0.57	0.65	0.65	0.61	0.56	0.71	0.87
1999	0.75	0.65	0.67	0.57	0.46	0.57	0.63	0.63	0.59	0.55		0.87
2000	0.75	0.64	0.62	0.51	0.46	0.56	0.62	0.64	0.63	0.57		0.87
2001	0.74	0.64	0.63	0.52	0.44	0.56	0.62	0.64	0.62	0.58		0.87
2002	0.75	0.63	0.66	0.53	0.43	0.56	0.61	0.60	0.63	0.56		0.87
2003	0.74	0.62	0.64	0.52	0.42	0.56	0.61	0.60	0.62	0.56		0.87
2004	0.74	0.64	0.66	0.56	0.42	0.56	0.61	0.55	0.57	0.55		0.87
2005	0.78	0.67	0.65	0.53	0.43	0.55	0.60	0.53		0.56		0.87
2006	0.80	0.69	0.65	0.54	0.44	0.56	0.61	0.55		0.58		0.87
2007	0.79	0.67	0.67	0.55	0.46	0.54	0.6	0.54		0.58		0.87

Source: Occupational Wage survey and Economically Active Population survey, Ministry of Labor - BLS (*)
Note: O = operators; T – technicians; -HS = workers with below high School education; HS = high school; Col = college; U = university; S = small firms; L = large firms; I = irregular or temporary workers; R = regular or permanent workers; F = female workers; M = male workers; B = blue collar workers; W = white collar workers; A = all industrial workers.

Table A4.16

Brazil: Wage differentials in manufacturing 1962-84

	T/S	T/SM	T/US	S/U
1961 2	100	100	100	100
1962 1	95	103	109	119
1963 1	94	102	108	116
1964 1	85	91	88	106
1965 1	105	105	106	101
1965 2	106	100	111	109
1966 1	102	107	110	108
1966 2	97	101	116	118
1967 1	95	109	114	109
1967 2	98	109	122	114
1968 2	109	120	106	97
1969 1	108	113	112	99
1969 2	104	110	113	109
1970 1	107	118	124	115
1970 2	114	123	131	128
1971	117	127	139	123
1972	125	137	152	127
1973	128	142	162	139
1974	123	138	154	137
1975	117	136	146	135
1976	108	121	139	131
1977	109	123	154	145
1978	108	116	133	136
1979 1	108	115	124	133
1979 2	106	110	126	131
1980 1	103	112	122	123
1980 2	105	109	126	131
1981 1	106	107	114	126
1981 2	106	107	115	125
1982 1	99	102	109	121
1982 2	101	111	122	122
1983 1	100	113	110	129
1983 2	106	98	113	92
1984 1	97	92	108	125

Source: Zurron Ocio (1986)
Note: T = technicians; S = skilled workers; SM = semiskilled workers; U = unskilled workers

Table A4.17

Fatal injuries per 100,000 workers

	Brazil	Brazil #	USA	USA #	Korea	Korea #
1974						31
1975					55	44
1976						43
1977						45
1978	23					45
1979	23				43	36
1980	21				34	36
1981	19				37	34
1982	22				35	40
1983	19				37	40
1984	22				38	36
1985	21				38	32
1986	21				35	30
1987	23				33	27
1988	20				34	25
1989	19				26	20
1990	23				30	
1991	20				29	
1992	16		5	4	34	
1993	16		5	4	32	
1994	14		5	4		
1995	17		5	3		
1996	19		5	3		
1997	14		5	4		
1998	20		5	3		
1999	19		4	4		
2000		12	4	3		
2001			4	3		
2002			4	3		
2003			4	3		
2004			4	2		
2005			4	3		
2006			4			

Source: International Labour Organisation (Laborsta); Koo (2001)

Table A4.18

Monthly job separation rates in manufacturing

	Korea	Taiwan	Japan
1970	6.0		2.2
1971	5.4		1.9
1972	4.5		2.0
1973	4.5	3.7	1.9
1974	5.1	3.9	1.7
1975	4.4	3.3	1.5
1976	4.4	3.6	1.5
1977	5.1	3.2	1.4
1978	5.9	3.5	1.4
1979	6.3	3.9	1.4
1980	5.6	3.4	1.4
1981	5.4	3.9	1.4
1982	5.0	3.7	1.3
1983	5.0		1.3
1984	5.4		
1985	4.5		

Source: Park (1990: 401)

Table A4.19

Mortality rate, adult, (per 1,000 female adults)

	Female					Male				
	Korea	Brazil	USA	K/U	K/B	Korea	Brazil	USA	K/U	K/B
1960	341.0	222.4	130.6	2.6	1.5	405.6	294.8	233.3	1.7	1.4
1970	280.2	186.2	128.5	2.2	1.5	356.5	248.3	237.0	1.5	1.4
1980	155.9	160.7	102.5	1.5	1.0	269.8	221.1	194.8	1.4	1.2
1990	116.6	134.9	90.8	1.3	0.9	239.1	193.1	172.1	1.4	1.2
1997	66.5	140.0	85.2	0.8	0.5	173.4	264.5	149.2	1.2	0.7
2000	58.6	134.6	83.2	0.7	0.4	150.8	256.1	143.7	1.0	0.6
2002	53.4	131.0	83.8	0.6	0.4	135.7	250.6	144.3	0.9	0.5
2005	48.4	124.7			0.4	119.7	237.9			0.5
2006	46.8	122.6			0.4	114.3	233.7			0.5

Source: World Development Indicators
Note: K/U = Korea/USA; K/B = Korea/Brazil

Part II

Historical Development of the Brazilian and Korean Processes of Capital Accumulation between the mid-1950s and the mid-2000s

The first part of the thesis advanced several hypotheses about the economic structure and developmental experiences of Brazilian and Korean societies since the mid-1950s. Two main arguments were presented. First, it was argued that throughout the period under study, the process of capitalist development in Brazil revolved around the appropriation of the massive land rent available there. Land rent complemented other forms of surplus-value *normally* (i.e. *ordinarily*) available for appropriation by capital. Secondly, it was suggested that though initially structured in a relatively similar form to the Brazilian, though supported by much smaller primary sector surpluses, from the mid-1960s, the Korean economy came to be structured to produce several industrial goods for world markets, taking advantage of the large local supply of relatively cheap and disciplined labour.

The first part of the thesis also presented quantitative and qualitative evidence supporting these hypotheses. These included the measurement of land rents and intersectoral income transfers and the assessment of latter's importance in terms of the size of these economies and of the overall surpluses available there to support capital's valorisation. The first part of the thesis also included an analysis of the recent and contemporary transformations of the global steel, automobile and semiconductors industries and traced their development in Korea and Brazil since the 1950s, analysing and comparing the bases for the valorisation of individual capital there. This analysis was centred on the evolution of commercial strategies of firms and of state actions supporting them. These industrial sectors were chosen because they have been central not only to the transformations undergone by the Korean society during the last forty years or so, but also the continual reproduction of the limited structure of the Brazilian economy during the same period.

In addition, Chapter 1 and, to a lesser extent, Chapter 2 of the first part of the thesis put forward a brief and schematic analysis of the historical development of the main political, institutional and ideological forms of realisation of economic processes in the two countries. This second part of the thesis returns to these topics and adds substantially to the schematic analysis by pursuing a more detailed examination of the

historical evolution of both national economies and of the transformations in the political institutions and ideological cleavages that have mediated and shaped their developments. In doing so, it will show the intrinsic unity of the processes studied, revealing specific transformations in Korea and Brazil as part of the realisation of the globally integrated process of capitalist development.

The second part of the thesis is composed of five chapters, each covering a specific time period. Each chapter is divided into two sections, plus a conclusion. The chapter sections focus on the analysis of the economic and political developments of each country during the period in question. The brief conclusions included at the end of the chapters summarise the findings and compare the developments of the two countries. The first chapter covers the period from the mid-1950s to the mid-1960s; the second deals with the period between the mid-1960s and the early 1970s; the third analyses the period between the early and late 1970s; the fourth focuses on the period between the early 1980s and the early 1990s; the fifth concentrates on the period from the early 1990s to the mid-2000s.

Chapter 5
Brazil and Korea up to the Mid-1960s

Brazil: From national to developmentalist populism (1940s-1964)

In the mid-1940s, Brazilian society was at a critical juncture. The process of industrialisation had advanced steadily and considerably since it commenced in the late nineteen century. Manufacturing capacity had already expanded to include most non-durable and some durable consumer, as well as limited intermediate and capital goods production. The rapid development of the industrial sector was giving place to a change in occupational structures and, consequently, to a fast process of urbanisation, crucially in the Southeast of the country where most manufacturing was located.[1] Furthermore, from the 1930s onwards, the state had been increasingly involved in the regulation of the Brazilian economy. One characteristic of the Brazilian process of capitalist development, however, revealed already its underlying specificity. The manufacturing sector was largely populated by nationally-owned firms that were small by prevailing international standards, producing mainly for the domestic market.[2] These firms, it was argued above, compensated for their internationally low productivity levels through the appropriation of a portion of the land rent. These specific characteristics and trends would be reinforced strongly thereafter.

The end of the Second World War was followed by a strong expansion in land rent as the international price of coffee, the country's main export, doubled while US price ceilings were phased out.[3] Apart from this increased amount of extraordinary social wealth in the form of land rent, the Brazilian economy had also acquired a sizable, though blocked, British debt, resulting from sale on credit of agrarian commodities during the war, and a readily usable and substantial mass of foreign exchange reserves accumulated during the conflict.[4] The Korean War would, later on, disrupt the global markets for raw materials and sharply increase commodity prices again, prolonging the expansion of the Brazilian land rent. With these resources at hand,

[1] See Valle Silva (2008: 467-8)
[2] On the process of industrialisation in Brazil up to the mid-1940s, see Baer (1965: 12-34); Fishlow (1971). On the magnitude of land rent appropriated by capital during this period, see graph 2.3 in Chapter 2.
[3] See Besserman Vianna (1987: 22).
[4] See Abreu (2008a: 320-1).

the process of capital accumulation would then be reproduced on an enlarged scale. The local economy would thus undergo a period of fast growth through industrialisation.[5]

In effect, a large portion of the land rent materialised in the foreign exchange reserves and financial assets accumulated during the Second World War, together with that appropriated by the state in its aftermath and, to a much lesser extent, the funds borrowed externally, mainly from the USA. These resources constituted an important part of the resources used to nationalize foreign-owned public utilities, to create and later expand the activities of numerous state-owned companies, and to finance public investment programmes in social overhead capital.[6] Several SOEs producing industrial inputs were created during the ten years up to the mid-1950s. These included the Rio Dolce Valley Company (for iron ore extraction), the San Francisco Hydroelectric Company (for electricity generation and distribution), the National Steel Company (CSN), and, eventually, Brazilian Petroleum (Petrobras, the state monopoly for oil exploration, extraction and, later on, refining). Key institutions for scientific research and technological development were also established during this period, for example the Brazilian Society for the Progress of Science (1948), the National Council of Research (1951) and the Technological Institute for Aeronautics (1952). Additionally, the National Economic Development Bank (BNDE/S), the major public bank for financing infrastructural and large-scale industrial projects, was founded in 1952. Public utility companies nationalized during this period included the main railway and shipping companies as well as the ports.[7] Although, unlike private industrial firms, some of these SOEs had technical scales large enough to introduce the most modern methods of industrial production and organisation, from the beginning their accumulation capacities were limited due to their subordination to the requirements of providing cheap inputs, and constituting large markets, for private industrial capital.[8]

The sharp increase in international commodity prices and therefore in the magnitude of the land rent available for appropriation during the post-WWII and Korean War booms facilitated in Brazil not only the creation and development of SOEs. It also resulted in the continuous expansion of local industrial production destined for

[5] See graphs 4.2 and 4.4 in Chapter 4 on GDP and industrial value-added growth.
[6] See Avelãs Nunes (1991: 181); Abreu (2008a: 323)
[7] See Baer (1965: 61-8); Baer et al. (1973: 25-7); Serra (1982: 72-4); Abreu (2008a: 326-7, 333).
[8] On the contrary, the main electricity companies, Canada's Light and US's Amforp, and most Telecommunication companies, remained privately-owned until they were nationalized in the 1960s and 1970s, respectively. It was only then that prices of electricity in Brazil fell from internationally high levels. See Carneiro (2000) for the long-term changes in the electricity industry.

the small, highly protected domestic market.[9] Though several MNCs had been producing non-durable consumer goods and assembling durables (e.g. completely knock-down kits of automobiles) in Brazil since the 1920s, and expanded their activities thereafter, the bulk of the local industrial sector during this period was still composed of small nationally-owned firms. The land rent appropriated through the combination of a strongly overvalued currency,[10] market protection and state subsidies supported the process of capital accumulation.

After WWII, a liberal trade regime was combined with a strongly overvalued exchange rate to favour the re-equipment of local industry. In 1947, however, as foreign exchange reserves fell rapidly, a system of quotas was introduced to limit import demand and protect the domestic market by reducing the supply of foreign exchange used to purchase foreign goods competing with local productions.[11] These new foreign exchange and trade regimes were complemented with the Law of Similarity (passed in 1911 but made an effective instrument of industrial policy only in 1949), banning imports of goods that could be manufactured locally, in principle, at the same price and quality as their international competitors. In contrast, imports of capital and intermediate goods not produced locally could be purchased with an overvalued currency and were allowed in the country duty free.[12]

The reproduction of the Brazilian process of capitalist development through the expansion of small, mainly, nationally-owned industrial companies and large-scale SOEs came about not only through specific economic policies, but also through the development of specific labour market and political institutions. These facilitated substantial real wage increases in the industrial and public sectors, notably during the Korean War commodities boom, and the expansion of state provision of services. In the first place, the fast growth of small-scale industrial productions, and also of the provision of public services, resulted in the strong expansion of demand for labour-power. Industrial employment grew at around 5% p.a. during the first half of the 1950s.[13] Real wage increases were thus necessary to attract rural workers to expanding urban centres. Secondly, the development of the process of capital accumulation through ISI was already incorporating relatively modern technologies and extending to

[9] See Baer (1965: 69-77) on the evolution of the industrial sector during that period.
[10] See graph 2.1 in Chapter 2 for the evolution of the over/undervaluation of the Brazilian exchange rate.
[11] See Besserman Vianna (1987: 19-22); Avelãs Nunes (1990: 181-4); Abreu (2008a: 320-21).
[12] See Malan and Bergsman (1970: 173-74); Besserman Vianna (1987: 23-4).
[13] See table C.6 in Appendix C for the evolution of industrial employment in Brazil and Korea.

include increasingly complex productions, notably in state-sector firms. This process thus required the expansion of the productive characteristics of the local industrial workforce.[14] Finally, the widening and deepening of the domestic market for consumer goods was then required to absorb a rapidly expanding industrial output.[15] All these processes needed to manifest themselves in the transformation of the consumption patterns of the Brazilian working-class. The enlargement of consumption levels and overall improvements in the conditions of reproduction of the labour-force, however, would not come about smoothly, without political conflicts. On the contrary, this transformation, already initiated during the second part of the 1930s, was realised through the strengthening of trade union activism and working-class political intervention. This transformation would come about not only through an increase in real wages but also through the expansion of public sector expenditures in urban social services, including healthcare, education and pensions.[16]

Nevertheless, despite recurrent episodes of belligerence, during this period the mainstream trade union movement remained controlled, politically and financially, by the state and incorporated into the structure of the Brazilian Labour Party (PTB) or the Brazilian Communist Party (PCB) which after 1950 was frequently allied to the former. In effect, unlike during the pre-1930s period, when it had been heavily influenced by anarchist and socialist ideologies, the post-WWII trade union movement focused mainly on immediate economic goals and acted in many respects as an organ of the state in the provision of welfare for its members.[17] In national politics, it was allied, through the PTB, to the Social Democratic Party (PSD), representing politically the Brazilian industrial bourgeoisie and some sectors of the landowning class. Both parties had been created by different sectors of the Vargas administration at the end of the corporatist Estado Novo (1937-1945) to face the forthcoming 1945 general elections.[18] The constitution of an independent working-class party with the goal of gaining control of the state, as with Western European social-democratic parties, was not on the cards. On the contrary, an inter-class alliance with the national bourgeoisie in its 'fight' against landowners and 'imperialist' interests allied to them, then mainly represented politically

[14] See Wells (1983: 323-5).
[15] See Cardoso and Faletto (1979: 127-43); Wells (1983: 325-6).
[16] On the expansion of urban social services and social security, see Malloy (1979: 66-71, 91-105); Valle Silva (2008: 470-7); Lewis and Lloyd-Sherlock (2009: 116-9).
[17] See Mendes de Almeida and Lowy (1976: 104); Erickson (1979: 36-7); Malloy (1979: 58-60).
[18] See Skidmore (2007: 54-64); Bethell (2008: 88, 93-6).

by the National Democratic Union (UDN), was considered to be in the most immediate interest of the Brazilian urban working-class.[19]

Unsurprisingly, this inherently limited form of working-class political representation generated improvements in the conditions of reproduction of the labour-force that were far from universal. Public sector employees and those industrial workers in formal contract employment, both skilled and unskilled, were the main immediate beneficiaries. This was the portion of the labour-force performing the most complex industrial activities and constituted a market large enough to absorb the expanding manufacturing output. Rural workers and those wage-earners in the urban informal sector were not represented by the mainstream trade unions and political parties and hardly benefited from the increases in public sector social expenditures and unions' welfare programmes.[20]

The combination of an overvalued exchange rate, public sector activities, market protection and 'populist' political institutions constituted then the main forms of channelling a portion of the land rent to private industrial capital. In effect, a portion of the land rent equivalent to as much as 60% of the economy's overall surpluses was appropriated directly or indirectly by private (mainly industrial) capital and the state between 1947 and 1954, during Dutra's (1945-1950) and Vargas' (1950-4) governments, both supported by the PSD-PTB alliance.[21]

The expansion of the domestic market, which the growing land rent allowed during the late 1940s and the early 1950s, was so remarkable that, by the mid-1950s, it began to attract several industrial MNCs to the Brazilian economy.[22] These were then undertaking a process of overseas expansion similar to that pursued by US firms during the 1910s and 1920s. As the largest and fastest growing developing country markets, Argentina, Brazil and Mexico were among the largest recipients of this new wave of FDI.[23] Motor-vehicle firms were, again, leading the process. The smooth and widespread establishment of MNCs in the most dynamic branches of the Brazilian industrial sector, however, was not be fully accepted by the nationalistic branch of the populist movement in power under Vargas (1950-4). The early 1950s Vargas government had been mediating politically and ideologically the creation of SOEs and

[19] See Mendes de Almeida and Lowy (1976: 105); Bethell (2008: 95).
[20] On the limited impact of welfare policies during this period, see Malloy (1979: 91-113); Lewis and Lloyd-Sherlock (2009).
[21] See Grinberg (2008).
[22] See Newfarmer and Mueller (1975: 96-7); Cardoso and Faletto (1979: 157-8); Anglade (1985: 56-7).
[23] See Jenkins (1987: 5-8). See table C.37 in Appendix C for the inflow of FDI to Brazil and Korea.

the expansion of small nationally-owned industrial capital, both of which constituted a condition for the subsequent establishment of MNCs. Yet, their full-scale entrance in the Brazilian economy (i.e. the participation of foreign-owned capital as a main partner in the appropriation of the land rent) required different political and economic institutions. The change in the political forms of realisation of the process of capitalist development, necessary to mediate the transformations in its economic forms, would come about through a politico-economic crisis.

The Korean War had given place to a sharp increase in the prices of raw materials and, consequently, to an expansion of the Brazilian land rent, which had allowed the implementation of Vargas' nationalistic populist policies.[24] The end of the commodities boom led to the rapid deterioration of the Brazilian economy as the land rent available for appropriation began to contract sharply. The material base of support of Vargas's policies was thus being removed. The fall in international commodity prices was immediately reflected in the stagnation of the growth of export earnings and, thus, in Brazil's capacity to import and to fund large factor income deficits, even after the partial devaluation of the currency implemented in mid-1953 through the introduction of the so-called Auction System.[25] These emerging difficulties strengthened the idea held by many in the state, the business and academic sectors and international organisations that the full-blown promotion of FDI was needed both to accelerate and deepen the ISI process and to avoid the painful 'external bottlenecks' related to its financing.[26]

More generally, the contraction of the land rent required a rapid revision, partial or complete depending on the case, of policies that had been channelling it to economic agents other than landowners, notably industrial capital. These policies were then creating serious imbalances in the Brazilian economy. The prevailing strong overvaluation of the currency was sustaining the balance-of-payments deficit while the growth of the public sector deficit, largely resulting from the contraction of the land rent

[24] See Radetzki (2006) on the commodities boom during the Korean War.

[25] During the implementation of the Auction System, the monetary authority monopolised the purchase of foreign exchange and decided its sale to different categories of importers using a bidding system. The amount of foreign exchange allocated to each category of imports was decided on the basis of the overarching import-substituting programme. Equipment and raw materials not produced domestically were either exempted from the system or given priority in the allocation of foreign exchange. The price of foreign exchange used to import them was substantially below its value. Consumer goods that could be manufactured domestically received the opposite treatment. The so-called Auction System thus resulted in multiple exchange rates. See Kafka (1954); Malan and Bergsman (1970: 150-60); Abreu (2008a: 331-2).

[26] See Anglade (1985: 56); Bielschowsky (1996: 92-7, 122-5).

appropriated by the state, was manifesting itself in an increase in the inflation rate. The Vargas government, however, was hardly suited to represent politically any of the corresponding changes, most notably as they not only involved the increased participation of MNCs in the economy but also a contraction in industrial wages and the sharp adjustment of public sector's finances. In effect, the administration's half-hearted attempt to undertake such policy shift during 1954, when the difficulties began to surface, failed completely to control inflation and only raised pressure on the government.[27]

The first to leave government was João Goulart, the young Minister of Labour with close links to the trade unions, both those affiliated to the ruling PTB and to the still formally illegal PCB. Goulart had been appointed in mid-1953, at the peak of expansion of the Brazilian land rent. He resigned in early 1954, after the 100% increase in minimum wages he had proposed was vetoed by the conservative branches of the army. The resignation of Goulart and the subsequent implementation of a mildly orthodox economic plan, however, were not enough to placate the political opposition which was becoming increasingly vociferous. Economic growth faltered and inflation surged as public sector deficits were increasingly monetised. Conservative opposition to the Vargas government scaled up and became virulent. Responding to the pressure of its main bases of political support, the nationalist branches of the military and the official trade unions, the government reacted by increasing the stakes. Against the advice of his economic advisors, Vargas confirmed that he would apply Goulart's proposed wage hike. At the same time, he announced the partial nationalisation of the oil industry and

[27] The problem of increasing inflation has been a recurrent political issue in Brazilian history, especially after WWII. Increasing and uncontrolled inflation usually preceded sharp policy changes, sometimes including the collapse of entire governments. An inflationary process involves the redistribution of resources to those sectors of society who have the capacity to protect themselves against it from those who do not. In 1950s Brazil, and also afterwards, inflationary processes resulted largely from the expansion of the monetary base in excess of the demand for it. In the first place, this was necessary to cover the public sector deficit when state expenditures were larger than revenues, especially when the latter stagnated. Secondly, together with the Usury Law that set a ceiling of 13% p.a. to nominal interest rates, it turned the real return on savings into negative grounds (see table C.34 in Appendix C for the evolution of interest rates). Landowners, as renters, and wage-earners, through social security funds and current income if not adjusted frequently, tended to be net savers and thus particularly suffered from inflationary processes. Furthermore, when systems of fixed exchange rates prevailed, mounting inflation also increased the degree of exchange rate overvaluation and thus reduced landowners' capacity to appropriate a portion of the land rent. It is not surprising, then, that the ideological and political representatives of both sectors, notably of landowners, were among the leading voices against any signs of inflationary process. Rents control in the urban sector, usually in effect during the populist period, was the other side of interest rates ceilings. It was necessary to reduce the profitability of investments competing with fixed term bank deposits as the rampant inflation rates were turning the interest rate largely negative. Landowners were net investors in both markets; financial and real estate. Moreover, it helped keep real wages in the urban centres low.

the creation of the state monopoly for exploration activities, Petrobras.[28] A campaign of public support for the latter measure ensued and political tension increased. Furthermore, the government also threatened to take over foreign-owned electricity firms and set to implement a bill, passed in 1952, that limited the repatriation of profits earned by MNCs. Vargas argued that the repatriation of MNC profits was the main cause of the emerging economic crisis. Only a trigger was needed to produce the downfall of the government. This came when, in a bizarre episode, the most outspoken member of the conservative opposition was attacked by state security officials. The conservative opposition now gained the support of all but the most nationalist branches of the military. The finale was tragicomic. The military gave Vargas an ultimatum to resign. The coup, however, was averted as, on 24th August 1954, Vargas took his own life, leaving a note in which he accused the conservative opposition and foreign (i.e. US) interests for the troubles his government was facing. Popular support for the 'martyr' suddenly reappeared.[29]

João Café Filho, Vargas' conservative deputy, assumed the presidency to finish the term.[30] A military coup was no longer needed to change the course of state policies. On assuming control of the executive power of government, Café Filho formed a UDN-led conservative cabinet with a liberal economist in charge of the Ministry of Finance. The latter immediately implemented a set of orthodox monetary and fiscal policies, cutting public sector expenditures, increasing taxes and reducing credit to the private sector.[31] In 1955, the Brazilian economy contracted for the first time since the Great Depression of the 1930s and real industrial wages fell by 1% having grown 8.5% on average during the previous year.[32] With the intention of attracting foreign capital, allegedly to solve the external financing problems, the monetary authority issued Instruction 113 which not only authorized the importation of machinery by MNCs without foreign exchange cover and under a reduced tariff regime, but also allowed the entrance of second-hand and out-dated capital goods.[33]

[28] See Abreu (2008a: 333); Skidmore (2007: 131-6).
[29] On the events leading to Vargas' suicide, see Skidmore (2007: 136-42); Fausto (1999: 248-50); Bethell (2008: 116-9).
[30] By then, president and vice-president were elected separately in Brazil and could belong to different parties. Café Filho was a member of the populist Progressive Social Party (PSP) but heavily supported by the UDN. Due to health problems, however, he could not finish the term. See Skidmore (2007: 143-6).
[31] See Abreu (2008a: 334).
[32] See graph 4.10 in Chapter 4.
[33] See Serra (1982: 74-5); Avelãs Nunes (1990: 191); Maddison (1992: 28). See Shapiro (1994) for the case of the automobile industry, the largest importer of equipment under the auspices of Instruction 113.

Responding to the new political environment, the PSD-PTB alliance sought a 'balanced' ticket for the forthcoming presidential election. Juselino Kubitschek, governor of the state of Minas Gerais and well-regarded developmentalist with close links to the national industrial bourgeoisie, was nominated as PSD candidate for the presidency. Gourlart, Vargas' former Minister of Labour, representing the PTB, was selected Kubitschek's running mate for the vice-presidency. They won the election and, following a bitter constitutional dispute, assumed office.[34] In order to restart the process of economic growth and to accelerate the modernisation of the industrial sector, the new government launched a large-scale development programme, the so-called Targets Plan (1956-60). This ambitious Plan was based on recommendations contained in two reports produced, respectively, by the Joint Brazil-United Stated Commission for Economic Development (1953), and the United Nations Economic Commission for Latin America in association with the BNDE (1952). Aiming to compress fifty years development into five, the Plan set out thirty-one industrial and infrastructural targets. Among others, there were targets for the steel, coal, electricity and motor-vehicle industries and for the construction of roads, ports and schools. Moreover, a new capital, Brasilia, was to be constructed in the Centre-West of the country, as the 'synthesis' target. Accelerated development was to be achieved by the combination of private and public sector investments. Furthermore, the Targets Plan incorporated the promotion of foreign direct investments as state industrial policy.[35] MNCs from the USA and Western Europe were allocated a key role on the assumption that their participation would help close savings, foreign exchange and technology gaps. The outcome was that foreign-owned firms rapidly became predominant in the key, and heavily supported, motor-vehicle and white-goods sectors, as well as in the electrical, petrochemical and machinery industries.[36]

As already mentioned above, MNCs did not settle in Brazil with the technological conditions needed for successful competition in world markets. They entered the Brazilian economy on a scale suitable to cater for the relatively small and protected domestic market. Following nationally-owned capital, newly established industrial MNCs compensated the extraordinary costs, and thus potentially lower

[34] See Skidmore (2007: 146-58); Fausto (1999: 252); Bethell (2009: 119-26). The conflict ended when the 'legalist' branches of the military staged a 'pre-emptive' coup in order to block UDN's illegitimate attempts to avoid the inauguration of the Kubitschek-Goulart government on the grounds that they had received less than 50% of the votes.
[35] See Avelãs Nunes (1990: 188-93); Abreu (2008a: 337-40).
[36] See Evans (1979); Newfarmer and Muller (1975: 108-11); Avelãs Nunes (1990: 193).

profits, arising from their reduced scale of production, and the use of out-dated equipment, through the appropriation of a portion of the land rent. Special subsidies and tax exemptions were also added to the previously described forms of land rent appropriation.[37] Moreover, in 1957 a tariff reform was passed introducing ad-valorem duties to replace the system of multiple exchange rates and quotas. The new tariff regime not only increased the absolute level of protection but also established a graded structure by which imports of capital goods and industrial inputs not produced locally would pay duties usually lower than the degree of overvaluation of the exchange rate or would be exempted from paying taxes altogether.[38]

As would be common thereafter, the implementation of the Targets Plan came about through an institutional overhaul. The Development Council was formed to coordinate special industry 'executive groups', incorporating both private and public sector representatives. These groups were in charge of recommending, designing and implementing policies and regulatory frameworks necessary to promote the industries included in the Plan. Among the most active of these 'executive groups' were those for the motor-vehicles, naval construction, agricultural and road construction machinery, and heavy mechanical and rail transport equipment industries.[39] At the same time, the BNDE increased its participation in the allocation of credit and played a critical role in the implementation of the Targets Plan.[40] The Council and the BNDE were largely independent of ministerial control.

The Plan was partly funded with a portion of the land rent appropriated by the state through import taxes and the monopoly of the foreign exchange market. During the operation of the Auction System (1953-61), the average price at which the state sold foreign exchange was significantly above that it had paid for it to exporters (the so-called 'confisco cambial'). As the Plan's implementation progressed, economic growth recovered strongly. Industrial output, employment and wages continued their upward trend, only interrupted in 1955, and the 'populist alliance' strengthened, actively incorporating the still-illegal PCB to the bases of political support of Kubitschek's *developmentalist* government.[41] The land rent, though contracting during the second half of the 1950s, was still substantial and was now complemented by a sizeable inflow

[37] See Avelãs Nunes (1991: 188-93); Kolhi (2004: 183). See Shapiro (1994: 134-63) for the automobile industry.
[38] See Malan and Bergsman (1970: 173-4); Baer (1995: 56-8); Abreu (2008a: 341).
[39] See Avelãs Nunes (1990: 231-2); Abreu (2008a: 341).
[40] See Geddes (1990: 327-8).
[41] See Mendes de Almeida and Lowy (184: 106); Colistette (2007: 113-6).

of foreign capital in the form of equipment and loans to the state. During 1956-60, net capital inflows were equivalent to 3.8% of the economy's surpluses.[42] Moreover, the foundations erected during the previous years (i.e. investments in SOEs and social overhead capital) were sufficiently strong to help sustain the profitability of an expanded industrial sector.

By the end of the decade, however, international prices of Brazil's most valuable agrarian productions collapsed.[43] The land rent contracted further and this resulted in the reduction of public sector revenues. The Kubistchek administration, nevertheless, proceeded apace with the implementation of the Targets Plan, funding part of its expenditures with short-term privately contracted foreign loans and the rest through the expansion of money supply, monetizing up to 25% of the public sector budget. Unwilling to accept US government requirement to balance public sector's accounts, 'official' long-term loans at favourable interest rates were not then readily available to the Brazilian economy.[44] Under these weakening conditions, economic growth slowed and the inflation rate reached 40% in 1959.[45] The dismantling of most of the previous forms of appropriation of the contracting land rent thus began to be implemented by the Kubitschek administration.

An orthodox economic plan was then designed and implemented by Roberto Campos, Kubitschek's new Ministry of Finance, to reduce the public sector deficit and curb the inflation rate. The plan, however, was never fully implemented as it would have significantly hurt the Targets Plan as well as the government's main bases of political support, the national industrial bourgeoisie and the urban working-class. The full-scale adjustment was only being postponed, and despite government efforts to minimise unpopular recessionary policies, Jânio Quadros, the eccentric, but charismatic, ex-governor of São Paulo and UDN's last-minute candidate, managed to defeat the PSD-PTB alliance in the 1960 general election. Quadros promised to mend the bankrupted state and to end with the alleged underlying cause behind that problem, the ensuing corruption. Nevertheless, Goulart, the PTB incumbent vice-president, managed to get re-elected for the post.[46]

[42] See tables C.31 and C.37 in Appendix C for net inflows of credit and FDI.
[43] See Abreu (2008a: 345). Coffee is a perennial crop which takes 5-7 to render fruits.
[44] See Avelãs Nunes (1990: 206-11); Skidmore (2007: 174-82).
[45] See table C.1 in Appendix C.
[46] See Abreu (2008a: 343-4); Skidmore (2007: 187-92); Bethell (2008: 129-33).

Immediately after its accession to power in early 1961, the Quadros government eliminated the Auction System, unifying and devaluing the exchange rate for exports. It also reduced public sector expenditures with the intention to balance the budget.[47] This policy shift did not, however, end the appropriation of the land rent by social actors other than landowners. Under the argument that the devaluation of the currency had benefited the rural sector, Contribution Quotas (i.e. taxes) on coffee exports were introduced as new forms of land rent appropriation.[48] Moreover, the compulsory purchase of 'import bills', for a value equal to the imported goods, with 150 days maturity and yielding negative returns, partly replaced the Auction System as forms of channelling a portion of the land rent to the state.[49]

During 1961, however, the mass of the land rent began to recover while the inflow of loans expanded sharply as the USA launched the Alliance for Progress and the Quadros administration committed itself to reduce the public sector deficit.[50] The performance of the Brazilian economy thus started to improve. The political options Quadros personified no longer expressed fully the necessities of the process of capital accumulation. Indeed, the President himself had become a contradiction in terms. Elected with conservative (i.e. economically liberal) support, he was soon approaching national-developmentalist circles to design his economic strategy and launching a new 'independent' foreign policy. The gap between the President and his main (original) political allies thus slowly grew wider. In August, after less than 7 months in office, Quadros unexpectedly resigned. With this move, the 'eccentric' President attempted to recover UDN support in Congress, lost after establishing diplomatic relations with Cuba and the Soviet Union. To his surprise, however, Congress simply acknowledged his resignation and quickly discussed the name of his successor.[51]

As in 1954, the peculiarities of the Brazilian Constitution provided the necessary institutional flexibility to accommodate political changes mediating movements in the material bases of support of the local economy. Goulart, the populist vice-president from the PTB, was the first in the line of succession for the presidency. His close ties

[47] See Abreu (1990: 198-200) on Quadros' orthodox economic plan.
[48] Though some of those funds were used to stock part of the production in years of low prices, another portion of them, particularly in the case of coffee, ended up in the public treasury together with a portion of the proceeds of the sale of accumulated stocks. See Bacha (1978).
[49] See Portugal (1994: 240); Abreu (2008a: 348-9). Importers paid these financial costs with the gains enjoyed from purchasing foreign goods with a still overvalued currency.
[50] See Avelãs Nunes (1990: 210-1); Skidmore (2007: 195); Abreu (1990: 199); Abreu (2008a: 348-9).
[51] On Quadros' transformation and resignation, see Fausto (1999: 262-3); Skidmore (2007: 196-204); Bethell (2008: 135-7).

with the trade unions, however, made him strongly resisted by the most conservative sectors of the political elite, including those within the military. As it had tried with President-elect Kubistchek in 1955 when Vargas' suicide created a political stand-off, the UDN attempted to stop Goulart from succeeding Quadros. After heated parliamentary disputes and a peak in social conflicts, which included mass demonstrations, a compromise solution was finally agreed in Congress: Goulart would be allowed to assume power but the presidential system of government was to be replaced by a parliamentary one. This, it was hoped by many, would transform Goulart into a puppet of a Congress controlled by the conservative fraction of the PSD and the UDN. A plebiscite was planned for 1965 to consult the electorate on the matter.[52]

As soon as the new administration assumed control of the state apparatus, despite its limited power, it extended the appropriation of the land rent by reinforcing some of the policies implemented by the previous government or reintroducing others that had been suspended. The overvaluation of the exchange strengthened again and the compulsory 'import bills' were increased to 150% of the value of the related imports.[53] Contribution Quotas on coffee exports were increased and were also applied to cocoa overseas sales.[54] Public sector spending soared, credit supply expanded and a major SOE, Brazilian Electricity (Eletrobras) was finally created by merging existing regional publicly-owned companies and nationalising others that were privately-owned.[55] Similar plans were laid for the telecommunications industry. Under the ideological form of being in the interest of national autonomy, the purchase of foreign assets in this process transferred a portion of the expanding land rent to their previous owners.[56]

Economic activity recovered strongly in 1961, especially in the industrial sector, and, though it slowed thereafter, it remained on trend. Industrial value-added grew at 18.2, 4.5 and 5 per cent in 1961, 1962 and 1963, respectively, while GDP grew 9.7, 7.1 and 3.9 per cent during those years. The demand for labour expanded sharply as did the need for an enlargement of the domestic market where industrial capital sold its entire

[52] On the 1961 constitutional crisis, see Fausto (1999: 264-5); Skidmore (2007: 205-15); Bethell (2008: 137-40).
[53] See Abreu (1990: 202).
[54] Given the diversification of primary production into crops were the natural advantages (and therefore the land rent materialised on their prices) were relatively smaller (i.e. soybeans and oranges) than in the 'classical' tropical ones (i.e. coffee and cocoa) the strong overvaluation of the currency for exports became no longer the most convenient form of appropriation of the land rent.
[55] See Avelãs Nunes (1990: 213-7) on Goulart's fiscal and monetary policies; Carneiro (2000: 269-79) on the creation of Eletrobras.
[56] According to Skidmore (2007: 244-5), the payment proposed by Goulart's government was well above the companies' expectations.

production. The economic recovery thus manifested itself in the strengthening of trade unions and working-class parties, and, therefore, in the increase in real wages in the industrial and public sectors, crucially through the introduction of the 'thirteenth' wage to be paid at the end of the year. The independent General Confederation of Workers controlled by the still illegal, but now openly tolerated, PCB became actively integrated into the structure of political support for the populist government. Peasant leagues and unions of rural workers also strengthened and joined in support of the proposed land reform and the regulation of the rural labour market.[57] The Superintendency of Agrarian Policies was created in 1962 with the purpose of carrying out a land reform and a Rural Workers Bill was promulgated in 1963.[58] Students' unions became more radicalised in their support for the 'basic social reforms' now being proposed by the Goulart administration, which also included granting voting rights to illiterates and Army officers and freezing urban rents. The PTB made substantial gains in the 1962 Congressional elections, coming second after the PSD, and the referendum on the form of government was brought forward. In January 1963 the parliamentary system was ended.[59]

The economic recovery, however, was short-lived. After two years of relatively robust growth, in 1963 the net inflow of foreign interest-bearing capital, which had been equivalent to 2.2% of the net surpluses available for appropriation in the Brazilian

[57] See Erickson (1979: 97-130) on the increase working-class mobilisation during Goulart's government. See also Bethell (2008: 148-50) on the increase in political mobilisation for 'basic social reforms.'

[58] See Bethell (2008: 146). The proposed land reform acted, however, more as a threat to landowners (i.e. an ideological form of realisation of the policies appropriating a portion of the land rent by other social actors) than as an actual possibility. First, the structuralist argument that a land reform could have unblocked the process of economic development by expanding the domestic market is a contradiction in terms if that meant that the new unit of agrarian production, the peasant family, would have consumed the entire agrarian surpluses (i.e. profits and rent). This would have expanded domestic demand at the expense of reducing the mass of surpluses available for appropriation by industrial capital; without which the latter would have been unable to satisfy the former. Secondly, unlike in Korea, most agrarian production in Brazil had minimum efficient scales which were substantially higher than what a peasant family could tender. Even if the land reform did not imply the appropriation of all surpluses by the peasant family, it would have reduced their size by hurting labour productivity. Finally, a land reform was a highly politically 'expensive' option as it would have brought into question the very existence of private property in Brazil. On the contrary, the Rural Workers Bill resulted in increases in rural worker wages and thus expanded the domestic markets at the expense of the rent appropriated by landowners rather than that appropriated by industrial capital or agrarian capital's normal profits. In effect, when rural wages are below the value of agrarian labour-power while industrial sector wages are not, as it had probably been the case in Brazil before 1963, productive capitals are attracted to the agrarian sector and compete to appropriate the potentially higher than normal profits. These are thus transformed into land rent appropriated by landowners. Furthermore, the increase in rural wages resulting from the Rural Workers Bill guaranteed the retention of the necessary labour-force in the rural sector as a process of rapid migration to urban centres was taking place. See Correa de Lago (1990: 287) on the last argument.

[59] See Skidmore (2007: 220-23); Bethell (2008: 142-44).

economy during 1958-62, became negative.[60] Global interest rates had been increasing since their low 1961 levels, thus raising the cost of private loans. In turn, the tightening of US aid policy, crucially when dealing with 'nationalist' governments like Goulart's, and the worsening of the public sector accounts, made the attraction of 'official' loans increasingly difficult.[61] Moreover, after four consecutive record coffee harvests (averaging 4.35 million tons), a particularly acute frost in the state of Parana cut the 1963 production of Brazil's leading export by 25% and destroyed a large part of the stock of trees.[62] Yet, international coffee prices remained stagnant, at one-half the level of the early 1950s. Land rent appropriated by the state thus began to contract. Without these resources to support private capital accumulation, economic growth slowed sharply. Public sector's budget deficit mounted as expenditures were now growing faster than revenues and Goulart's fiscal policies were anything but restrained. Deficit monetisation rapidly fuelled the rate of inflation at the same time that the reversion of capital flows and the fall in exports were creating, again, a severe balance-of-payments crisis.[63]

Already in late 1962, as economic troubles began to emerge, Brazil's foremost structuralist economist, Celso Furtado, was named Special Advisor in Economic Affairs and charged with the task of developing a plan to control inflation without affecting economic growth and the pace of 'basic social reforms.' In line with structuralist ideas, Furtado's Three-year Plan for Economic and Social Development attempted to pursue a land reform in order to increase labour productivity in the agrarian sector and thus simultaneously reduce food prices and expand the domestic market for industrial goods. In contradistinction to structuralist prescriptions, Furtado's Plan also included a monetarist approach to inflation aimed at controlling aggregate demand. This would come about through the reduction of the public sector deficit by cutting subsidies, such as those granted through the low prices of wheat and fuel, and through the contraction of the supply of credit to the private sector. Both actions were aimed at restricting the growth of money supply. Yet, without enough political support to implement its 'structuralist' part and to sustain in time its 'monetarist' side, the Plan failed to achieve

[60] See graphs 2.13 and 2.17 in Chapter 2.
[61] See Skidmore (2007: 267-72); Abreu (2008a: 351) on US policy towards Goulart's government.
[62] See Bacha (1972: 164); Margolis (1979).
[63] See Abreu (2008a: 351-3); Avelãs Nunes (1990: 216) on the deterioration of macroeconomic conditions during Goulart's tenure.

its stated goals.[64] In 1963, GDP growth slowed markedly, falling to only 1% in per capita terms, and inflation accelerated from 49.5% in 1962 to 72.75%.[65] Industrial employment fell by 5%. Real wages, however, increased by 11%.[66] Industrial capital's rate of profit collapsed.[67] The Goulart government was becoming increasingly incapable of expressing politically the current state of the Brazilian process of capitalist development. Though Goulart had been allowed to hold onto power when the economy rebounded strongly, this would no longer be the case when it entered into crisis.

In 1964, the conflict between the magnitude of the extraordinary sources of social wealth available for accumulation, and industrial capital's requirement for them, became acute. Affected by the frost of the previous year, production of coffee dropped by a further 37%, while the international prices of other primary goods produced in Brazil, notably of cacao, began to fall.[68] The increase in coffee prices resulting from the impact of a second harvest failure was largely insufficient to compensate for the reduction in local output of that grain. On both sides, this resulted in a contraction of the land rent available for appropriation by industrial capital. External loans dried up rapidly to the point that during 1964 the net outflow of interest-bearing capital amounted to as much as 4.8% of total surpluses available in the Brazilian economy.[69] Moreover, labour productivity growth in the industrial sector during the previous years had lagged well behind world market evolutions, further expanding the productivity gap and thus the resources necessary to sustain capital's valorisation.[70]

The contraction of the land rent and the strong reversion of its complementary sources of extraordinary social wealth (i.e. the net inflow of interest-bearing capital lent to the state) were manifesting themselves in the stagnation of economic activity which was heavily dependent on them. Sooner or later, the new circumstances also needed to come about through the withdrawal of those policies through which the appropriation of those resources by industrial capital had taken course. A populist government heavily supported by trade unions, as that of Goulart, could hardly administer such sharp change in economic policies. Indeed, the contradictory nature of the ill-fated Three-year Plan designed by Furtado had made this evident.

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[64] See Abreu (1990: 206-7); Avelãs Nunes (1990: 212-3).
[65] See graph 4.4 in Chapter 4 and table C.1 in Appendix C.
[66] See graph 4.10.
[67] See graph 2.9 in Chapter 2.
[68] See graph 1.1 in Chapter 1.
[69] See graph 2.13 in Chapter 2.
[70] See graphs 4.6 and 4.7 in Chapter 4.

At the height of the crisis, Goulart did what was necessary to 'provoke' his own ouster. As Vargas before him, following the 'advice' of the military and labour branches of the ruling party, the administration's main bases of political support, and against the suggestions of his Minister of Finance, Goulart finally implemented a bill passed in late 1962 restricting MNC profit remittances, conceded a 100% wage increase for public sector employees, finally passed a decree allowing the expropriation without monetary compensation of unused rural properties and even proposed an urban rents 'reform'. On March 13th 1964, in front of an audience of half a million demonstrators, Goulart announced that he would implement a sweeping land reform and nationalise oil refineries.[71] The response was immediate; on March 31st a military coup, in the offing for several months, fully supported by the industrial bourgeoisie, much of the urban middle classes, landowners and the US Embassy, deposed Goulart without much resistance, and installed a 'provisional' government to 'purify' Brazilian democracy and 'protect' it from the threat of Communism and trade unionism. The military regime installed in 1964 would, however, remain in power for 21 years. PTB leader, and Goulart's brother-in-law, Brizola and the nationalistic branches of the military related to the party attempted to mobilise popular sectors and the army to pursue the same type of resistance that had proved successful in 1961, when defending Goulart's constitutional right to the presidency. This time, however, the underlying economic conditions were quite different.[72]

Different arguments have been advanced to account for the 1963-64 political and economic crises. Some writers argued that the crises resulted from the secular stagnation and exhaustion of the developmental model based on the program of import-substituting industrialisation. This 'model of development', it was claimed, expanded the demand for imports of industrial inputs and equipment, and thus reproduced the external bottlenecks it was supposed to supersede. This was particularly so since, for reasons of technical scales of production and the reduced size of the domestic market, it became impossible to substitute the importation of certain means of production.[73] Though popular, this thesis was subsequently disproved by the post-1968 experience.

[71] See Abreu (1990: 211); Avelãs Nunes (1990: 216-7); Bethell (2008: 154-6).
[72] See Skidmore (2007: 294-302); Fausto (1999: 275-9); Bethell (2008: 157-63); Bethell and Castro (2008: 168). See also Bethell (2008:151-3), on US long-standing political and financial support for Goulart enemies' destabilisation campaign.
[73] See e.g. Tavares (1977); Furtado (1973).

As will be seen, strong economic growth was then essentially based on a relatively similar 'model of development'.[74] Other writers, have claimed that the crisis of the Goulart government was largely politically engendered. Firms and foreign creditors were reluctant to invest in, and lend resources to, a country where trade unions, rural peasants and a nationalistic military were the government's key political support.[75] This account, however, fails to note that substantial amounts of foreign credit and FDI flew in Brazil until 1962, notably in the motor-vehicle industry, despite Goulart's populist credentials.[76] Moreover, none of these types of capital inflows recovered fully until the late-1960s, well into the rule of a military regime that had the political and military support of the US government, and the approval of foreign investors. More generally, the main problem with both types of explanations is that they fail to consider state policies and political institutions as *mediations* (i.e. forms of realisation) of the reproduction of economic processes (i.e. the process of capital accumulation) rather than their cause or origin.

Korea: From import-substituting to export-oriented Industrialisation (1955-1964)

In 1955, the Republic of Korea was recovering from the devastation produced during the 1950-53 war with the People's Democratic Republic of Korea (hereafter North Korea). Output growth, notably in the industrial sector, was increasing rapidly, albeit from a low base. The period of reconstruction and recovery lasted until well into the second half of the 1950s. "By 1957 the economy had largely recovered from the damage inflicted during the Korean hostilities, and for the first time in many years a measure of stability began to evince itself in all walks of national life, including house-keeping [sic], business enterprise and government administration."[77] Despite all the singularities associated with the reconstruction process, during this and the immediately subsequent period, the Korean economy was structured in a manner *qualitatively* similar to the Brazilian. The largest portion of social wealth, notably of industrial goods, was produced by small nationally-owned capitals and destined for the protected and small domestic markets. Exports were relatively limited and concentrated in primary, notably

[74] See Abreu (2008a: 356) on this point.
[75] See e.g. Gudin (1969); Simonsen and Campos (1979).
[76] FDI inflows in 1961-62 were only marginally below the records of 1956-60. See table C.37 in Appendix C.
[77] Economic Planning Board (1962: 27). See also Cole and Lyman (1971: 123-27).

mining, products. As in Brazil, this was not *simply* the result of the workings of free markets. State policies in Korea were instrumental as they attempted to foster the development of the domestic industrial sector by promoting the replacement of several previously imported goods by local productions.[78]

In Korea, as in most developing countries pursing policies promoting import-substituting industrialisation, agrarian surpluses made up a substantial portion of the resources used to sustain the process of capital accumulation in the industrial sector. The Korean experience with ISI had, however, differed from the Brazilian in at least two aspects, since its early stages. First, the Korean economy was probably the only one of those then integrating in the global division of labour through the production of primary goods not benefiting from the increase in the international commodity prices during the Korean War. Secondly, also in contrast to the Brazilian case, and to most developing countries, Korea had access, before, during and, crucially, after the military conflict with its northern neighbour to a mass of foreign aid that compensated for the destruction caused during the war.[79] In effect, during the period from 1955 to 1970, aid received from international donors, mainly the USA, in the form of cash or commodities amounted to as much as 20 billion of US$ at 2004 prices. This was equivalent to about 25% of Korean GDP during that period and to approximately 110% of primary (mainly agrarian) sector earnings appropriated by social subjects other than the (small) agrarian capitalists/landowners during that period.[80]

Three main policies were implemented by the Korean state to transfer a portion of primary sector surpluses and aid resources to industrial capital (and its junior partners commercial and service capital) during the second half of the 1950s and the early 1960s. First, an intricate system of multiple exchange rates acted as a medium for the transference of resources to the industrial sector. Secondly, market protection through the combination of quotas and tariffs simultaneously allowed their appropriation by specific portions of industrial and commercial capitals. Thirdly, different types of state subsidies were granted to the former to sustain its process of accumulation.[81]

[78] On the Korean experience with ISI during the 1950s, see Krueger (1979: chapter II); Hamilton (1986: 33-5).
[79] According to Cole and Lyman (1971: 22) the South Korean material losses during the Korean War amounted to two billion dollars, roughly the same as the amount received in aid between 1953 and 1960.
[80] See graph 2.16 in Chapter 2.
[81] See Cole and Lyman (1971: 187-8) for a summary of these policies.

The system of multiple exchange rates was introduced in 1950, during the Korean War, and remained in effect, though with modifications, until 1964.[82] Two different exchange rates prevailed for imports. The official exchange rate was used for any transaction related to US aid grants or to the expenditures undertaken by US forces stationed in the country. Given the low levels of exports at that time, these constituted the main sources of foreign exchange available to the Korean economy. Indeed, they were 14 times as valuable as exports between 1955 and 1960 and 3.5 times during 1961-64.[83] The official exchange rate was kept strongly overvalued in order to maximise the amount dollars received from the USA in the form of cash grants and to reduce the cost in the domestic market (i.e. in local currency) of aid commodities (mainly cotton, wheat, barley and sugar).[84] This had the effect of reducing production costs of consumer goods (e.g. textiles) using them as inputs and the cost of the urban labour-force as food was sold domestically below its international price, thus helping sustain industrial capital's profits. In the case of barley, the only 'aid commodity' produced locally in significant quantities, the low price was extended, through competitive pressures, to the portion of total supply produced domestically and thus constituted a form of transferring resources from the primary sector to the rest of the economy. A lower, but still overvalued, exchange rate prevailed for private sector imports, mainly made up of intermediate products and capital goods. In this way, the latter managed to appropriate a portion of aid resources in cash and of the primary surpluses materialised in exports. The purchase of foreign exchange for import purposes, however, was not free from restrictions. In mid-1954 an 'auction system' similar to the Brazilian was implemented to administer the allocation of foreign exchange. It lasted for only one year. Between mid-1955 and mid-1957, foreign exchange was allocated through a 'lottery' system. However, as foreign aid began to dry up, foreign exchange began to be allocated among bidders on the basis of the amount of national debt bonds they were willing to buy. As this type of financial investment yielded returns below alternative options, a portion of those resources was thus appropriated by the state. Finally, in mid-1958, the 'auction system' was reintroduced.[85]

[82] On the system of multiple exchange rates, see Frank et al. (1975: 28-36) and Krueger (1979: 43-54).
[83] See table A4.1 in Chapter 4 for the evolution of exports.
[84] Three fourths of aid was in commodities, half of which were agricultural products and the rest mostly fertilizers and petroleum products. See Haggard et al. (1991).
[85] See Krueger (1979: 65-9); Luedde-Neurath (1985: 60-1) on the allocation of foreign exchange for imports.

Different exchange rates also prevailed for exports, according to their destination. As in Brazil, exports were then mainly composed of raw or semi-processed materials such as tungsten, fish, seaweed and, occasionally, rice. Also as in Brazil, the average exchange rate for exports was kept strongly overvalued, though at varying levels, until 1964. The overvaluation of the currency for exports not only transferred a portion of the surpluses materialised in them to importers. It also, and crucially, reduced the price of exported goods in the domestic markets. To the extent that these were food products, the overvaluation of the currency for exports also helped to keep local nominal wages low. Industrial capital thus managed to appropriate a portion of the primary sector surpluses and have, *ceteris paribus*, its profits increased.

Tariffs and, crucially, quantitative restrictions were used to protect domestic producers and thus allow the appropriation of a portion primary sector surplus and US aid funds by industrial and commercial capital. Before 1957, non-tariff restrictions, prohibiting the importation of goods not approved by the government, constituted the main form of domestic market protection. Licences, however, could be obtained for 'less essential' goods not included in the list of those receiving automatic approval; though relatively high import taxes were levied on them. The system was revised semi-annually in order to allow for changes suitable to industry's evolving 'requirements.' Almost all equipment and intermediate goods bought with an overvalued currency entered practically duty free. Taking account for the emergence of new industrial productions, in 1957 the tariff system was reformed, becoming a more active instrument supporting the accumulation of industrial capital through import-substitution. Tariffs were lowered further for capital and intermediate goods not produced domestically, and were increased for locally manufactured goods.[86]

The collection of import taxes and the sale of national debt bonds, both paid for with an overvalued currency, as well as the administration of the 'auction system' for foreign exchange sales, directed to the public sector a portion of the resources received in the form of foreign (cash) aid and of primary sector earnings.[87] These, together with resources raised through the sale of US aid in the form of specie, made a substantial part

[86] See Cole and Lyman (1971: 187-8); Frank et al. (1975: 36-8); Westphal and Kim (1977: I-2); Krueger (1979: 47-52); Haggard el al. (1991: 854).
[87] Between 1953 and 1960 import tariff receipts were around 15.5% of the value of imports and approximately equal to 20% aid inflows. See Krueger (1979: 47-52) on custom duties.

of public sector revenues during this period. Taxes on income earned in the urban sector of the economy (falling either on capital or labour) were relatively low at this stage.[88]

These resources found their way to support the process of accumulation of industrial capital in different ways. Some resources were spent on rebuilding and expanding the stock of social overhead capital, like roads, ports and power plants,[89] which were used by industrial capital at subsidised rates (i.e. at prices that did not include the full cost of producing these goods and services).[90] In this way, industrial capital was largely exempted from the need to fund, with a portion of its profits, investments in the overhead capital it extensively used. Other resources were channelled through the provision of subsidised credit by publicly-owned 'developmental' banks.[91] Indeed, while commercial banks previously owned by Japanese interests were being re-privatized during 1954-57 after a period of public ownership, several new state banks were being created. These included the Korean Reconstruction Bank (KRB), which in 1969 would become the prominent Korean Development Bank (KDB), and the Korean Agricultural Bank (KAB). From its origin, the KRB/KDB became a major source of subsidised credit for the industrial sector. The KAB did not constitute a significant source of funds for agrarian productions until well into the second half of the 1960s.[92] Finally, some resources were channelled to local industrial capital through tax exemptions and by means of favourable assessments by tax officials.[93]

Widespread corruption and 'rent-seeking' were then inherent to the Korean process of capitalist development at this stage. The massive transference of relatively scarce resources to the industrial sector, necessary to support the profitability of an international uncompetitive capital, came about through the mediation of the state, in most cases through seemingly arbitrary means.[94]

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[88] See Cole and Lyman, 1971: 172-7); Hong (1979: 73-8). According to Krueger (1979: 74-5), in 1957, when foreign aid peaked, the procedures of the transformation of US aid into local currency amounted to 53% of government revenues whereas regular sources, mostly taxes, constituted 34% of them. Even during the first half of the 1960s, internal taxes were roughly equal to the funds raised through the sale of aid goods. See Brown (1973: 55); Hong (1979: 74). These figures, however, underestimate the impact of aid income on government revenues since they do not include those import taxes paid with an overvalued currency.

[89] See Cole and Lyman (1971: 192-3).

[90] See Brown (1973: 79).

[91] See Cole and Lyman (1971: 193-6).

[92] On the mainstream (i.e. regulated) Korean banking system during the 1950s, see Cole and Pak (1983: 50-5).

[93] See Cole and Lyman (1971: 176); Hong (1979: 82-3).

[94] High levels of corruption and rent-seeking did not arise from the 'closeness' of the economy as Krueger (1974) claims. Corruption would remain endemic in Korea after the partial opening of the economy in the

On these bases, economic growth in Korea accelerated between the end of the Korean War and 1958 – during the 'reconstruction' period. While the magnitude of primary sector surpluses was growing fast, as agrarian and mining production recovered strongly after the end of the war, the amount of foreign aid received reached unprecedented levels. As in Brazil, industrial production expanded faster than the rest of the economy, notably the food processing and textile industries (the infamous 'three whites', cotton, wheat and sugar processing) where most of the subsidisation was focused.[95] Also as in Brazil, almost all industrial output was sold in the protected domestic markets. Exports of manufactured goods, though promoted, remained insignificant until the early 1960s.[96] The subsidies exporters received, through cheap loans and the so-called export-import link,[97] were not enough to compensate for the overvaluation of the currency and the low level of labour productivity in the industrial sector.

Yet, despite the fast expansion undertaken during the second half of the 1950s, by the early 1960s the Korean process of industrialisation through import-substitution was already differing from the Brazilian in three significant ways. First, primary surpluses were largely complemented in supporting industrial capital's profitability not only, as noted, by foreign aid, but also through the payment of urban labour-power below its value. Surplus rural populations were sufficiently large, notably after the war, to avoid any significant growth of real industrial wages between 1954 and 1963, despite the rapid expansion in the demand for labour-power. Moreover, the shallow development of the industrial sector did not require any substantial increase in purchasing capacities to expand the productive characteristics of the labour-force and to enlarge the domestic market. In this context, those trade unions that developed remained structurally weak, even in comparison with their Brazilian counterparts. After being actively repressed, and its 'radical' elements violently purged during the 1945-8 US military government, a compliant trade union movement became one of the several legs of support for the nationalist and pseudo-populist, but conservative and increasingly autocratic, ruling Liberal Party (LP) headed by Syngman Rhee.[98]

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mid-1960s and the trade liberalisation programme of the 1980s. See Kim (1975); Clifford (1998); Kang (2002).

[95] See Cole and Lyman (1971: 155-6); Krueger (1979: 61-5); Haggard el al. (1991: 854).

[96] See table A4.1 in Chapter 4. See also Cole and Lyman (1971: 160).

[97] This system allowed exporters of specific goods to use the foreign exchange earned to import otherwise forbidden 'popular' commodities. See Frank et al. (1975: 38).

[98] See Kim (2000: 28-30).

Secondly, the magnitude of primary sector surpluses and foreign aid available for appropriation by industrial capital were not large enough to sustain the production of durable-consumer goods for the domestic markets as was already occurring in Brazil through the second half of the 1950s.[99] Foreign-owned industrial capital, consequently, did not venture in to Korea in any significant scale even when the 1960 Foreign Capital Inducement Act provided one of the most generous incentives schemes in Asia. FDI merely concentrated in few basic industries like oil refining.[100]

Thirdly, further expressing the limitations of the Korean process of capitalist development during its ISI stage, a portion of agrarian surpluses was appropriated by interest-bearing capital (i.e. moneylenders in the informal credit markets). Interest rates charged to small agrarian capital for the resources borrowed in the 'curb' (i.e. unregulated) markets to fund productive activities were largely in excess of those charged in other sectors of the Korean economy.[101]

Yet despite these essential differences, the Korean process of economic development shared a critical experience with the Brazilian. By the end of the 1950s, the pace of economic growth began to slow sharply while its main bases of support weakened. After peaking in 1957, US aid began to fall rapidly to halve by 1961. US policy for international development was then changing from 'aid' to 'trade' as balance-of-payment difficulties there were becoming permanent.[102] Despite its specific geopolitical condition, Korea was not spared from the cuts. Moreover, agrarian output growth stagnated, thus limiting the increase in the amount of resources that could be transferred out of that sector.[103] With the inflow of foreign aid in sharp contraction, the previous overvaluation of the national currency could no longer be sustained. The former had constituted the bulk of the foreign exchange resources available in the local economy. Thus, under the strong 'advice' of the US government, the Korean economic authorities finally devalued the Won and implemented an 'orthodox' monetary policy, curtailing credit supply and, therefore, part of the subsidisation granted to industrial capital.[104]

[99] See Krueger (1979: 61-5) on the shallow development of the industrial sector during this period.
[100] See Hong (1979: 141-2) for a summary of incentives then granted to foreign direct investments. See also Westphal and Kim (1977: IV-8); Hart-Landsberg (1993: 85-6, 91-2).
[101] See Moon and Ryu (1977: 107); Cole and Pak (1983: 123-6).
[102] See Kauffman (1982: 176-96) on the change in US foreign aid policy during the late 1950s and early 1960s.
[103] See Cole and Lyman (1971: 258).
[104] See Krueger (1979: 79-81).

If the period between 1954 and 1958 was marked by post-war recovery and relative institutional stability, the years 1959-1961 were characterised by a succession of economic and political crises. As the economy entered into reverse mode, opposition to Rhee's increasingly autocratic, repressive regime mounted rapidly and found a way of expressing itself in the fourth National Assembly elections held in May 1958. Rhee's LP only managed to gain 38.7% of votes despite its control over the electoral process and government funds, and the massive fraud undertaken. The opposition Democratic Party (DP), a conservative faction originally supporting Rhee in his post-Independence struggle to gain power against left-wing political groups and later on antagonising with his administration more over form than policy content, came second with 29.5% of the votes. Nevertheless, the strengthening of the opposition in the National Assembly was met with further political repression culminating in the passage of a series of national security bills in December 1958, virtually suspending the remaining vestiges of the democratic process. As would become common later on, the fight against 'communist' infiltration was the excuse used to justify this attack on civil liberties and political adversaries.[105]

As state resources contracted, economic policies increasingly concentrated on adjusting government spending to the new circumstances. The fight against inflation, so enthusiastically promoted by US advisors, was no more than an ideological excuse for that purpose. The inflation rate, though at 22-3% during 1956-7, had actually been falling during the previous period of fast growth and stood at -3.07% in 1958, as monetary control shock therapy was applied to the Korean economy.[106] The Economic Development Council, created in early 1958 at the peak of the previous expansionary cycle to design a long-term plan to promote the process of industrialisation, remained marginal to the process of economic policy-making, a shadow of what its successor, the Economic Planning Board (EPB), would become. In effect, the implementation of the long-discussed First Five-Year Plan was suspended. The Plan would only come to life in 1961, after Rhee had left the government.[107]

As in Brazil, by 1960, the prospects of the Korean economy were increasingly bleak. While agrarian output growth stagnated and global grain prices were falling, the mass of primary sector surpluses available for appropriation by industrial capital got

[105] See Cole and Lyman (1971: 27-30); Kim (1975: 156-8).
[106] See table C.1 in Appendix C.
[107] See Cole and Lyman (1971: 203-4); Haggard et al. (1991: 855).

now reduced. Furthermore, by then, US aid had already fallen to half the amount of its 1957 peak. Without these resources, industrial production growth stopped and so did the demand for labour-power in the sector. Real wages fell by 10% thus partly compensating for the negative effect on industrial capital's profits caused by the drop in the subsidies granted to the sector. Gross domestic product growth also came to a virtual halt.[108]

With the economy in a deep crisis, opposition to Rhee's government reached a climax. The regime could no longer fully express the necessities of the Korean process of capital accumulation. Loyal to its style, the regime, which had been increasingly relying on the police forces and the bureaucracy to run the country, then did what it needed to trigger its own downfall. In the midst of the crisis, the LP government massively and openly rigged the fourth presidential election held in March 1960. The fact that Rhee, already an elderly man, obtained 88.7% of the votes was strange but not entirely shocking as he ran unopposed; his main contender unexpectedly died in hospital a couple of weeks before Election Day. The main locus of conflict, however, was the government's desperate attempt to get Rhee's successor elected to the post of deputy-president. In an openly fraudulent operation, Lee Ki-pung, Rhee's protégé, comfortably defeated Chang Myon of the DP, against whom he had lost the position in the previous election when Rhee's victory had been extremely narrow.[109]

The response was swift. Already anticipating the fraud that was in the making, student demonstrations began in the port city of Masan on Election Day. The explosion, however, came a few days later when one of the demonstrators was found dead, apparently from police brutality. On April 18th, students rallied in Seoul and the following day over 20,000 demonstrated against the regime. They were brutally repressed by police forces; over 100 students were killed. The revolt spread to other major cities.[110] University students held massive protests during the following week.

[108] See graphs 4.2 and 4.5 in Chapter 4.
[109] See Cole and Lyman (1971: 30); Kim (1975: 162-3).
[110] It has been argued elsewhere (see e.g. Kim, 2000: 43-4) that Korean students incarnate in modern times the moral leadership that Confucian scholars had in the past. This allegedly explains students' constant participation in pro-democracy movements throughout Korean modern history. This might help explain the actions of those who have followed students lead, though perhaps it has been more directly related to social hierarchy than moral leadership. The social position of students, however, does not fully account for the reasons behind their own stance. In general terms, university students have a strong reason to oppose authoritarian governments. The weaker the democratic institutions, the lower, *ceteris paribus*, the bargaining power of those who sell their labour-power in exchange for a wage/salary. University students, as prospective salary-earners, are interested, as the rest of the working-class, in the existence of political institutions that allow them to maximise their bargaining power, vis-à-vis capital, in the labour

These were met, again, by violent state repression. Instead of receding, the protests against the electoral fraud and the autocratic and corrupted Rhee regime grew stronger. The options were narrowing for the government, notably when 40 LP members of the National Assembly withdrew their support from the president. Rhee called the military to intervene with further repression. They refused. Without the support of this key repressive institution, the President resigned, and, on 26th April 1960, fled to Hawaii. Rhee never returned to Korea. Lee Ki-pung and his family reportedly committed suicide. The US government did not do much to stop Rhee's fall; his fierce anti-Japan nationalism had become a liability for US policy in the region. The first Korean Republic thus came to an abrupt end.[111]

After Rhee's resignation, following the Constitution, Prime Minister Ho Chong established an interim government. Its response to the political crisis was not, however, radically different from Rhee's repressive and corporatist measures.[112] A new Constitution was quickly promulgated, creating a bicameral National Assembly and establishing a cabinet system of government. This reform sought to reduce significantly the powers of the president who was to be chosen by the National Assembly rather than by direct popular vote.[113] Elections for the National Assembly were held in late July. The DP won by a large majority in both chambers and after hard internal negotiations, Chang Myon was elected prime minister. The new administration, however, was weak from the first day. Divided over the choice of president, the DP broke apart and those who opposed Chang's designation left after his election.[114] Indeed, it was the perfect government for an economy that was crumbling while its material bases of structural support were being eroded rapidly.

In 1960, a poor rice harvest reduced further the amount of resources that could be transferred to the urban sector and, together with the reduction of US commodity aid under Public Law 480, resulted in severe food shortages in the urban centres. The

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market. Moreover, students also tend to have more 'space' than currently employed wage and salary earners to pursue political activities. They can strike without risking their source of income. In 1960 Korea, this general determination was reinforced by the particularly difficult labour market environment faced by college graduates as the entrance to the state bureaucracy had been largely closed to them. Unemployment among this portion of the Korean working-class was then running at 40-50% (see Cole and Lyman, 1975: 26).

[111] See Cole and Lyman, (1971: 30); Palais (1974: 326-8); Kim (1975: 165).

[112] See Kim (2000: 36-7).

[113] See Kim (1975: 202-4).

[114] See Cole and Lyman, (1971: 31-2); Kim (1975: 204-23).

'spring famine', common in rural areas, worsened further.[115] As US aid in cash also contracted, exchange rates for imports were devalued further, thus reducing the magnitude of primary sector surpluses and the contracting aid resources transferred through this mean to industrial capital. In an effort to cover the gap in public sector finances left by the reduction in foreign aid, tax collection and fares of public services provided by state-owned companies were increased, thus reducing the subsidies granted through them to urban consumers.[116] In early 1961, exchange rates for imports and exports were devalued again and unified, putting a momentary end to the system of multiple exchange rates that had characterised the Korean process of ISI.[117]

With the economy in recession and real wages falling from their already low levels, popular unrest spread now across all segments of urban society, this time also including the hitherto inactive trade unions. The political opening brought about by the end of Rhee's regime facilitated the multiplication of popular protests against a government that had promised fast economic growth and development but was achieving very little in this field. Demonstrations, crucially, of university students, became endemic during the second part of 1960 and first half of 1961. The economic crisis was rapidly manifesting itself in a new, more acute political crisis.[118]

In effect, Chang's administration was a contradiction in terms. It was a conservative government brought to power by a reformist movement.[119] Much to the surprise of those who had facilitated its emergence, Chang's government, as Rhee's before it, attempted to respond with new repressive measures; by limiting demonstrations and cracking down on 'communists'. Students' protests spiralled rather than subdued and the situation got rapidly out of control.[120] In the middle of the crisis, the military, the strongest and most professionalised state institution, intervened allegedly to 'restore the order' and 'revitalise' the struggle for the goals of the Revolution that had removed Rhee by 'rescuing' it from 'corrupted' politicians and 'radical' activists.[121] On 16th May 1961 a group of junior members of the military, most of them of rural origin and not directly in charge of Rhee's repressive system or benefiting from its corrupt administration, toppled the democratically elected

[115] See Kim (1975: 214); Haggard et al. (1991: 863).
[116] See Cole and Lyman (1971: 174-6); Haggard et al. (1991: 856).
[117] See Frank et al. (1975: 43-4); Krueger (1979: 86-7).
[118] See Kim (1975: 204-23).
[119] See Cole and Lyman (1971: 31).
[120] See Kim (2000: 41-2).
[121] See Cole and Lyman (1971: 37).

government of Chang. They faced little opposition. The coup, apparently, had been in the offing since Rhee's times, but was postponed as the 'student revolution' unfolded. On the following day, the coup leader, Park Chung-hee, dissolved the National Assembly, prohibited indefinitely all political and trade unions activities, dictated martial law, and announced the formation of a junta of thirty colonels and brigadier-generals to head the executive branch of the government.[122]

As soon as it grabbed power, the military government reorganised the structure of the state bureaucracy and reformed the Constitution once more. First, the junta was replaced by the Supreme Council for National Reconstruction. Secondly, following the proposal made during Chang's short-lived tenure, the Economic Planning Board was created to replace the Economic Development Council. This new 'super' ministry took responsibilities from different ministries in order to centralise key aspects of economic policy-making, including the public sector budget, economic planning and the use of foreign capital. Thirdly, a massive and far reaching government department, the Korean Central Intelligence Agency (KCIA), was created to fight and dismantle any kind of political opposition to the regime and, crucially, labour and left-wing activism. These would thereafter be considered to be influenced by North Korea and therefore to be conspiring against national interests and 'social peace'. For that purpose, the KCIA also pursued a massive purge in the public administration and the army; a practice that would become common after each change of government. The new Constitution reinstated a strong presidential regime, weakening the power of the unicameral National Assembly. Under strong domestic and international pressure, however, the military government reluctantly called elections for mid-1963. The third Korean Republic then began.[123]

Among its first economic measures, the regime forgave all rural debt deemed as having arisen from usury and rescheduled loans that were considered fair.[124] This reduced the size of agrarian surpluses appropriated by money-lending capital and thus expanded the share potentially appropriable by industrial capital.[125] Furthermore, in 1962, in the middle of the crisis, a 'revolutionary' court and a prosecution office were established under the Political Activities Purification Act to try those accused of various

[122] See Kim (1975: 229); Palais (1974: 331-3).
[123] See Kim (1975: 231-5); Haggard et al. (1991: 856-8, 860); Hart-Landsberg (1993: 166-7); Kohli (2004: 88-9, 98-101).
[124] See Kim (1975: 232); Cole and Pak (1983: 55); Haggard et al. (1991: 862).
[125] Not only by simply reducing the share of the surpluses going to money-lending capital but also by allowing the normal reproduction of agrarian capitals.

crimes, including opposition politicians, members of previous governments, student activists and the so-called 'illicit fortune makers'.[126] Under the argument of being a punishment from their past abuses and corruption, large private companies were fined and, in some cases, their assets confiscated.[127]

By the end of 1961, however, the economy began to recover. With agrarian production and prices jumping more than 10%, the mass of agrarian surpluses available for transference to, and appropriation by, industrial capital expanded significantly.[128] With this expanded resources and real industrial wages still around 10% below their 1959 peak values, industrial production expanded and GDP growth returned even when foreign aid remained at relatively low levels.[129] By the end of the year, state policies began to change to accommodate to, and facilitate, economic recovery. Park's government then launched the First Five-Year Economic Plan (FFYP) for the period 1962-66, which was strongly influenced by the Three-year Plan first drafted by the Economic Development Council during Rhee's administration.[130] The punishment of 'illicit wealth makers' was largely dispensed with and most fines and sentences were pardoned and all assets reinstated; the main exception being privately owned shares in commercial banks which were renationalised only four years after being privatised.[131] These, however, had become relatively unimportant as state banks offering subsidised loans had expanded at their expense as providers of long-term funds, and as interest rate ceilings had led to a loss of deposits at the expense of the unregulated, 'curb' market.[132] In other words, the farce, with all its locally-embedded cultural singularities, which included parading punished businessmen in front of large audiences, had mediated politically the economic crisis and, thus, reproduced the Korean process of capitalist development under its unchanged specific form. It had not been, as it is claimed elsewhere, a form of disciplining capital or reasserting government's authority for the

[126] See Cole and Lyman (1971: 38-9); Kim (1975: 237-8).
[127] See Hamilton (1986: 35); Haggard et al. (1991: 858-9); Clifford (1998: 37-8).
[128] See graph 2.12 in Chapter 2.
[129] See tables C.5 and C.32 in Appendix C.
[130] See Cole and Lyman (1971: 204); Haggard et al. (1991: 861).
[131] See Jones and Sakong (1980: 278-80); Amsden (1989: 72-3); Haggard et al. (1991: 859); Chibber (1999: 325).
[132] See Amsden (1989: 73). See Cole and Pak (1983: 121-62, 319-23) on the characteristics, expansion and extent of the unregulated financial markets. According to Cole and Pak (1983: 154), conservative estimate for 1964 put the size of the outstanding assets and liabilities in the unregulated financial markets as being twice as large as those in the official.

concomitant transformation of the economy through the adoption of an export-oriented 'model of industrialisation.'[133]

In contrast to what is frequently claimed,[134] the FFYP was firmly set within the ISI tradition. The Plan placed particular emphasis on basic industries like cement, fertilizer, steel, oil refining and chemicals. These were supposed to stimulate other sectors of the economy and constitute the foundation for the economic activities to be 'promoted' in the Second Five-Year Plan (SFYP), which would aim at economic self-sufficiency.[135] As was seen before, the motor-vehicle industry was also to be promoted during the period of the FFYP. So were other durable-consumer goods industries like electronics (e.g. television sets and watches).[136] Exports were encouraged, but their place in the Plan was secondary to the import-substituting effort. Moreover, those exports most encouraged were in the mining, fishing and agrarian sectors rather than the labour-intensive manufactures that would expand sharply thereafter.[137] As in Brazil, and many other 'developing' countries, export promotion policies (either of traditional or 'non-traditional' goods) were planned to help 'finance' ISI programmes. They were not yet at the centre of economic policy-making.[138]

To make the FFYP operational, the government instituted a number of financial sector reforms, all of which significantly increased the importance of bank lending in the allocation of capital. Apart from nationalising commercial banks, the government reorganised agricultural financing institutions, created the Small and Medium Industry Bank and authorized the KDB to guarantee private sector foreign loans and to borrow abroad. Moreover, the Bank of Korea (the Central Bank) was brought under the control of the Ministry of Finance in order to further centralise and coordinate credit policies.[139]

Though not the core of the Plan, standard policies were used to 'promote' exports, mainly of raw and semi-processed materials. These consisted of the exemption

[133] See e.g. Amsden (1989); Haggard et al. (1991)
[134] See e.g. Krueger (1979: 82-6); Shin (2003: 55).
[135] See Economic Planning Board (1962: 45).
[136] See also Luedde-Neurath (1985: 53-5).
[137] See Cole and Lyman (1971: 211); Hong (1979: 62-3); Hamilton (1986: 44); Chibber (1999: 325-6).
[138] See Hong (1979: 63); Clifford (1998: 54); Chibber (1999: 325-6). "In improving the currently unfavourable balance of payments situation, it is considered necessary to take measures to attain self-sufficiency in food-grain and to restrict import of consumer goods, to promote import-substitute industries, to expand domestic production of industrial raw materials, to increase exports, to undertake an efficient marketing program, and to negotiate with the United Nations Command and the United States government for a greater volume of off-shore procurement within Korea." (Economic Planning Board, 1962: 40).
[139] See Cole and Pak (1983: 55-61) on the financial sector reforms introduced by the military government. See Collins and Park (1989: 283).

of tariffs on imports of raw materials and spare parts used in exportable productions, the exemption of some domestic taxes and the granting of subsidised credits to exporters. Furthermore, exporters kept receiving direct subsidies paid in cash.[140] These, however, were far from enough to compensate for the still high degree of overvaluation of the national currency. In summary, these 'export promotion' policies were not yet mediating the structural transformation of the Korean economy from a type of process of capital accumulation based on the appropriation of primary sector surpluses and foreign aid through ISI to one based on the use of a cheap and highly disciplined labour-force through EOI. On the contrary, they were still a particular form of realising the former (i.e. part of the 'import-substituting' effort.)

Furthermore, as would become common in Korean history, between 1961 and 1963, labour market institutions were also reformed to express the new economic conditions. On one hand, trade unions were restructured in the form of industry-wide organisations unified under a single national federation, while 'union shops' were recognised, thus in principle strengthening labour's bargaining power. On the other hand, allegedly to avoid the repetition of the events that had brought down Chang's administration, trade unions were banned from party politics while state intervention, crucially by the newly-created KCIA, in their internal affairs was extended in scope, thus in practice reducing labour's bargaining power. In the short run, these institutional changes greatly limited wage recovery. Despite their corporatist characteristics and the theoretical toleration of collective bargaining, the new labour market institutions had two features that could potentially enable them to give shape and mediate future transformations of the economy. These were the consolidation of enterprise unions as the lowest-level unit of representation, in most cases controlled by management, and the lack of unions' involvement in political activities. Both favoured the differentiated reproduction of the different portions of the labour-force (i.e. the 'dual' or 'fragmented' features of the labour market).[141]

With agrarian surpluses and foreign aid recovering, the overvaluation of the Won was strengthened again in 1962.[142] As state resources also increased, monetary and fiscal policies regained their expansionary shape, thus increasing the subsidisation of industrial capital. The supply of credit expanded rapidly, crucially to industry, jumping

[140] See Krueger (1979: 92-9) for an overview on the evolution of export promotion policies introduced up to the mid-1970s.
[141] See discussion in Chapter 4.
[142] See graph 2.2 in Chapter 2. See also Krueger (1979: 83).

by 20% in 1961 and 1962 (compared to -24% in 1960) while government spending increased from 17% to 25% of national output between 1960 and 1962.[143] This time, however, these extraordinary resources were not as large as in 1957, when US aid had peaked. Nevertheless, they were now complemented with the payment of labour-power well below its value. In 1962, real wages in manufacturing were still 5% below the peak level of 1959 while labour productivity was 11% above.[144]

The economic recovery, however, was short-lived. By 1963 economic growth began to slow down when the balance between the extraordinary sources of social wealth available for appropriation (i.e. primary sector surpluses and foreign aid) and their requirement by local industrial capital tightened once more. The system of multiple exchange rates was then reintroduced to direct their transfer to an industrial capital that was mainly accumulating through the production of non-durable consumer goods for the protected domestic markets. A US-backed stabilisation plan was implemented severely cutting public sector expenditures to 15% of GDP in 1963 and 11.5% in 1964. Credit supply growth in real terms was also curtailed to -5% and -15% in 1963 and 1964, respectively.[145] As the economy slowed, growth in the demand for labour-power also receded. Real wages in manufacturing fell a further 11% during 1963-64, compensating the negative effect of the low level of labour productivity and reduced subsidies on capital's profitability.

By the end of the 1963, the Korean economy was in reverse gear. Park only just managed to win the presidential election, getting much less than half of the votes, despite the fact that his party, the Democratic Republic Party (DRP), had complete control over the state apparatus and its resources and had manipulated the electoral law in its favour.[146] When the new 'democratically' elected Park administration assumed power in 1964, the economy was in crisis, public sector revenues were collapsing rapidly (as foreign aid kept falling), and the US-backed stabilisation programme proceeded with the adjustments. Manufacturing employment fell for the first time since the end of the Korean War while real wages in that sector were already 16.5% below their 1958 peak. The FFYP was revised downwards two years before its end.[147]

[143] See Cole and Lyman (1971: 174) on government spending; Cole and Pak (1983: 62-3) on official banks' lending. See also Collins and Park (1989: 283-4); table C.34 in Appendix C.
[144] See table C.5 in Appendix C.
[145] See Collins and Park (1989: 284).
[146] See Kim (1975: 249-56); Palais (1974: 336-7); Hart-Landsberg (1993: 167).
[147] See Cole and Lyman (1971: 86); Chibber (1999: 326).

Nevertheless, despite having been generally poor, the performance of the economy during 1962-64 was not uniformly bad. Helped by the sharp fall in industrial wages, exports unexpectedly grew at a very rapid pace, notably in unskilled-labour intensive manufacturing sectors such as textiles, electronics (e.g. radios) and plywood. The rate of profit of industrial capital thus increased sharply to peak in 1964.[148] Some authors attribute the strong export performance to the subsidies granted to them since 1960-61.[149] This, however, was hardly the case as subsidies were more than offset by the increased overvaluation of the exchange rate during 1961-63.[150] Other authors attribute it to the political support received by the exporting industries after the raise of the military to power.[151] Yet, as reviewed above, this type of state support to export activities was relatively mild until the mid-1960s.

End of chapter conclusions

During the period between 1955 and 1964, the Brazilian and Korean economies were structured in a relatively similar fashion. Industrial capital accumulated there producing largely for small-sized, protected domestic markets. Its inherently high production costs were compensated through the appropriation a portion of primary sector surpluses, notably land rent, and of foreign capital inflows in the form of credits to the state in Brazil and aid in Korea. Furthermore, as primary sector surpluses contracted and capital inflows slowed at the end of the 1950s and the beginning of the 1960s, both countries went through an economic crisis that triggered political changes. In neither, however, did this entail a structural transformation in the predominant form of economic organisation. Nevertheless, by the early 1960s the Brazilian and Korean economies already differed in one major aspect. While the process of import-substituting industrialisation in the former had already incorporated some of the largest industrial companies in the world for the production of durable-consumer goods, this was not the case in the latter. The amount of primary sector surpluses and foreign aid available for appropriation were not large enough in Korea to sustain the expansion of

[148] See graph 2.9 in Chapter 2 on profit rates. See tables C.5 and C.16 in Appendix C for real wages and exports, respectively. On light industries performance, see Michell (1988: 123-33, 138-40).
[149] See e.g. Amsden (1989: 66).
[150] See graph 2.2 in Chapter 2. See also Frank et al. (1975: 44-7); Krueger (1979: 83-4).
[151] See e.g. Haggard et al. (1991: 858-62).

the domestic markets and the degree of subsidisation necessary to undertake these productive activities.

Yet, by 1964-65 both economies were again in serious difficulties. Economic growth slowed and balance-of-payments crises emerged as foreign capital (credit or aid) stopped flowing in the amounts it had previously. One key difference in their future development experiences, however, was already apparent. During the first half of the 1960s, Korean exports of labour-intensive industrial goods expanded rapidly, despite the limited state support producers received to counterbalance the increasing exchange rate overvaluation. Brazilian industrial capital, on the other hand, remained fully concentrated on selling in the protected domestic markets and compensating its particularly high cost structure largely through the appropriation of a portion of land rent.

Chapter 6
Brazil and Korea between the Mid-1960s and the Early 1970s

Brazil: From 'corrective inflation' to the 'economic miracle' (1964-1973)

In order to pursue its stated goal of purifying Brazilian democracy, the self-proclaimed 'revolutionary' military government began its tenure by reshaping political institutions. It did so through a series of so-called Institutional Acts (AIs) which counted as presidential decrees and had precedence over existing laws and the Constitution. The first AI, though it did not close the Congress completely, did transfer much, if not all, of its power to the executive branch of the government. Parliamentary immunity was suspended and the newly formed Revolutionary Supreme Command was authorised to cancel electoral mandates and to suspend the political rights of any Brazilian for a period of up to ten years. Congressmen from the main opposition parties were expelled or imprisoned. Goulart and Kubistchek, the heads of the PTB and PSD, respectively, were forced in to exile, together with their closest collaborators. Opponents to the regime and the leaders of trade and students unions and of the peasant leagues began to be persecuted, imprisoned and tortured in the name of the fight against the communist 'insurgency' allegedly spreading throughout the country. In June 1964, the National Information Bureau (SNI), a counter-intelligence state institution like the KCIA, was formed for the purpose of fighting the 'internal enemy'. In practise it persecuted those groups whose actions directly or indirectly opposed the deterioration of the wages of industrial and rural workers. Groups dedicated to the 'revolutionary armed struggle' were minor and not always the main focus of the SNI's actions. Thus, the so-called National Security Doctrine was officially implemented in Brazil.[1]

With firm control over the urban and rural working class and the parties that had represented it politically, the new administration implemented the Government Programme of Economic Action (PAEG) devised by Campos, the economist who had previously designed Kubistchek's failed stabilisation plan, and his more orthodox colleague Otávio Gouvêa de Bulhões. The Programme was based on an eclectic evaluation of Brazil's inflationary problem – this was thought to have multiple causes –

[1] See Skidmore (1988: 23-7); Fausto (1999: 280-2); Bethell and Castro (2008: 171-5).

and was designed to rebalance the economy as a condition to restart growth.[2] In practice, the PAEG entailed the partial or total revision of previous policies that had transferred a portion of the land rent from landowners to the rest of the economy, in particular industrial capital. First, in order to balance the country's external accounts, the currency was devalued and import tariffs were proportionally lowered while prior import deposits were eliminated altogether, thus reducing the portions of land rent appropriated by industrial capital (directly) and the state. Secondly, a fiscal reform was implemented to balance public sector accounts and thus control inflationary pressures caused by 'excessive demand'. Tax collection augmented and prices of services and industrial inputs provided by SOEs were increased in a drive called 'corrective inflation'. The price of wheat and fuel also increased; subsidies to consumers granted through them decreased accordingly. State investments in social overhead capital, however, were not curtailed.[3] Thirdly, a system of indexation was devised in order to allow the public sector to cover its deficit through debt issued in the domestic capital market. This arrangement would attempt to protect creditors against inflation. The need to monetise the public sector deficit was thus further reduced.[4] Fourthly, in order to increase private savings and thus reduce inflationary pressures allegedly resulting from the low growth of investments relatively to consumption, the Usury Law was scrapped. Rent controls on urban properties were abolished. At the same time credit supply to the private sector was squeezed, thus in practice eliminating yet another form of land rent transference to industrial capital.[5] Fifthly, with the declared intention of reducing the part of inflation allegedly springing from wage settlements above productivity trends, the labour market was 'reformed', eliminating job stability clauses, and, starting in 1965, private sector companies were 'induced' to apply a formula for wage adjustments for manual worker retributions that underestimated the increase in the cost of living. Strikes were outlawed and labour's bargaining power greatly diminished.[6] Sixthly, foreign private lenders and multilateral institutions of credit were re-approached while new incentives were created to entice investors to venture their 'risk' capital in Brazil.

[2] For a complete description of the PAEG, see Lara Resende (1990).
[3] See Ellis (1969); Abreu (2008a: 361-62, 365).
[4] See Abreu (2008: 362-3).
[5] See Baer and Kerstenetzky (1972: 115-6); Fishlow (1973: 70-2); Lara Resende (1990: 218-9); Abreu (2008a: 363, 366-7).
[6] See Fishlow (1973: 84-5); Bacha (1977: 50-2); Erickson (1979: 157-9); Avelãs Nunes (1990: 324-27); Lara Resende (1990: 215-18); Abreu (2008: 363).

The 1962 law limiting profit repatriations was quickly removed.[7] Finally, already in 1966, in order to compensate for the labour market 'reforms' and to increase domestic savings, private sector employers were forced to contribute 8% of their wage costs towards the newly created Service Time Guarantee Fund (FGTS) to provide wage earners with some income in case of dismissal and retirement or to contribute towards the purchase of a family house. The unused FGTS funds would be invested in the newly created National Housing Bank (BHN) and the National Savings Bank (Ciaxa Econômica Federal), and used to finance the purchase of private housing, mostly by high-earners, and public investments in road-building, sewage and water systems.[8]

With the land rent stagnating, or growing slowly, and its use partly diverted to service the public sector external debt, the PAEG prolonged until 1967. Economic growth came to a virtual halt. In effect, capital flight during 1964-67 was substantial, equivalent to 2.4% of total surpluses, despite US financial 'support' for the military regime. During this period, the Brazilian economy grew at an average rate of merely 1.4% (-1.4% in per capita terms) which was not only well below the 6.25% average (3% per capita) of the previous ten years (1954-1963) but also largely insufficient to create enough jobs for the rapidly increasing economically active population.[9] The decline in economic activity, together with the wage policy and the active repression of the working-class resulted in the fall of labour's income. Average real wages in the formal industrial sector collapsed by 10% during 1964-65, recovered 6.7% in 1966, and fell again 2.24% in 1967.[10] This evolution of average wages, however, was not uniform. While real wages paid to skilled workers were in 1967 already 10% above the 1964 level, those paid to unskilled manual labourers were still around 6% below.[11] Moreover, although falling as the economy stagnated, inflation remained relatively high, at around 40% and 30% in 1966 and 1967, respectively, despite the sharp reduction of the public sector deficit and aggregate demand.[12]

The economic recession not only affected the scale of the Brazilian process of capital accumulation. It also resulted in the restructuring of the industrial sector. With a shrinking domestic market and inadequate access to subsidised credit, a large portion of

[7] See Lara Resende (1990: 214-5); Avelãs Nunes (1990: 318); Abreu (2008: 366).
[8] See Frieden (1987: 98); Avelãs Nunes (1990: 327-30, 379-81); Lara Resende (1990: 228-9).
[9] See Morley (1973: 191); Breser Pereira (1984: 104) on the weak performance of the labour market during those years. See also table C.6 in Appendix C.
[10] See graph 4.10 in Chapter 4. See also Baer (1973: 6); Lara Resende (1990: 216-7).
[11] See Bacha (1977: 52-3); Zurron Ocio (1986: 12-7).
[12] See Fishlow (1973: 80-1); Correa de Lago (1990: 234-6).

small, domestically-owned firms went bust. Some of these were absorbed by MNCs, giving place to a process of rapid centralisation of capital and the internationalisation of its ownership. During this period, new FDI remained limited and was largely concentrated in displacing national capital rather than in expanding industrial productive capacity.[13]

As the economy stagnated and recessionary, crucially wage-squeezing, policies prolonged, the *need*, and thus actual possibilities, for a rapid reestablishment of democratic institutions grew increasingly slimmer. In late October 1965, in view of UDN's recent setback in the July regional elections and its almost sure defeat in the forthcoming contests, the 'revolutionary' government postponed the presidential elections (for late 1966) and, subsequently, passed the Second AI, increasing the political power of the President and decreeing the end of traditional political parties. From then onwards, there would be only two main parties: the National Renewal Alliance (ARENA), supporting the government in Congress, and the Brazilian Democratic Movement (MDB), the 'official' opposition. Three months later, the military regime passed the Third AI making future elections of president, vice-president and state governors indirect, to be decided by an electoral college which could be easily manipulated through the use of patronage and pressure from the military. The farce of the military regime 'purifying' Brazilian democracy was quickly over.[14] Moreover, in early 1967, a new Constitution was approved further concentrating decision power in the executive branch of government and increasing the scope of 'national security' policies and press censorship. In March, General Costa e Silva, a hard-line nationalist military elected in October 1966 against the wishes of Castello Branco, the 'moderate' incumbent head of the executive, assumed the presidency.[15]

By late 1967, however, economic policies began to shift direction and so did, later on, the performance of the Brazilian economy. After the change in the military leadership, a new Minister of Finance, Antonio Delfim Neto, was appointed and an expansionist set of policies was implemented. After four years of tight credit, loans to the private sector were expanded, under the 'structuralist' assumption that high financial costs and low levels of capacity utilisation in the industrial sector were two of the main causes behind the stubbornly high inflation rates. Public sector investments in social

[13] See Newfarmer and Muller (1975: 109-14); Lara Resende (1990: 222-3); Abreu (2008: 366).
[14] See Skidmore (1988: 42-5); Bethell and Castro (2008: 175-9).
[15] See Skidmore (1988: 66-8); Fausto (1999: 285-7); Bethell and Castro (2008: 180-2).

infrastructure and industrial production were increased further. Exports of 'non-traditional' products were promoted by different means, notably through tax exemptions and 'soft' loans. Subsidies luring FDI were augmented, notably in the motor-vehicle sector.[16] Furthermore, already in 1968, in line with the recommendations of the never-implemented Ten-year Social and Economic Development Plan for 1967-76, the more modest Strategic Development Programme was launched for the period up to 1970. In 1970, as economic growth gained momentum and installed capacities reached full utilisation in several industrial sectors, the National Steel Plan and the First Shipbuilding Industry Plan were launched together with major projects for the construction of motorways and hydroelectric dams. In 1971, these initiatives were combined in the First National Development Plan for the period 1972-74, in principle the first step in a project for long-term planning.[17]

Led by the industrial sector, notably the consumer-durable goods branch, the economy responded and growth picked up to an annual average of 11.5% between 1968 and 1973, the years of the so-called Brazilian economic 'miracle'.[18] Industrial wages recovered slowly, growing on average at 3% per year in real terms. The inflation rate fell from 30.4% in 1967 to 16.6% in 1972, the year before the first 'oil shock'.[19] FDI in the consumer-durable goods sector recovered and industrial exports expanded rapidly responding to the battery of stimulus they were receiving, notably after 1972 when the Special Fiscal Benefits for Exports (BEFIEX) programme was launched.[20]

The performance of the Brazilian economy during this period was so remarkable, especially the expansion of 'non-traditional' exports, that policy-makers (e.g. Delfim Neto) believed that the 'outward-looking' strategy allegedly pursued by the military government was leading to a process of economic growth comparable with that being experienced by several East Asian countries, including Korea.[21] This, however, could have hardly been the case. While industrial capital in East Asia was then beginning to 'specialise' in production for world markets that required relatively cheap and disciplined labour (e.g. textiles, apparels, electronics), the bulk of Brazil's new

[16] See Fishlow (1973: 97-9); Correa de Lago (1990: 236-37); Shapiro (1991); Abreu (2008: 370-4).
[17] See Brazil (1971).
[18] See Correa de Lago (1990: 238-42) for a summary of Brazilian economic performance during this period. See also graphs 4.2 and 4.4 in Chapter 4.
[19] See table C.1 in Appendix C.
[20] On FDI and exports expansion, see Newfarmer and Muller (1975: 98-111); Balassa (1979: 1024-25). On the export subsidies program, see Anglade (1985: 74-5); Avelas Nunes (1990: 408-15); Correa de Lago (1990: 272-78).
[21] See Bacha (1977: 37).

industrial exports was composed of raw or semi-processed locally produced primary goods (e.g. orange juice, leather products, cotton textiles, soybeans, etc.) and/or supported by substantial subsidies.[22]

Effectively, under the appearance of being an industrial policy implemented to expand local export capacity, the generous subsidies granted to industrial goods exports became a new form of appropriation of land rent by industrial capital, especially of foreign origin, during the period of the 'economic miracle'.[23] Though granted to all non-primary goods exports, subsidies were proportional to the value-added and therefore differed greatly across sectors. In 1972, average subsidies were 17% of FOB value of exports, ranging from 8% on wood products to 37% on apparel and footwear.[24] Industries exporting processed primary goods thus received subsidies that tended to compensate for the negative effect of exchange rate overvaluation on value added by the processing industry. For consumer goods exports, subsidies more than compensated for the overvaluation of the currency, acting as a constant transference of social wealth to industrial capital. In 1971, for instance, subsidies to motor-vehicle exports – the largest recipient – amounted to 35% of the FOB price while the currency was at par.[25] Moreover, despite the high subsidies, the Brazilian industrial sector was, unlike its East Asian counterparts, still exporting only a small fraction of its production.[26] Indeed, rather than being an export-led recovery, the fast growth of industrial production in Brazil was kick-started by state expansionist policies and oriented largely towards the domestic market.

A substantial portion of the resources used to finance expansionary policies, and channelled to industrial capital to sustain its profitability, continued being made of land rent, appropriated largely through a combination of Contribution Quotas and recently implemented taxes on commodity exports.[27] The Brazilian currency was sold at its purchasing power parity during this period, as the government implemented a policy of frequent 'mini-devaluations' to avoid the rate of exchange becoming overvalued.[28]

[22] See Von Doellinger et al. (1974: 134).
[23] As they were concentrated in high value-adding sectors, MNCs received the largest part of those subsidies. See Avelãs Nunes (1990: 415-9).
[24] See Savasini (1978: 30-9).
[25] See Oliveira and Popoutchi (1979: 178).
[26] See table A4.2 in the Appendix to Chapter 4. See also Von Doellinger (1974: 95); Avelãs Nunes (1990: 415-9). The automobile industry, for instance, exported only 1% of its production during the 'miracle'. See Oliveira and Travolo Popoutchi (1979: 79).
[27] See Brandão and Carvalho (1990).
[28] See Portugal (1994: 241).

Furthermore, in 1968 the Inter-ministerial Price Council (CIP), created to control the inflationary process, also imposed regulations to the circulation of certain raw materials and further reduced their domestic prices, thus channelling another portion of land rent to commodity consumers.[29]

Nevertheless, after peaking in 1967, the magnitude of land rent available for appropriation experienced a contraction between 1968 and 1970, as did the portion seized by the state and private industrial capital.[30] Agrarian output growth stagnated while international commodity prices fell during this period. Indeed, during these years, GDP growth was rather weak, despite the popular references to an economic 'miracle' taking place in Brazil. After growing a massive 11% in 1968, per capita GDP growth decelerated sharply to a merely 4.4% and 2.1% in 1969 and 1970, respectively. It was only after that date, when the magnitude of land rent available for appropriation started to expand robustly again in the build-up of the early 1970s commodities boom, that per capita GDP growth accelerated to a yearly average of 11.3%.[31] By then, international prices of raw materials were experiencing a substantial recovery and the expansion of the agricultural frontier into the Centre-West region of Brazil, made possible after the move of the capital to Brasilia, was giving place to a substantial increase in the volume of agrarian production, crucially of soybeans.[32] Industrial value-added growth followed a similar irregular performance.[33] The mass of land rent appropriated by social actors other than landowners jumped from 15% of the economy's total surpluses (i.e. profits) in 1964 to 36% in 1967, and remained at around 20% during 1968-73, while the mass of profits expanded strongly during 1971-73.

Land rent, however, was not the only source of extraordinary social wealth available to compensate for the particularly high costs of domestic industrial production. In effect, from 1968 the increased liquidity in international financial markets, notably in the so-called Eurodollar market, began to allow a sharp expansion of Brazilian external borrowing, permitted by recently passed regulations to attract foreign capital. The net inflow of interest-bearing capital became strongly positive after five years of net outflows.[34] Between 1968 and 1973, social wealth equivalent to 5.8%

[29] See Correa de Lago (1990: 238); Avelãs Nunes (1990: 398-9).
[30] See graphs 2.3 and 2.10 in Chapter 2.
[31] See Bacha (1986b: 920) for a similar evaluation of the growth performance of the Brazilian economy during 1968-1973.
[32] See Graham, et al., (1987: 11-15).
[33] On the growth process, see graphs 4.2 and 4.5 in Chapter 4.
[34] See Wells (1973).

of all surpluses available in the Brazilian economy entered in this form. The largest portion of these loans was privately contracted, notably by foreign-owned companies. Another portion was borrowed by the state. Publicly borrowed funds generally found their way to feed industrial capital's profits through the operations of state-owned companies.[35] These borrowed externally to finance their expansion and to cover part of their operational deficits as they were again selling their output at subsidised prices and purchasing their inputs from local producers at inflated prices. The newly created CIP had decreed the end of the 'corrective inflation' and stopped the rise of prices charged by SOEs.[36] Finally, another portion of the borrowed funds was used to support Central Bank foreign exchange reserves.[37] In sharp contrast with the evolution of foreign loans, FDI, notably 'greenfield', only accelerated after 1970, when the economy was already growing fast and the land rent available to fund subsidies to the industrial sector began to expand. In Brazil, unlike in Korea and the rest of East Asia, FDI in the industrial sector was not in search of relatively cheap and highly disciplined labour-power but of state subsidies and a large protected domestic market, both dependent on the magnitude of land rent and its complementary sources of extraordinary social wealth.

Finally, there was a third source of extraordinary social wealth supporting the profitability of industrial capital during the 'miraculous' years, namely, the payment of a portion of the local labour-force below its value. In effect, after four years of economic stagnation, a battery of policies and the repression of political and trade union activities, average real industrial wages in 1967 were 6% below their 1963 peak. They grew strongly in 1968-69; fell again significantly in 1970; increased in 1971-72; and fell again in 1973 when they were only 10.7% above the 1963 level.[38] As during 1964-67, the evolution of real wages during 1968-73 was far from uniform. Not all the Brazilian labour-force suffered the same fate during the 'miracle'. While semi-skilled and, notably, skilled and managerial workers enjoyed the payment of their labour-power for its value, wages paid to manual unskilled workers contracted during the 'economic

[35] See Frieden (1987: 104-8); Avelãs Nunes (1990: 403-5).
[36] See Avelãs Nunes (1990: 378).
[37] See Baer (1995: 390-1). Some authors (see e.g. Correa de Lago, 1990: 278-81) dismiss the importance of foreign loans in sustaining the process of capital accumulation during this period on the grounds that a large portion of them went to rebuild Central Bank foreign exchange reserves. This argument, however, fails to acknowledge that in the absence of such foreign loans, reserves accumulation should have come from the normal surpluses generated in the economy, thus reducing these mass of resources available to fund consumption and investments.
[38] See graph 4.10 in Chapter 4.

miracle.'[39] Real minimum wages, for instance, continued the fall they began to suffer during the end of the Goulart government until they bottomed in 1973.[40] It was only then, when they were 50% below their early 1960s peak value, that real minimum wages started to increase. State policies generating the so-called 'wage squeeze', together with cuts in the provision of universal social services, allowed capital to increase its profits by introducing a sharp differentiation in the conditions of purchase and reproduction of the different segments of the Brazilian labour-force.[41] In any case, the increase in high-earners' income and the expansion, under state incentives, of consumer credit were enough to enlarge the domestic markets for durable-consumer goods while export subsidies expanded those for non-durable goods.[42] As a consequence, while the production of consumer non-durable goods grew by 9.5% on average during 1968-1973, mainly due to an 'extensive' expansion of the domestic market (i.e. population growth) and an increase in exports,[43] the output of consumer-durable goods, mostly destined to the domestic markets, expanded at an annual average rate of 24%.[44]

Furthermore, another portion of the value of the labour-force also began to be appropriated by capital during the period of the 'economic miracle', namely, that raised through forced savings programmes. First, the funds accumulated in the FGST and channelled through the BHN and the Caixa yielded a return which was usually below the inflation rate.[45] Secondly, in 1970 two other social security funds were established for private and public sector employees, respectively: the Social Integration Programme (PIS) and the Civil Servant Wealth Fund Program (PASEP). These funds, to be used as unemployment insurance or income support for low-wage earners, were deposited in the

[39] See Bacha (1977: 53-4); Zurron Ocio (1986: 8-11). Also see table A4.16 in the Appendix to Chapter 4 for the evolution of relative wages.
[40] See graph 4.10 in Chapter 4. For indicators of increasing inequality in the distribution of national income during the 'miracle', see Baer, (1973: 6).
[41] See Avelãs Nunes (1990: 429-40). For instance, Federal Government expenditures in healthcare fell 30% in real terms between 1967 and 1970. While they represented 3.03% of government expenditures in 1967, they were only 1.1% of them in 1970. See Serra (1972: 291). As a consequence of that contraction and the constant fall in minimum real wages, infant mortality in Sao Paulo increased form 67.7 per 1,000 in 1964 to 74.4 in 1967, 88.2 in 1970 and 93.6 in 1973. It only decreased thereafter as these welfare and wage policies were reversed. See Bacha (1977: 54); Avelãs Nunes (1990: 493).
[42] See Malan and Bonelli (1977: 22-3).
[43] According to Suzigan et al. (1974: 162), 67.6% of the growth of the apparel and footwear sector and 45.3% of that of foodstuffs production were the result of export growth.
[44] See Batista (1992: 164).
[45] See DIEESE (1997). This author, however, underestimates the magnitude of the appropriation as it compares the rate of actualisation of the FGTS with the rate of increase of the General Price Index, usually lower than that of the Consumer Price Index.

Banco do Brasil and the Caixa and used to finance public sector investment in social overhead capital. They too yielded returns usually below the inflation rate. Both transferences accelerated in the early 1970s when the National Integration Program (PIM) to build the Trans-Amazonian Highway and populate the Amazonian region with surplus peasant population from the poverty-stricken Northeast was launched, and the First National Development Plan was put forward.[46]

As the general wage contraction of the period 1964-67, the process of wage differentiation during 1968-73, necessary to compensate for the stagnation of the land rent, could only come about through the actions of a repressive, authoritarian state. In effect, the hard-liners in charge of the executive branch of the state since early 1967, when the recession that commenced in 1963 bottomed out, tightened their grip over the Brazilian society. The incipient revival of political opposition in Congress, trade union activism and pro-democracy struggles in mid-1967 and, notably, in 1968, when the economy boomed for the first time since 1962 and labour market conditions began to improve, were met with increasingly fierce repression. In late 1968, a minor incident in Congress that somehow challenged the military's supreme authority gave the government the excuse to pass the Fifth, and most draconian, AI. This closed the Congress indefinitely (it would be purged and reopened in 1970) and put forward a further crackdown on political and civil liberties, including the suspension of *habeas corpus*. Press censorship became complete, except for regime addict Globo media group, and torture of political dissidents or trade unionists was turn into an active state policy. Furthermore, when Costa e Silva's sudden succession was discussed in 1969, General Garrastazu Medici, another hard-liner in charge of the SNI, was chosen for the position.[47]

Garrastazu Medici's government (1969-73) marked not only the peak of the growth process but also of the state's repressive activities. Under the ideological argument of fighting domestic guerrilla insurgency, which had emerged as a form of resistance against the authoritarian regime, but was now numerically unimportant and

[46] On the PIM, see Hall (1987); Abreu (2008: 380-81). The plan to develop agriculture in the Amazonian region, however, failed as the soil was not particularly suitable for cereals and oilseeds production as originally planned. Nevertheless, with the pass of time, a market-oriented cattle ranching sector would emerge in the region.

[47] See Erickson (1979: 170-1); Skidmore (1988: 105-35); Fausto (1999: 287-92); Bethell and Castro (2008: 183-91).

confined to marginal, unpopulated regions of the country,[48] the military pursued a further crackdown on its political enemies. The always active students' unions were repressed harshly.[49] The lack of a Confucian tradition, nevertheless, did not stop students from attempting, as their Korean counterparts, to demonstrate and militate against the military dictatorship. Independent trade unions were silenced almost completely and only those controlled by the state were allowed to remain active. In line with their corporatist spirit and tradition, their actions, however, were largely functional to the implementation of the government's wage and welfare policies.[50] Only some sectors of the Catholic Church emerged as an audible voice against the authoritarian and repressive military government.[51]

In sum, rather than experiencing a kind of structural transformation that departed from the previous ISI process, as argued elsewhere,[52] the previous limited specific form of capitalist development was regenerated after the 1963-67 economic crisis. The particularity of the 1968-73 years arose, however, from the existence of a large inflow of interest-bearing capital, and the payment of a portion of the labour-force below its value (i.e. its full cost of short and long-run reproduction), complementing the land rent, in supporting industrial capital's profitability. Industrial capital kept selling the largest portion of its output in a domestic market that, despite the claims of 'openness', continued to be highly protected by import tariffs and the Law of Similarity.[53] Indeed, the reduction of import tariffs was roughly proportional to the reduction in the degree of overvaluation of the exchange rate. Neither was the recovery simply the result of a favourable international context (e.g. strong external demand and large supply of credit) that could be taken advantage of at low cost thanks to the large idle industrial capacities existing after the prolonged recession of 1964-66, as suggested elsewhere.[54] First, as argued above, manufacturing exports only expanded due to the generous subsidies that supported them and the reduced wages industrial capital paid in the non-durable consumer goods sector. Secondly, the inflow of foreign loans, though strongly expanded, was still substantially smaller than the land rent appropriated by social actors

[48] Estimations on the number of guerrilla members go from 800 (unofficial) to 1650 (official). The CIA Director of that time put the number in 1000 at their peak. See Bethell and Castro (2008: 188).
[49] See Bethell and Castro (2008: 191-4) on students opposition to the military regime.
[50] See Erickson (1979: 159-60).
[51] See Skidmore (1988: 135-8); Bethell and Castro (2008: 194-5).
[52] See e.g. Simonsen and Campos (1979); Portugal (1994: 243).
[53] See Von Doellinger, et al. (1974: 134). See also Abreu (2008: 375) on the lack of structural change.
[54] See e.g. Malan and Bonelli (1977).

other than landowners. In a nutshell, the key task is to explain why in 1968-73, given the international context, the Brazilian economy developed in the form it did, which differed in essence from the path followed by its Korean counterpart and only in form from its own previous experiences.

Korea: From the democratic 'restoration' to the Yusin Republic (1964-1972)

In 1964, the Korean economy was in crisis and the FFYP practically finished two years before completion. In May that year, the different exchange rates for imports and exports were unified again and were significantly devalued thereafter, though still remaining approximately 32% above the real purchasing power parity of the Korean Won in 1964-65.[55] Nevertheless, as mentioned above, exports of unskilled labour-intensive goods had grown strongly during the previous two years; contrasting with the weak overall performance of the economy, crucially the import-substituting industries.

The fast expansion of industrial exports in a relatively unfavourable environment (i.e. a substantially overvalued currency and low compensatory subsidies) surprised policy-makers and convinced them to start 'supporting' these activities actively.[56] Several policies were then introduced, or reinforced, in order to 'promote' exports of industrial goods. None of these policies, however, constituted an actual subsidy helping to improve artificially the competitiveness of Korean exports of light manufactures in world markets. First, some policies levelled the playing field between Korean exporters and their foreign competitors, generally benefiting from these measures already. These included the complete exemption of tariffs and other restrictions on the importation of raw materials and equipment used to manufacture export goods.[57] As exports were rapidly expanding and diversifying, during 1965-66 there was thus a corresponding increase in the number of goods automatically approved for importation. Indeed, the transformation was so remarkable that from 1965 to 1966, in only on year, the import content of Korean exports jumped from 8% to 53%. Secondly, other policies were used to compensate for the negative effect of the still

[55] See graph 2.2 in Chapter 2 for the evolution of the overvaluation of the exchange rate.
[56] See Hong (1979: 68). "Although incentives to raise exports had been in place since 1960, talk of making exports the center of economic plans did not emerge until the early months of 1964; it was announced only in the middle of that year and became embodied in the planning process in 1965. By 1965, the centrality of exports was announced publicly, and in 1966, the second five-year plan - which operationalized this shift - was launched." Chibber (1999: 327).
[57] See Westphal and Kim (1977: I-11); Hong (1979: 53-7, 101-2).

prevailing, though reduced, overvaluation of the currency on the portion of the value of exports added domestically, and thus to allow the expansion of industrial exports by not penalising (i.e. 'taxing') them. These included the exemption, partly or completely, of domestic taxes on profits earned on exportable productions; the granting of subsidised loans to finance the production and commercialisation of exports and to supplying industries; the permission granted to exporters to sell in the protected domestic markets imported raw materials not used in exportable productions (the so-called 'wastage allowance'); and, after 1967, the provision of inputs by state-owned public utility companies and overhead capital at reduced rates. Most of this type of policies had been in effect since the late 1950s. Their scope and magnitude, however, had been limited and their impact, consequently, almost insignificant.[58]

In effect, 'genuine' (from world-markets perspective) subsidies granted to exporters in the form of internal tax exemptions, low-cost credit and 'wastage' allowances (i.e. not including import tariff exemptions) averaged 17.7% of the value of exports during 1966-8 according to the most generous estimations.[59] The exchange rate for exports, during the same period, was on average 48% overvalued, implying a 29% 'tax' on net exports (i.e. the value added domestically).[60] During those years, however, only 48.6% of the value of manufacturing exports was added domestically.[61] Consequently, the actual 'subsidy' minus 'tax' was equivalent to only 4% of the value of net exports.

On the other hand, the overvaluation of the exchange rate reduced the cost in local currency of imported equipment and thus aided the rapid formation of capital in the industrial sector. This was necessary to undertake the swift transformation of the structural bases of the Korean process of capitalist development and engender the process of 'export-led' growth. Thanks to its permanent access to international credit, the Korean state managed to keep the national currency overvalued until 1985 when the economy posted its first post-WWII trade surplus. Before then, the overvaluation of the Won stimulated trade deficits, which were financed with substantial foreign 'savings'.[62]

Until the early-1970s, the overvaluation of the currency, usually not compensated with subsidies granted through state purchases, high minimum prices and

[58] See Brown (1973: 139-52); Westphal and Kim (1977: I-5-10); Hong (1979: 53-7, 117-30).
[59] See Brown (1973: 140).
[60] See graph 2.2 in Chapter 2.
[61] See Krueger (1979: 136).
[62] See Gordon Nembhard (1996: 84).

market protection, also kept domestic prices of rice and barley below international values and thus made possible the payment of even lower industrial wages. Moreover, in doing so, this same policy kept rural incomes at subsistence levels and thus generated the large migrations to the urban centres that were necessary to supply labour to the rapidly growing manufacturing sector and to limit pressures on industrial wages.[63]

Apart from these policies, the government also created or sponsored the formation or expansion of several organisations charged with the promotion and facilitation of industrial exports. Some of these organisations were under direct control of different organs of the state. These included the so-called Thirty-five Commodities Chiefs and the Korean Trade Promotion Corporation (KOTRA) which had been founded in 1962 but became a key part of the export effort only after 1965. The former were designated by the Ministry of Commerce and Industry (MoCI) and the Ministry of Agriculture and Forestry to develop programmes for the export of specific commodities and to coordinate them with representatives of the corresponding industries. KOTRA, in turn, became the overseas arm of the MoCI, establishing facilities to display Korean goods, seeking buyers for them and giving advice to firms on market requirements. A second group of organisations was, at least in principle, under private control. These included the Korean Traders Association (KTA) which, nevertheless, sustained a close relation with the MoCI and KOTRA. The KTA was in charge of organising meetings with foreign partners and advising the government about private sector requirements related to its export activities. Finally, there was a group of 'mixed' institutions – i.e. integrated by both public and private sector representatives. Among them, the most well-known was the Export Promotion Subcommittee (EPSC) which was created in 1965 and became a central organisational locus for mobilising support for exports expansion. The EPSC consisted of a series of 'task groups' assigned to examine all problems and issues related to export industries and influenced the annual export promotion policies proposed by the MoCI.[64]

Supported by this arsenal of policies and organisations, export growth, notably of light manufactures, accelerated after 1964. Industrial output and value-added growth thus accelerated even if GDP growth slowed down markedly in 1964-65.[65] Labour demand growth recovered strongly in the industrial sector, notably in 1965 when around

[63] See Shin (2003: 78-9); Wideman (1974: 278-83).
[64] On the emergence, consolidation and characteristics of these institutions, see Brown (1973: 148-9); Michell (1988: 61-8); Haggard et al. (1991: 865-7).
[65] See graph 4.5 in Chapter 4.

135,000 new jobs were created. Real industrial wages, nevertheless, remained stagnant. The massive surplus population existing in the rural sector and the political repression of the industrial working-class militated against any sort of wage recovery.[66]

By 1965, it was increasingly clear to policy-makers that light manufactures were the most dynamic sector in the economy. The government then embarked in the preparation of the Second Five-Year Plan (2FYP) for the period 1967-71, to provide a coherent institutional framework to make the policy shift effective.[67] On the other hand, as overall economic growth slowed, two other sharp policy shifts were also implemented. First, an 'interest rates' reform was effected, sharply increasing the cost of loans granted by public banks and the returns on private savings. This reform, much vaunted for its alleged positive impact on the evolution of domestic savings and investments,[68] marked the end of negative interest rates as a form to provide unselective support to the valorisation of industrial capital producing for the domestic market. During this period, subsidised credit would be granted only to exporters; irrespective of the type of product they were selling in the world market for working capital and to labour-intensive industries only for medium- and long-term investments.[69] The positive effect of reform on resource mobilisation is, however, debatable as it probably simply facilitated the transference of savings from non-financial assets (e.g. inventories, real estate) and the unregulated financial markets to the state-controlled banking sector, as policy makers intended, rather than increasing them, as *ex post* analysts claimed.[70] Secondly, with the intention of securing new sources of foreign exchange to compensate for falling US aid, in 1965 Korea joined USA's crusade in Vietnam and also signed a treaty normalising its relations with Japan despite widespread opposition to both. The result of this action was to open a new source of foreign exchange income, aid and loans, as Korea secured material compensation from its former colonial master, and also of commercial partners for its emerging export businesses.[71]

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[66] See tables C.5 and C.6 in Appendix C.
[67] See Chibber (1999: 327).
[68] See e.g. Brown (1973: 179-93); Rodrik (1994).
[69] See Hong (1979: 117-24).
[70] See Cole and Pak (1983: 201-11); Dornbusch and Park (1987: 411-9). It is doubtful that a society as poor as the Korean in the mid-1960s could have increased its savings rates from 7.3 to 18.8 percent of GDP in four years (1965-69) only by having the return on savings increased. The swift and sharp reaction of savings to changes in the interest rates (Brown, 1973:190-1) suggests, on the contrary, that most of these resources predated the policy change. As Cole and Pak (1983) explain, these increases in savings were contemporary with a sharp (57%) expansion of national income.
[71] See Kim (1975: 256-64); Chibber (1999: 329-36).

In effect, for Korea to become rapidly a producer of unskilled-labour intensive industrial goods for world markets, capital had to become available to be invested in equipment and raw materials. The problem was that not much capital was available, even when interest rates hike supposedly increased domestic savings. These still averaged only 14.3% of GDP during 1966-69.[72] Foreign industrial capital was not flowing to Korea in large amounts as its domestic market was small, and the prospects for producing labour-intensive goods there for global markets were regarded as far from certain.

In an attempt to speed up the inflow of capital, in 1966 the Law for Payment Guarantee of Foreign Borrowing (originally passed in 1962) was merged with the Special Law to Facilitate Capital Equipment Imports (1962) and the Foreign Capital Inducement Law (1960), to become the Foreign Capital Inducement Law. While domestic bank loans were being rationed, the new law introduced a more flexible process for the provision of state guarantees to private foreign borrowing for the acquisition of equipment and inputs used in export productions, by allowing commercial banks, now under public ownership, to grant them.[73] These laws, together with the Foreign Exchange Management Act (passed in 1961) gave the government almost complete control over the use of foreign exchange, and to channel it directly or indirectly to export-oriented industries. In this way, the state not only accelerated the concentration of capital but also kept consumption patterns under control.[74] In effect, other uses for scarce foreign exchange (either for production or consumption) were considered 'unnecessary' or 'wasteful' and thus restricted or forbidden altogether (e.g. 'sumptuary' consumption such as foreign holidays).[75] Furthermore, the new legislation expanded the incentives granted to foreign capital to undertake direct investments. In 1966, limits on equity investment and profit remittances by foreign investors were completely removed while tax exemptions were expanded. Nevertheless, although inflows of interest-bearing capital grew massively, FDI remained modest.[76]

Was the specific structure of capital inflows the result of the prevailing political uncertainties as argued by some authors?[77] Or, was it the result of unwritten

[72] See Cole and Park (1983: 267).
[73] See Collins and Park (1989: 187); Chang and Yoo (1999: 6).
[74] See Hong (1979: 142-5).
[75] See Chang and Yoo (1999: 6).
[76] See tables C.32 and C.37. See also Wesphal and Kim (1977: IV-8); Chung (2007: 273-4).
[77] See e.g. Westphal and Kim (1977: IV-8).

administrative regulations limiting FDI, as claimed by other commentators?[78] Though these factors were probably important, at this stage of Korean development, the phenomenon was most likely connected to the type of export-oriented industries that were most rapidly developing. In effect, by then there was a key difference between the structures, organisation and governance of 'commodity chains' in the various branches of the light manufacturing sector. The textile and clothing industries, which rapidly developed in Korea and were the predominant sector in the export-led growth experience until the mid-1970s, were mainly organised as *buyer-driven* global production networks (GPN).[79] In this type of GPN, MNCs, such as large retailers located in industrially advanced countries, control the design and marketing of goods whose *integral* production is subcontracted to firms in low-wage 'developing' countries. On the other hand, the electronics industry, which was secondary in Korea's export experience until the mid-1970s, was then largely organised in the form of *producer-driven* GPNs. In these cases, MNCs either directly control the different stages in the production of a good (its value chain) by establishing subsidiaries in low-wage 'developing' countries to perform *specific* parts of the industrial labour-processes (e.g. manual assembly) or by subcontracting them to domestic firms there. Effectively, though this sector was smaller than the textile, garments and wigs industries, by 1966 Korea began to receive substantial investments by MNCs to assemble electronic components and consumer goods, such as integrated circuits and radios, for export markets. In contrast to the textile and garments industries, in the electronics sector foreign companies were, until the mid-1970s, in charge of the largest part of Korean production for world markets. Moreover, in 1970, the first Free Trade Zone was opened in Masan to accommodate mainly electrical machinery and appliances productions by foreign, mostly Japanese, companies. To the usual lavish set of incentives, was added the practical prohibition to any kind of trade union activities in foreign-invested firms.[80] The narrowness of the Korean domestic market severely reduced the incentive for foreign manufacturers of durable-consumer goods and industrial inputs to invest there *vis-à-vis* other developing countries like Brazil. As was seen above, this was evident in the negotiations between the state and foreign investors unwilling to venture into the Korean steel and motor-vehicle industries. Restrictions on FDI, in terms of ownership

[78] See e.g. Mardon (1990).
[79] See Henderson (1989); Gereffi (1994); Gereffi (1999); Gereffi and Humphrey (2005).
[80] See Hart-Landsberg (1993: 83); Choi (1981: 86).

and sector, would only begin to be systematically used in the mid-1970s, after the launching of the Heavy and Chemical Industries Plan.[81]

To reinforce the change in the direction of economic policies that was then mediating the structural transformation of the Korean process of capitalist development, in 1966 the Second Five-Year Economic Plan (2FYP) for the period 1967-71 was launched with the core goal of promoting exports of light manufactures and sectors supporting them, as well as basic industries like fertilizers, metals, machinery, chemicals and oil refinery. The former two, it was intended, would increase foreign exchange earnings. The latter group of industries, it was argued, would reduce the use of foreign exchange. The Plan was, in effect, a mixture of ISI and EOI 'developmental' strategies, allegedly intended to help reduce Korea's heavy reliance on 'foreign savings', especially when US aid was being cut substantially and rapidly.[82] The Plan also recognised Korea's lack of skilled manpower and pointed at putting forward concrete measures to correct this.[83]

As part of the policies that made the 2FYP operative, and continuing with the measures implemented during the previous two years to facilitate the development of export-oriented industries, in 1967 the foreign trade regime was reformed and liberalised further. The system of positive discrimination against imports (i.e. only listed items could be imported) was replaced by one that allowed the importation of goods not explicitly banned. Thereafter, all goods necessary for export productions would be excluded from the list of forbidden items and could be freely imported, paying relatively low taxes.[84] Conversely, those items still included in the 'list', largely consumer goods, kept being protected by higher taxes and, crucially, quotas and other quantitative restrictions.[85]

Furthermore, in 1968, the Law for Fostering Capital Markets was passed to encourage public sector external borrowing.[86] This was necessary partly to fund investments in SOEs producing industrial inputs and to sustain the overvaluation of the national currency in light of the falling inflow of foreign aid. From 1969 onwards, only

[81] See Hart-Landsberg (1993: 85-6); Chung (2007: 274-7).
[82] "During the Second Plan, labor intensive consumer goods industries will be further expand [sic], and the foundation for heavy goods industries will be established in order to achieve economic self-sufficiency and promote a balanced development of the economy." (Economic Planning Board, 1966: 2). See also Hong (1979: 42-3)
[83] See Economic Planning Board (1966: 3).
[84] See Brown (1973: 154-62).
[85] See Hong (1979: 104-9); Leudde Neurath (1985: 89-132).
[86] See Collins and Park (1989: 187).

the public sector was allowed to borrow in global financial markets. Private firms would, after government's approval, only borrow to finance imports of raw materials and equipment.[87]

Led by a rapid increase in exports of light manufactures, the provision of materials and military 'services' to the US Army in Vietnam, and supported by a substantial inflow of foreign credit, equal to around 19% of GDP during 1966-69, which financed imports of industrial equipment, economic growth speeded up strongly. In effect, GDP per capita grew at an average rate of 9% per year during the second half of the 1960s while industrial employment and wages expanded by 14% and 10% per year, respectively.[88] Some authors have argued that this strong export-led growth resulted essentially from the association of Korean industrial capital as junior partner of its Japanese counterpart, which needed to relocate several labour-intensive productions to lower-wage locations.[89] Other authors have claimed that it resulted from the combination of favourable macroeconomic policies (e.g. devaluation, interest rates reform) and, crucially, the consolidation of an export friendly institutional setting.[90] A third group of authors has suggested that it resulted from the penalisation of firms not complying with government export plans and leadership.[91] All these characterised the structural transformation of the Korean economy through the 1960s. They were, however, secondary factors in terms of explaining the structural transformation of the Korean economy.

As mentioned above, the transformation, throughout the 1960s, of the Korean economy into an 'export-oriented' one, where capital accumulation revolves around the production of unskilled-labour intensive industrial goods for world markets, resulted from three main underlying processes. First, the increase in the cost of the Japanese labour-force, as Japanese industrial capital was beginning to produce heavy and durable-consumer goods for world markets under the conditions described above. Secondly, the availability in Korea of a large pool of unskilled labour-power of peasant origin that was not only extremely cheap in international terms but that also had productive characteristics (in terms of discipline and subordination under authority) similar to the Japanese industrial workforce. This latter factor particularly increased the

[87] See Chang (1999: 8-9).
[88] See graph 4.5 in Chapter 4 and tables C.5 and C6 in Appendix C.
[89] See e.g. Chibber (1999),
[90] See e.g. Haggard et al. (1991)
[91] See e.g. Amsden (1989: 69).

productivity of labour when put to perform relatively simple, standardised tasks. Thirdly, the relatively small and stagnant size of the Korean primary sector surpluses and the falling magnitude of foreign aid inflows were weakening the bases of the previous specific form of capital accumulation at the same time that they were expanding, through the contraction of real wages, the potentialities of the emerging one.

The aforementioned policy and institutional changes, as well as the particular type of FDI inflows and modality of integration of local firms into GPNs, were concrete forms under which the transformation of the Korean process of capitalist development came about through the 1960s. In other words, these political and institutional transformations mediated the economic one; they did not cause it. These institutional and policy transformations, some of which did not differ radically from those implemented in Brazil during the second halves of the 1950s and 1960s, were largely a response to the necessities or signals of markets (domestic or global) and depended on the objective material conditions for the valorisation of industrial capital. They yielded positive results only because global market circumstances and the productive characteristics of the Korean labour-force meant that, once the minimum requirements for their development were fulfilled, specific industries could compete successfully worldwide without further state support.[92] Moreover, as Kohli (2004) and Jones and Sakong (1980) put it, the fine-tuning of these economic policies and institutional settings was 'pragmatic' and 'flexible', followed a 'trial-and-error' pattern which included frequent 'feedback' from capitalists and 'had to be made to fit the private calculations of profitability.' Yet, and crucially, these economic policies and institutions were not the only ones mediating and making effective the transformation of the specific structural bases of the Korean process of capitalist development. The suppression of fully democratic institutions of government and the repression of the Korean labour-force, notably female workers, were not unfortunate, otherwise avoidable, accidents in the Korean political economy: they were an integral part of the

[92] It has been argued elsewhere that the US administration reduced the amount of aid granted to Korea in order to force its government to balance its accounts and devalue the exchange rate (see e.g. Krueger 1979). Some observers even venture that the US government took this resolute action to force Korea to change its 'developmental' strategy and choose an EOI 'growth model' (see e.g. Haggard et al. 1991: 863-4). This, however, seems hardly to have been the case. As Chibber (1999: 328) points out, policies 'suggested' by the US government to its Korean counterpart, which included the promotion of exports to fund ISI programmes, did not differ from those being currently 'advised' to other developing countries. According to Cole and Lyman (1971: 209-10), this was the locus of the Nathan Plan, developed by US 'independent' consultants for the UN Korea Reconstruction Agency after the war. Moreover, as Michell (1988: 125-6) and Amsden (1989: 142-3) notice, the US government banned, until the mid-1960s, the exportation of Korean textiles using raw cotton granted through its aid programme.

development of the process of capital accumulation under its transformed specific base. Effectively, the payment of internationally low wages and the imposition of long working hours under hazardous and, sometimes, semi-slave conditions, notably for female and unskilled workers, were key factors supporting the profitability of export-oriented industrial capital in Korea during this period.[93]

As noted in Chapter 1, such conditions were possible not only due to the historical origins of the Korean labour-force, namely, the highly hierarchical and patriarchal structure (i.e. male chauvinism, cult to educated individuals, and submission towards authority) of the Korean society and the habituation to harsh labour conditions.[94] These conditions were also reinforced by a disproportionally large repressive state apparatus, supported by the US military stationed in the country, press censorship and the enactment of highly restrictive labour laws. As was discussed in Chapter 4 above, legislation passed since Park's arrival to power prohibited strikes and the formation of independent federations of trade unions, limited collective bargaining, circumscribed wage negotiations to the company-level, forbade the unionisation of temporary workers and left in the hands of the Ministry of Labour the definition of any dispute over working conditions and compensations.

In effect, under these tight and politically controlled labour market institutions, wages, though growing, remained at below subsistence levels, notably in the export-oriented labour-intensive industries, while working hours and industrial accidents remained not only among the highest in the world but were also, on average, increasing.[95] Moreover, these institutions, together with minimal state expenditures on such universal social services as pensions, healthcare, housing and, to a lesser extent, education, helped maintain the differentiated reproduction of the Korean working-class.[96] Poverty remained widespread, notably among those migrating from rural areas, and slums mushroomed in the main industrial cities, especially in Seoul where they constituted around 30% of the housing stock.[97]

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[93] See Bello and Rosenfeld (1992: 24-8).

[94] According to Cole and Lyman (1971: 138), "Korean workers have been described by one manpower specialist as 'adaptable, trainable, manually dexterous, and accustomed to arduous work for long hours'." See Amsden (1991: 30); You (1995: 123); Koo (2001: 46-54) on the impact of patriarchalism and male chauvinism on Korean industrial relations.

[95] See tables A4.7 and A4.17 in Chapter 4.

[96] See Park (1991); Shin (2003: 66-71). The full cost of reproduction of the local labour-force, consequently, had to be covered by individual workers' wages and their families' income and savings.

[97] See Breidenstein (1974: 245-50); Haggard (1994a: 27); Shin (2003: 79).

It is then hardly surprising that Park, the general-turned-politician, and his DRP managed to obtain only slightly more than one-half of the valid votes in the 1967 presidential and National Assembly elections, despite use of massive funding (most of it illegally obtained from private domestic and foreign sources), having control of the state repressive arm, the lack of an independent media, and rigging vote counting. It is not surprising either that, as in Brazil, most of the government's political support came from the rural areas where patronage and intimidation were pervasive. In Seoul, Korea's rapidly growing industrial centre, where most of the textile and garments industries were located, the opposition was strong.[98] Nevertheless, the 1967 victory allowed the Park regime to consolidate its control over the National Assembly and eventually to put forward, not without opposition, a new Constitutional reform permitting the indefinite re-election of the president.[99]

By the turn of the decade, however, Korean economic growth began to slow, falling from 12.25% per capita average between 1966 and 1969 to 7.8% during 1970-72.[100] Though these levels of growth would have been considered sufficiently high for other developing economies, including Brazil, they were not so for Korean society with its very low wages, hard working conditions and rapidly increasing labour-power supply, as large portions of the rural underemployed (amounting to half a million per year) were migrating to seek employment in the urban centres. In 1970, official unemployment and underemployment stood together at 9% of the economically active population.[101] Though almost half the level of 1964, this was still significant, notably considering that the employment rates were 75.1% and 38.5% for males and females, respectively (56.8% average).[102]

As the 1966-69 acceleration of economic growth, the deceleration of 1970-72 resulted from the dynamics and contradictions inherent to the new specific form of capitalist development. In 1969, global economic growth began to slow, thus limiting

[98] See Kim (1975: 271).
[99] On 14th September 1969, the Park regime reformed the Constitution in a session held at 2.30 am wihtout the presence of assemblymen from opposition parties who were sleeping in the entrance of the building to block the session. Assemblymen from the official DRP managed to enter through a back door. The amendment was voted in a national referendum in October, receiving around 50% of the eligible votes (much less than that in Seoul). See Kim (1975: 275-6).
[100] See graph 4.5 in Chapter 4.
[101] Accounting for disguised unemployment, the rate of unemployment in the rural sector reached 15% in the early 1970s. See Hamilton (1986: 42).
[102] See Fields (1982: 13) on employment rates.

the expansion of Korean exports.[103] This process triggered a new wave of protectionist policies across industrially advanced economies. In 1971, for example, the US government forced Korea to sign a bilateral trade-restraint agreement on textiles, a sector that, in 1970, had accounted for 33% of total manufacturing output, 32% of industrial employment, and 38% of total exports. Textile exports to the US themselves had accounted for 20% all Korean manufacturing exports.[104] Furthermore, in June 1971, the USA withdrew one-third of its troops in Korea and abruptly terminated its food assistance under PL 480 at the same time that Korean troops were returning from Vietnam. These together resulted in a reduction in the inflow of foreign exchange resources equivalent to approximately $150 million per year (one-third of the net external borrowing in 1971).[105] Despite the alleged US geopolitical interest in, and special support for, the Korean process of export-led industrialisation, the Korean government had then no choice but to apply for IMF assistance to deal with its emerging balance-of-payments difficulties.[106]

In accordance to the IMF stand-by arrangement, a series of adjustments were undertaken beginning in 1970. First, new medium-term loans were strictly limited in order to reduce the accumulation of external liabilities and debt-servicing growth.[107] Global credit markets were not booming anyway as the US government tightened its monetary policy in a short-lived attempt to control inflationary pressures.[108] The net inflow of foreign interest-bearing capital fell by a third between 1968-69 and 1970-72.[109] Foreign exchange reserves fell sharply, putting pressure on the Korean Won and forcing a partial devaluation of the exchange rate. Secondly, monetary expansion was tightened in order to control the inflationary process and thus reduce the pressure on the exchange rate. By 1971, a slowdown in economic activity was evident, albeit from very high levels. Real growth rates declined as did the growth of imports, particularly of equipment, resulting in a contraction of capital formation.[110]

In 1971, the Third Five-Year Economic Plan for the period 1972-76 was launched in response to the emerging bottlenecks in the external accounts of the Korean

[103] See Park (1986: 1027-8). See also Brenner (2005: 122-42) on the worldwide spread of economic difficulties during the late 1960s.
[104] See Hart-Landsberg (1993: 175).
[105] See Kim (1975: 280) on the change of US military strategy in Korea.
[106] See Haggard (1994a: 30-1) on the IMF stand-by agreement.
[107] See Collins and Park (1989: 188); Chang (1999: 8-9).
[108] See Brenner (2005: 126).
[109] See graph 2.17 in Chapter 2.
[110] See Collins and Park (1989: 188).

economy. First, the promotion of the agricultural sector was put as a top priority of the Plan. The end of low agrarian prices was quickly made effective through the so-called Positive Price Policy administered by the Grain Management Fund, thus putting an end to the systematic transfer of resources from the agrarian to the industrial sector. The state-sponsored Saemaul (New Community) Movement, in turn, channelled public funds to rural areas to finance investments in infrastructure and housing.[111] In the short run, these policies were instrumental to Park's electoral plans by broadening its support in the countryside. In the long run, however, they were sustainable because they helped improve the conditions of reproduction of rural populations and thus the quality of the migrant workforce. Secondly, exports would continue to be promoted but heavy industrial goods would receive increasing support to cope with the potential reduction of light manufacture exports. Thirdly, heavy and chemical industries were, again, included among the priorities for the period 1972-76 to reduce imports and 'balance' the structure of the local economy.[112]

Despite these government initiatives, foreign loan inflows kept shrinking, and the availability of local official credits failed to fill the gap, crucially as their demand expanded due to the growing economic hardship. Korean industrial firms were increasingly forced to rely on the domestic unregulated money market where the cost of funds was substantial. Interest rates in the unregulated 'curb' market were 40-50% per year, well above the 15-22% charged by official banks.[113] To make things worse, the devaluation of the currency was increasing the value of foreign liabilities and putting extra pressure on industrial profitability. Some privately-owned industrial firms were then beginning to default on their foreign debts, passing the burden to those public banks that had guaranteed them.[114] Against this backdrop, in 1971 the Federation of Korean Industries, the organisation representing the largest industrial firms, the *chaebols*, put forward a petition to have their unofficial debts transformed into official ones, with the corresponding change in repayment conditions, and for corporate taxes to be lowered to improve the sector's profitability. The government rejected these claims slating that the crisis would not last much longer. Public finances were not healthy either.[115]

[111] See Moon (1991a); Moon (1991b).
[112] See Economic Planning Board (1971); Cole and Lyman (1971: 213-4); Michell (1988: 72-3).
[113] See Cho and Kim (1995: 36). See also C.35 in Appendix C.
[114] See Kim (1975: 278); Park (1986: 1028).
[115] On the evolution of public sector budgets deficits, see Park (1986: 1053); Chung (2007: 159).

As the economy slowed, employment and wage growth were affected negatively, crucially in the export-oriented, labour-intensive industries where young unskilled female workers, largely on temporary contracts, constituted the bulk of the labour-force.[116] As business failures multiplied in this sector of the Korean economy, worker discontent, which had been increasing steadily since the late 1960s, became now openly manifest, even under the prevailing tight political environment.[117] Protest, however, was usually inorganic, as most workers were not unionised and independent trade unions were almost non-existent. The self-immolation of a male tailor in a street demonstration in Seoul's garments industry claiming respect for labour protection laws, the burning of several factories over unpaid wages, and the unsuccessful struggles for establishment of democratic unions in the textile industry were examples of this type of impotent labour resistance.[118] Unions in industries where semi-skilled male workers were concentrated, as most of the rest of the Korean society and opposition parties, were, nevertheless, relatively immune to these protests. Sectors of the Catholic and Protestant Churches, relatively important in Korea, together with groups of students, became the most important source of worker 'external' support.[119] In this context, it is hardly surprising that, again, the official DRP lost in the major cities in the general elections held in 1971. Public funds (e.g. patronage), intimidation and vote rigging in rural areas were, as in most of previous electoral contests, necessary to assure DRP's victory on national level.[120]

The Park regime responded to this incipient state of social unrest in the only way it could; with further political repression. In early December 1971, a 'national emergency' was declared. A few weeks later, in an illegal secret session, the National Assembly passed the Law Concerning Special Measures for Safeguarding National Security which gave President Park "the authority to ban public demonstrations; freeze wages, rents, and prices; and to 'mobilize any material or human resources for national purposes'. As part of this special law, the legislation limiting labour activities at foreign

[116] See Choi (1981: 52-4) on the gender composition of the labour-intensive export-oriented.
[117] See Kim (1975: 285) on the increase in labour discontent as the economic crisis developed.
[118] See Koo (2001: 70-85).
[119] The 'dual' structure of the Korean labour market, reinforced by the strong prevalence of male chauvinism, posed then a severe restriction on any type of solidarity across different parts of the Korean working-class, either active or prospective (i.e. students). Members of the Christian Churches, on the contrary, moved by their humanistic ideologies and concerns constituted, a base of support for unskilled female workers in their largely unsuccessful struggle to improve their working conditions and wages. See Koo (2001: 85-9). This struggle set, however, a lower limit to the conditions of purchase and use by capital of this portion of the industrial labour-force.
[120] See Kim (1975: 282-3); Haggard (1994a: 28); Clifford (1998: 76).

firms was both tightened and expanded to include workers in all enterprises. While it remained legal to form unions, the Office of Labour Affairs would thereafter dictate the terms of collective bargaining for all industries and would also act as the sole mediator of all labour disputes; its rulings would be final and binding on all parties".[121] Though passed largely as a response to a climate of incipient social unrest, these measures would be critical in the subsequent period.

By 1972 the shape of the Korean economy had worsened significantly and, to avoid widespread bankruptcies in the private sector, the government was forced to do what it had refused in the previous year. In early August, it passed an emergency decree transforming the terms and conditions of all private debts outstanding in the unregulated money market. These were now to be ruled by the conditions of the official, government-controlled, credit market, as the Federation of Korean Industries had lobbied for before. The state was hardly 'leading the market' and 'disciplining capital' as argued elsewhere.[122] The unregulated credit market almost disappeared overnight and would only remerge when the economy recovered.[123]

Continuing the process of political closure initiated the previous year; the Park government dissolved the National Assembly and suspended the Constitution.[124] In December, without much previous discussion, the new Yusin ('revitalizing') Constitution was approved in a referendum held under martial law and boycotted by opposition parties. In sharp contrast to the repressive measures passed during the previous years, when the threat from North Korea was used as an excuse, this time the on-going negotiations with the latter were used to justify this new, more thorough crackdown on democratic institutions and political liberties.[125] The Yusin Constitution reinforced presidential powers and lifted any limitations to the President's re-election. The direct presidential election system was, once more, replaced by an electoral college, the National Conference for Unification. Moreover, the President, Park himself, gained the power to appoint a portion of the National Assembly members large enough to guarantee the parliamentary majority the regime needed to rule regardless of the

[121] See Hart-Landsberg (1993: 185-6). See also Kim (1975: 284-5).
[122] See e.g. Wade (1990); Amsden (1989).
[123] See Collins and Park (1989: 188-9); Nam (1991).
[124] Another bizarre incident, representative of the Park regime tactics, took place in October 1972. Kim Dae-jung, NDP's candidate in the 1971 elections, was kidnapped and flown to Korea by the KCIA from Japan where he was staying. He was only freed later on after strong pressure received from the USA and, notably, Japan. See Han (1974: 45).
[125] See Hart-Landsberg (1993: 186-7); Haggard (1994a: 28-9); Han (1974: 44-8).

electoral result. Indeed, this was the case after DRP's defeat in the February 1973 National Assembly elections.[126] The Yusin Constitution transformed Park's presidency from a fraudulent pseudo-democracy into a 'legal' dictatorship.[127]

End of chapter conclusions

After implementing a series of relatively 'orthodox' economic reforms (e.g. interest rate increases, currency devaluations, trade opening) during 1964-66, both economies experienced a period of fast growth accompanied by declining rates of inflation and the rapid expansion of industrial exports. The similarities between both countries, however, were more of form than substance. The Korean economy was then beginning a process of structural transformation. The Brazilian process of capitalist development, on the contrary, was essentially reproducing under the same previous, limited form. In effect, while Korean exports were goods that could be produced profitably using cheap and highly disciplined unskilled labour, Brazilian 'new' exports were mainly made of non-traditional commodities or processed raw materials which benefited from the low local cost of the inputs used to manufacture them and, after 1968, generous subsidies.

Political institutions in both countries developed also under relatively similar forms. The process of fast economic growth during this period came about in both countries through the abandonment of democratic institutions of government and the emergence of authoritarian and repressive regimes that would last until the mid-1980s. Yet these superficial similarities also hid a differentiated underlying determination. In Brazil, the authoritarian regime emerged to realise (i.e. mediate politically) the simultaneous reduction of blue collar worker wages and increase of white collar worker salaries. This process of increased income disparities was necessary simultaneously to compensate capital for the negative impact that a stagnant land rent had on its valorisation capacities and to expand the domestic markets for its output. The Korean authoritarian regime emerged to control the evolution of industrial wages, notably those paid to unskilled workers, and to limit the emergence of any effective opposition to the worsening of working conditions in the fast growing export-oriented industries.

[126] In the industrial centres of Seoul and Pusan Park's DRP only carried 35% of the votes. This results contrast with the view that Park's semi-dictatorial government bought political 'support' with economic 'success.' See Han (1974: 44).
[127] See Palais (1974: 346-50); Kim (2000: 57).

Chapter 7
Brazil and Korea between the Early and Late 1970s

Brazil: From the first to the second 'oil shock' (1974–1979)

In late 1973, the mass of land rent available for appropriation in Brazil experienced a sharp expansion as international commodity prices, in upward trend since 1972, shot up strongly.[128] The expansion of land rent available to support capital accumulation needed to come about through a new change in economic, social and labour policies and in the political institutions bringing them about. Not only was the payment of labour-power below its value no longer necessary, but the expansion of domestic markets for mass-consumed goods was also needed to absorb the increased production. The 'hard-line' sectors of the army were thus no longer capable of expressing politically the necessities of the Brazilian process of capital accumulation. Like Castelo Branco in 1966, they were incapable of forcing one of themselves as Medici's successor. In late 1973, General Geisel, a 'moderate' and nationalist Castelista, current president of Petrobras, was picked by the military to assume the presidency.[129]

In effect, in 1974, as the new government was formed, the economic and political forms of realisation of the Brazilian process of capitalist development began to show new features. By then, not only the land rent but also interest-bearing capital inflows enlarged sharply. The mass of extraordinary social wealth available to support industrial capital thus grew substantially. The first, late 1973, 'oil shock' was then manifesting itself not only in a sharp rise in international commodity prices but also in expanded global liquidity as the so-called petrodollars were being recycled through the banking system.[130] In 1974, the magnitude of the Brazilian land rent and the net inflow of foreign loans thus increased, respectively, to 11% and 6% of GDP and to 19% and 10% of all surpluses available in the economy.[131]

As soon as they assumed control of the state, 'moderate' sectors within the military, who succeeded the 'hard-liners' in command of government through the

[128] See Radetzki (2006: 57-60); Ocampo and Parra-Lancourt (2010). See also graph 1.1 in Chapter 1.
[129] See Skidmore (1988: 160-4); Fausto (1999: 295-6); Bethell and Castro (2008: 200-1).
[130] On petrodollars recycling, see Spero and Hart (2003: 25-8); Ruiz and Vilarubis (2007). Corbridge (1993: 29-37) notices that petrodollars contributed to *expand* the growing pool of loanable funds.
[131] See table 2.2 and graph 2.15 in Chapter.

'miracle', implemented a series of nationalist and developmentalist policies reminiscent of the pre-1964 populist era. The currency became again overvalued and import taxes were raised to compensate for this, thus expanding the portion of the enlarged land rent appropriated, respectively, by industrial capital (directly) and the state. The prohibition to export part of certain primary goods output, such as soybeans, rice and cotton, remained in effect, especially during the years of high international prices, as a way of keeping local prices further below international levels. In addition, the promotion of industrial exports, notably of motor-vehicles, was enhanced through an increase in subsidies that more than compensated for the overvaluation of the exchange rate.[132] Export subsidies were increased from around 20-25% of FOB values in 1969-1975 to 32.5% in 1976 and 34-38% in 1977-1979.[133]

Moreover, under the claim of being a response to the new international economic environment emerging from the quadrupling of oil prices and the concomitant increase in Brazil's import bill, the government launched the Second National Development Plan (NDP II, 1975-1979) to deepen the process of import-substituting industrialisation by increasing the local production of industrial inputs and the provision of infrastructure by state firms and of capital goods by private nationally-owned companies. It was assumed the Plan would finally transform Brazil into a global industrial power. Apart from the expressed desire of keeping economic growth at 10% per year, the NDP II had four main specific goals. First, it aimed at substantially substituting imports of capital goods and basic industrial inputs, including heavy and sophisticated machinery, chemicals, non-ferrous metals and steel products. Secondly, it sought to increase exports of raw and semi-processed materials such as agricultural products, cellulose, iron ore, aluminium and steel. Thirdly, it intended to expand local production of energy by investing in oil exploration, increasing the production of hydroelectricity, constructing nuclear plants and promoting the substitution of petrol by alcohol made from sugarcane for motor-vehicle transportation. Fourthly, it attempted to develop the railway and telecommunications system, and to extend rural electrification, irrigation and storage facilities, in order to reduce infrastructure bottlenecks. Moreover, the Plan also declared its intention to correct severe regional and income disparities.

[132] See Correa de Lago et al. (1979: 375-418); Tyler (1986: 7-8); Dias Carneiro (1990: 312-3). See also Abreu (2008: 383-6).
[133] See Abreu (2008a: 382). See also Brandão and Carvalho (1991b: 2) on the evolution of export subsidies.

This, it was stated, was not only desirable in itself, but it would also contribute to expand the domestic market for durable-consumer goods.[134]

Policies used to implement the NDP II were extensive. First, tax benefits were given to companies, nationally or foreign-owned, willing to venture into the newly favoured sectors. Secondly, the Law of Similarity and import tariffs were used to protect markets for nascent or expanding industries. Thirdly, SOEs policy of paying excessive prices for procurements, in particular for equipment and machinery, and charging low fees for their output reached its maximum expression, notably as these companies were leading the investments spree under the NDP II. Fourthly, the BNDE, hitherto focused on funding SOE investment programmes, granted heavily subsidised loans to nationally-owned industrial firms, especially to capital goods producers. Fifthly, a large programme of investments by state-owned companies and different organs of the public sector was launched. To make the Plan operational, new administrative divisions and state firms were formed and special savings schemes were created, including the National Development Fund.[135] Like during the implementation of the Targets Plan (1956-1960), investment priorities were defined by non-ministerial government agencies like the Councils for Economic and Industrial Development assisted by sectoral bodies for main supported industries (e.g. steel, shipbuilding, telecommunications equipment and mining). Fiscal incentives were also granted by regional development agencies such as Sudene (for the Northeast), Sudam (for the Amazon region) and Suframa (for the Manaus Free Zone).[136] Industry-specific sections were also created in the BNDE to administer the allocation of soft loans. Together, this set of ISI policies and the new institutions that implemented them mediated the transference of resources, most of them made out of the expanded land rent and foreign credits, from the state to industrial capital and its junior partners.

As was the case during the years of the 'economic miracle', the land rent appropriated by the state through different means was complemented, in enlarging public sector resources, not only with funds borrowed externally but also with a portion of the value of labour-power. Social insurance funds were channelled to industrial capital through the BHN and the BNDE. While the former continued 'managing' the FGTS to fund urban construction and infrastructure works, the latter now began to

[134] See Brazil (1974); Lessa (1988: 17-62); Serra (1982: 117-21); Dias Carneiro (1990: 310-1); Batista (1992: 18-22, 31-2).
[135] See Lessa (1988: 89-101); Batista (1992: 27-41).
[136] See Abreu (2008a: 388).

'administer' PIS/PASEP funds. As the rate of inflation increased throughout the 1970s, the magnitude of the resources transferred from wage earners (i.e. the working-class) to industrial capital grew larger.[137] In effect, the monetisation of a portion of the public sector deficit remained a usual practice to finance part of the investments programme under the NDP II and the inflation rate averaged 39% per year during 1974-1979.[138]

Economic growth remained strong in 1974 when the NDP II was launched, even if it decelerated with respect to the 1973 peak. Per capita GDP grew 11.4% in 1974 led by large state investments in infrastructure and industrial facilities. The investment rate reached unprecedented levels (22% of GDP). Industrial employment increased 6% and average real wages in manufacturing by 7.3%.[139] This time, under government-controlled adjustments, wages paid to unskilled industrial workers grew as fast as those received by their skilled and managerial counterparts.[140] Industrial capital no longer needed to resort to politically expensive harsh repression in order to effect the payment of a portion of the labour-force below its value. On the contrary, the opposite was needed in order to further enlarge the domestic market for durable-consumer goods. Legal regulations on wage adjustments were relaxed at the same time that a process of political 'distension' was promoted and independent trade unions activities were slowly allowed to emerge.[141] Moreover, in November 1974, the military permitted, for the first time in years, legislative elections to be held in a climate of relative freedom. Unsurprisingly for most, except the military in power, the MDB opposition actively fought the election, making significant gains in the large industrial centres of the Southeast. The official party, ARENA, only managed to retain the control of the Congress through the votes gained in the poverty-stricken Northeast. The old age system of patronage with public funds was still relatively effective there.[142]

During the second half of the decade, however, the inherent contradictions and weaknesses of the Brazilian process of capitalist development began to surface again as the global economy became increasingly unstable. The deceleration of world economic growth that had started around the late 1960s, but worsened after the increase in

[137] See Najberg (1989); Oliveira et al. (1999); DIESSE (1997).
[138] See Anglade (1985: 75-81, 91); Batista (1992: 101, 104-7).
[139] See graphs 4.4 and 4.10 in Chapter 4 on growth and real wages, respectively; tables C.6 and C.39 in Appendix C on employment and investment, respectively.
[140] See table A4.16 in Chapter 4.
[141] See Zurron Ocio (1986: 17-8); Skidmore (1988: 160-71); Dias Carneiro (1990: 297-303); Bethell and Castro (2008: 201-2).
[142] See Skidmore (1988: 171-73); Bethell and Castro (2008: 204-5).

commodity prices, began to manifest itself in the slowdown of global demand, including that for raw materials. International commodity prices thus began to fall, and with them the Brazilian land rent. In addition, the increase in global credit supply that resulted from the recycling of the petrodollars through commercial banks, though partly compensated the former, was not continuous either. It largely depended on the evolution of OPEC country balance-of-payments surpluses.[143] The evolution of the Brazilian process of capital accumulation would thereafter be subjected to the irregular development of these global forces. Hence, the slowdown of the rate of growth during the second half of the 1970s, after peaking in 1972-1974, was not a linear process. On the contrary, it came about through the irregular evolution of GDP growth, broadly following the progression of the combined masses of land rent and external credits available for appropriation by industrial capital, and the realisation of these movements through the alternation of expansive and contractive economic policies; the 'stop and go' cycle allegedly 'administered' by orthodox Finance Minister Mario H. Simonsen.[144]

In 1975, the international recession that followed the 1973-1974 hike in raw materials prices resulted in a movement in the opposite direction. The sharp increase in prices had severely affected the process of capital accumulation in the industrially advanced economies, notably in Europe and Japan. The ensuing recession would subsequently impact negatively on commodity prices and, therefore, on oil exporters balance-of-payment surpluses.[145] Brazilian land rent then contracted while the net inflow of loan capital to the local economy shrank. The combined mass of land rent appropriated by social subjects other than landowners and net interest-bearing capital inflows fell from 29% of the economy's surpluses in 1974 to 20% in 1975.[146] Once again, the relative contraction of the extraordinary sources of wealth that had been sustaining the *developmentalist* policies came about through their partial replacement with more orthodox measures. Both public sector expenditures (including some investments corresponding to the NDP II) and credit supply growth decelerated.[147] The pace of the process of political opening slowed markedly as the 'hard-liners' still in command of several repressive state institutions attempted to reassert their influence through a series of criminal acts, including the killing of a member of the independent

[143] See Ruiz and Vilarubis (2007).
[144] See e.g. Balassa (1979: 1028); Bresser Pereira (1984:176-7).
[145] See Ruiz and Vilarubis (2007: 16) on the evolution of OPEC's current account surpluses.
[146] See graph 2.17 in Chapter 2.
[147] See Balassa (1979: 1029); Anglade (1985: 71-2); Dias Carneiro (1990).

press.[148] State-controlled wage adjustments slowed, and average industrial wages fell by 8% in real terms, partly compensating the contraction of the land rent and external credit inflows in sustaining the process of capital valorisation.

As the rate of economic growth decelerated, a new, unexpected opposition began to emerge against the military regime. Some sectors of industrial capital under national ownership - the national industrial bourgeoisie - initiated a campaign against the excessive 'statism' allegedly pursued by the regime. Their institutional representatives claimed that the widespread intervention of the state in the economy, notably since 1974, had been largely benefiting foreign-owned companies at the expense of domestically-owned firms. They signalled this as the main cause behind emerging economic difficulties.[149]

During 1976-78, however, the world process of capital accumulation entered into a new period of rapid economic growth partly fuelled by the sharp increase of global liquidity resulting from the continuous recycling of 'petrodollars' and, increasingly, from the expansion of credit supply as a form of realising the global process of overproduction of capital.[150] Industrially advanced economies recovered strongly after the 1974-75 recession, crucially the USA. This expansion helped sustain global demand for raw materials and commodity prices remained at historically high levels even if below their 1973-74 peak.[151] As the land rent and net interest-bearing capital inflows expanded strongly, the Brazilian economy picked up, though at a lower speed and more irregularly than before 1975. Economic growth accelerated in 1976 as investments under the NDP II continued (or resumed in some cases), while subsidies to the private sector were expanded again, notably those granted through the price of goods and services provided by state-owned companies and BNDE loans. Growth

[148] See Skidmore (1988: 173-8); Bethell and Castro (2008: 206-7).
[149] See Anglade (1985: 86-9). Nationally-owned industrial capitals were in general less concentrated than their foreign-invested counterparts. The former (small capitals for world markets norms) therefore tended to transfer a portion of their surpluses to, and valorise at a lower rate of profit than, the latter (normal capitals). It is not surprising, then, that in times of slow economic growth, their inherently antagonistic partnership showed some strains, crucially as normal capitals tended to fall into hardship more slowly than small ones. In effect, the relationship between these two portions of private industrial capital and state-owned capitals supporting their valorisation processes was mediated by their degree of concentration. The so-called Triple Alliance of MNCs, domestic capitals and the state, which reached its plenitude during the 1970s, presented a hierarchical structure in which normal capitals, mainly foreign-owned, acted as 'senior' partners of landowners in the appropriation of the land rent. Small capitals played the role of 'junior' partners in this association. The Brazilian state, finally, mediated their partnership, through the different types of interventions reviewed above.
[150] See Brenner (2005: 143-63, 267-343); Iñigo Carrera (2008: 210-31) on the general (global) crisis of overproduction and the expansion of fictitious (interest-bearing) capital.
[151] See graph 1.1 and 1.2 in Chapter 1.

slowed in 1977, as the combined masses of land rent and foreign loans available to sustain capital accumulation suffered a short-lived fall, and accelerated again thereafter, as these resources grew larger. Industrial output expanded while the manufacturing base deepened substantially incorporating complex, high value adding productions.[152]

Though not all the ambitious targets set out in the NDP II were fully completed, throughout its implementation the Brazilian industrial sector 'deepened' substantially. During that period, investment rates fluctuated between 20 and 24% of GDP p.a., comparable to Korean levels.[153] The production of industrial inputs and energy expanded massively, while the country managed to produce all except high technology and design intensive means of production. The local production of steel, aluminium, fertilizers, hydroelectricity and cellulose, for instance, increased 13.1%, 15.9%, 23.6%, 12.4% and 19.7% per year, respectively, between 1974 and 1979.[154] Capital goods production began to include industrial equipment for hydroelectricity generation, telecommunications, nuclear plants and steel mills. The domestic supply of capital goods as a portion of apparent consumption increased from 73.2% in 1974 to 82.3% in 1977 and even higher in 1979.[155] Heavy engineering firms also expanded strongly. For instance, while in 1963 the proportion of hydroelectric equipment supplied domestically in large scale projects was only 11%, in 1975 it had reached 41% and in 1978 it was equal to 82-84% of the total.[156] The production of ships increased from around 200 deadweight tonnage per year in the early 1970s to 1200 in 1978 and Brazil became an internationally large producer of ships (by tonnage).[157] Agrarian production increased 30% during 1973-79 while employment in the sector remained stagnant thanks to the loans granted to the acquisition of agricultural machinery and inputs, and to the incorporation of new areas, like the Cerrado region, into production.[158]

This process of industrial growth and 'deepening' not only resulted in the increase of the demand for labour-power but also manifested itself in strong increases in labour's compensation. The latter were needed not only to expand the domestic markets for durable-consumer goods but also, and crucially, to reproduce an industrial workforce performing increasingly complex and more intensive activities. Under the

[152] See graphs 2.10 and 2.13 in Chapter 2 and graphs 4.2 and 4.4 in Chapter 4.
[153] See table C.39 in Appendix C.
[154] See Batista (1992: 55-83); Carneiro (2002: 72-6).
[155] See Correa do Lago et al (1979: 209).
[156] See Correa do Lago et al (1979: 399).
[157] See Ferraz (1986: 295). In 1975, Brazil was second in orders volume. See Jonsson (1995: 93).
[158] See Warnken (1999: 19-40).

prevailing, state-controlled labour market institutions and wage-adjustment processes, however, pay increases could not come about simply through the interaction between supply and demand for labour. Hence, the late 1970s witnessed the further relaxation of the system of political repression that had been limiting labour's bargaining power and the emergence, and later strengthening, of 'independent' trade unions and their successful mobilisation for higher wages during 1978-1979.[159] Moreover, this process of political advance of the Brazilian working-class at large (i.e. blue and white collar) peaked through the widely supported strikes of mid-1979 and the campaign for the amnesty to those who had allegedly committed political crimes.[160] These advances not only resulted in relatively universal wage increases (real wages grew 7.5% per year average in 1976-80) but also in the strong expansion of public sector expenditures in social welfare.[161] The process of political 'distension' began to be known then as 'opening'.[162]

Not only in these respects did state policies then resemble those of the 'national-developmentalist' period. The expansion of the bases of support for the Brazilian process of capital accumulation, land rent and foreign interest-bearing capital inflows, was also manifesting itself in a change in foreign policy, as had been the case when Quadros and Goular decided to pursue their 'independent' foreign policy. In 1977, Brazil unilaterally repudiated the military pact it had had with the USA since the 1940s over a disagreement about its nuclear programme. Following its traditional stance on the topic, the US government opposed Brazil's acquisition of nuclear technology and blocked the sale of equipment by US suppliers. The Brazilian government complained with no avail. In the end, it acquired the necessary equipment and know-how from German companies and, in this way, allegedly reaffirmed its political 'independence' and its commitment to transform the national economy into a global industrial power.[163] As with Vargas, Kubistchek, Quadros and Goulart, this move was an ideological form of realisation of the overall policy shift following the expansion of land rent (and its

[159] These independent trade unions were not related to the state-controlled ones or to those associated with the MDB. Supported by grassroots movements and sectors of the Catholic Church critical to the military regime, the core of this 'new unionism' was the Metalworkers Federation led by Luiz Inácio 'Lula' Da Silva. On the emergence of 'new unionism' and the increase in trade union activism during 1977-79, see Moreira Alves (1984: 84-94); Anglade (1985: 99-100); Skidmore (1988: 204-6, 212-5); Bethell and Castro (2008: 214-5).
[160] See Skidmore (1988: 217-9).
[161] See Anglade (1985: 123-4).
[162] See Skidmore (1988: 203); Bethell and Castro (2008: 212) on the moves to further political opening by the military in the late 1970s.
[163] See Skidmore (1988: 192-6)

complementary sources of extraordinary social wealth). Brazil was neither becoming a global industrial power nor gaining any extra international independence. Moreover, in the longer term, the nuclear programme proved to be largely an expensive failure.[164]

Despite the above-described substantial advances in the development of the domestic industrial sector, by the turn of the decade, the Brazilian process of capital accumulation would again start to enter a period of deep crisis. As the global economy fell into a recession, international commodity prices dropped further and the land rent available for appropriation in Brazil contracted at the same time that the net inflow of external credit decreased from equalling 10% of total profits in 1978 to less than 1.7% in 1979-80.[165] Nonetheless, the trajectory of the Brazilian economy from fast, but slowing and irregular, growth to an open crisis was not a straightforward process.

As many times before, the contraction of the main bases of support of the Brazilian economy needed to come about through an alteration of those policies through which their appropriation by industrial capital had been taken course. In March 1979, General João Baptista de Oliveira Figuereido succeeded Geisel as President, promising to continue the 'democratisation' process. Simonsen, Geisel's Finance Minister, became Minister of Planning, with extra powers to manage the economy. As he assumed full control over economic policy-making, Simonsen put forward a plan to 'cool down' the economy in order to combat the accelerating inflation (already 52.7% in 1979) and the ensuing balance-of-payments difficulties, both resulting from the negative impact the contraction of land-rent and the net interest-bearing capital inflows was having on public sector accounts and the financing of the current account deficit. Simonsen's package included typical orthodox measures: tight monetary policy, expenditure cuts, currency devaluation, reduction of export subsidies, and a modest liberalisation of import restrictions.[166] Together this set of policies would reduce the transference of contracting land rent and foreign credit inflows to industrial capital, and, consequently, would slow down its process of accumulation.

Simonsen's adjustment plan faced widespread opposition, notably among representatives of industrial capital. As in 1973, it was argued by many in the state and private sectors that Brazil should weather the stormy global environment through expansionary policies. In response to these claims, in August 1979, Simonsen left the

[164] See Abreu (2008a: 289) for some critical comments on the nuclear programme.
[165] See graph 2.13 in Chapter 2.
[166] See Coutinho and Gonzaga de Mello Belluzo (1982: 192-94); Batista (1992: 114-15).

Ministry of Planning and was replaced by Delfim Netto, the 'father' of the 1968-73 'economic miracle'.[167] The global context, however, was exactly the opposite of that prevailing after 1973: the amount of land rent was contracting and external loans were drying up rapidly. Yet, as in 1967, Delfim Netto claimed that inflation was caused by 'structural' factors, and proposed to fight it again with expansionist, rather than 'orthodox', policies. As soon as he assumed the reins of economic policy-making, Delfim launched the Third National Development Plan for the period 1980-85 which was more a vague expression of desire about growth prospects than an articulated and properly calibrated economic programme.[168] To reduce industrial costs, interest rates were cut sharply. Agrarian production was promoted through new lines of credit on favourable terms, in order to increase the supply and reduce the price of commodities. In response to a new upsurge in protests in the more dynamic branches of the manufacturing sector, real wages were allowed to increase again and the formula regulating their adjustment reformed to further protect them from price inflation. Domestic demand increased accordingly and GDP growth accelerated from 4.6% to 7.9% while industrial value-added growth jumped from 8.4% to 9.5% between 1978 and 1979.[169]

The bases for this growth, however, were getting increasingly weaker. Unlike, the previous 'shock', the 1979 'oil shock' was followed by an increase in global interest rates and the fall of international non-oil commodity prices, with the exception of sugar which would enjoy a short-lived boom. As international credit markets tightened, foreign loans dried up rapidly. By the end of the year, the situation had become unbearable, as foreign exchange reserves accumulated during 1976-78 had fallen by as much as 25% (US$ 2004 5.9 billions).[170] The space for expansionist policies shrank quickly. Delfim then announced his 'Christmas Package' which, despite the government's still developmentalist rhetoric, was much in line with IMF orthodox recommendations and Simonsen's much opposed programme. A maxi-devaluation was implemented while subsidies to exports and restrictions on imports were removed. A 30% tax on most primary goods exports replaced the combination of exchange rate

[167] See Coutinho and Gonzaga de Mello Belluzo (1982: 194-6); Dias Carneiro (1990: 308-9); Abreu (2008a: 386-7).
[168] In sharp contrast to its predecessors, the Third National Development Plan does not contain numbers and concrete forecasts. See Brazil (1979).
[169] See Anglade (1985: 102); Bacha (1986: 149-52); Zurron Ocio (1986: 16). See also graphs 4.2 and 4.10 in Chapter 4.
[170] See table C.31 in Appendix C.

overvaluation and import taxes as forms of land rent appropriation by the state. Moreover, the Law of Similarity, the symbol of the Brazilian ISI process, was eliminated altogether.[171] The land rent available for appropriation there was becoming increasingly insufficient to sustain the previous diversified scale of industrial production.

Through 1980, the government attempted a new bluff that would supposedly change the mood among private economic agents and speed up the economic recovery. Subsidised credit was extended to the industrial sector (for working capital) and to consumers again in a desperate attempt to increase aggregate supply and market-demand.[172] Growth picked up, especially in the industrial sector. The bases for this expansion were openly unsustainable. Part of the resources supporting these policies originated in land rent appropriated by state through its monopoly of the sugar trade, then enlarged as international sugar prices almost trebled that year.[173] Another portion was made, as before, of forced savings. Moreover, the government was again making extensive use of Central Bank foreign exchange reserves to finance the large current account deficit. Finally, newly imposed interest rate ceilings channelled financial resources onto the demand for durable-consumer goods and real stock assets, thus creating an unsustainable credit expansion.[174] Resources required for expansionist polices rapidly became insufficient. The contraction of the net inflow of interest-bearing capital continued as the retraction of medium- and long-term credits was roughly compensated for by a sharp increase in short-term loans.[175] Average wage growth in manufacturing came to a halt, becoming negative in some occupations and industries.[176] Unlike in 1979, industrial worker actions for wage increases found this time hard-line negotiators on the government side.[177] Moreover, large cuts in universal social welfare expenditures were implemented as the government was trying to balance the public sector accounts.[178]

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[171] See Coutinho and Gonzaga (1982: 202); Anglade (1985: 102-3).
[172] See Dias Carneiro (1987: 39).
[173] See Brandão and Carvalho (1991a: 249).
[174] See Coutinho and Gonzaga (1982: 212); Tyler (1986: 9-10); Dias Carneiro (1987: 39). This policy probably transferred to industrial capital a portion of the land rent appropriated, on a first instance, by landowners. This portion had grown larger due to the combined (and related) effects of the exchange rate devaluation and the 25% expansion of agrarian output.
[175] See Carneiro (2002: 122-6) for the shortening of Brazilian external debt maturity during 1979-82.
[176] See Zurron Ocio (1986: 8-11).
[177] See Skidmore (1988: 222-4); Anglade (1985: 104).
[178] See Anglade (1985: 124).

By the end of the year, Delfim's bluff was finally called. The economy was already in a recession and inflation out of control. Delfim had to implement an openly orthodox adjustment package. Interest rate ceilings in the domestic money market were abandoned and price controls were lifted, thus eliminating two forms of resource transference to industrial capital through the mediation of the state.[179] The exchange rate was devalued again to avoid it becoming overvalued, thus eliminating this form of direct appropriation of land rent by economic 'agents' other than landowners. Current expenditures, notably subsidies to the industrial sector, were reduced further, and there were drastic cuts in public sector investments.[180]

Some writers have argued that, by allegedly postponing the structural adjustment of the Brazilian economy to the end of the long period of low-cost oil, the NDP II aggravated the local impact of the global crisis which was beginning to unfold in the early 1980s without fulfilling its goal of producing structural change. Moreover, these authors claimed that the Plan left the economy massively indebted and thus particularly vulnerable to the second 'oil shock' and to the changes in the cost and conditions of refinancing its debts.[181] Other authors have contested this view, suggesting that the Plan largely achieved its goal of structurally transforming the local economy and could not be blamed for the externally caused early 1980s crisis.[182] Both positions, however, fail to capture the Plan's underlying specificity. The NDP II was not simply an ideologically informed economic policy option among other possibilities then available to the government. It was the normal course of development, in terms of economic policy, of the Brazilian process of capital accumulation as its main bases of support, land rent and foreign credit inflows, expanded sharply. In effect, as would become evident when these bases contracted during the 1980s, the specific characteristic of this process of capitalist development was not changed whatsoever throughout the implementation of the NDP II. Neither was the Plan simply a response to the increase in the price of oil, its ideological justification notwithstanding. Had oil been the only commodity whose price increased or Brazil not have access to low-cost external credits to complement the land rent, the military would have simply not had the resources to implement the Plan. The Brazilian economy was affected by the increase in the price of oil, and therefore of the

[179] See Bacha (1986: 154-6) on the sudden shift in monetary policy.
[180] See Anglade (1985: 105-6); Dias Carneiro (1987: 42-3).
[181] See e.g. Tyler (1986: 8); Malan and Bonelli (1983).
[182] See e.g. Barros de Castro and Souza (1985); Batista (1992).

land rent paid to petroleum producing countries, as much as those countries where industrial capital accumulates through the sale of goods in world markets (i.e. industrially advanced and East Asian countries) as the increases were, in most cases, passed onto industrial and individual consumers there. In this respect, the effect of the increase in the price of oil was neutral. During the period after the first 'oil shock', nevertheless, industrial capital in Brazil benefited, unlike those in these countries, from the increase in the prices of other commodities and, therefore, from the possibility to appropriate an enlarged agrarian and mining land rents.

Korea: From the Heavy and Chemical Industry Plan to the Comprehensive Stabilisation Programme (1973-1979)

By 1973, the global economy had already recovered. The USA, the largest market for Korean exports, was experiencing its second consecutive year of strong growth. External demand for Korean industrial goods was thus picking up again while the inflow of foreign loans was expanding.[183] With these extraordinary resources at hand, and the compensation already secured from the Japanese government as part of the 1965 'normalisation' treaty between both countries, in early 1973, the Park regime launched the Heavy and Chemical Industries (HCI) Plan. Given US rapprochement with China and North Korea's rapid advance in these sectors, the Korean government claimed that the HCI Plan was necessary for national security reasons. The Plan would finally make effective the goals for a self-sufficient and balanced economy aimed for in the First, Second and Third Five-year Plans. It was designed to promote the five following sectors: steel, non-ferrous metals, chemicals, machinery (including motor-vehicles), electronics and shipbuilding.[184]

The HCI Plan was not a novelty that developed the heavy and chemical industries from scratch. All sectors included in the HCI Plan had either been included in one of the previous five-year plans, or had received support under the many industry-specific promotion laws already passed, however ineffective they might have been hitherto.[185] Some sectors included in the HCI Plan (e.g. the machinery industry) had not grown much during the preceding period despite the substantial subsidies received.

[183] See Haggard (1994a: 35).
[184] See Lee (1991: 431-37); Haggard (1994b: 64); Stern et al. (1995: 21-2).
[185] See Lee (1991: 435-6); Stern et al. (1995: 17-8); Graham (2003: 28).

Other sectors (e.g. shipbuilding) had been growing slowly but consistently, although receiving relatively mild state support. As was seen above, the automotive industry had been growing weakly, despite the several state-sponsored attempts to develop it, while the electronics industry had been expanding rapidly since the mid-1960s, even if receiving limited state support apart from tax holidays and a 'trade union-free' environment in foreign-owned facilities.[186]

The key difference between the HCI Plan and the previous five-year plans or industry-specific promotion laws was not only the sheer magnitude of the financial support these sectors would receive during its implementation, but also that the HCI Plan constituted a detailed programme for the development of specific industries rather than a general framework of indicative goals and incentives to achieve them. The Plan included a list of plants and infrastructure projects to be constructed by both the private and public sectors. It also included a plan for the specific geographical location of each of the selected sectors. These were to be allocated to different regions of southern coast of the country.[187] In this way, transport costs for imported raw materials and exported products would be reduced.[188]

With the partial exception of the electronics industry, all sectors included in the HCI Plan had relatively high minimum efficient scales of production and lengthy maturity periods. Hence, in contrast to the previous and contemporary experiences in the textile and garments industries, the development of HCIs in Korea required the concentration of capital in such a degree that excluded the participation of small- and medium-sized companies. The constitution of large-scale individual capitals was both a precondition for, and a consequence of, the development of these industries. This was especially the case as they became increasingly oriented to compete in world markets, in most cases through the introduction of state-of-the-art technologies.[189]

In early 1970s Korea, the fast concentration of capital, necessary to develop the HCIs, could have not been achieved simply through the workings of market

[186] See Stern et al. (1995: 18-21). See Jonsson (1995: 71-7) for the pre-1973 development of the shipbuilding industry. As a response to the commercial success enjoyed by the Korea Shipbuilding Engineering Company (KSEC) during that period, Hyundai, one of the largest Korean conglomerates, began planning the construction of its shipyards.
[187] See Lee (1991: 431-34, 436-37).
[188] Some authors (see e.g. Stern et al., 1995: 27-8) offer a different reason for the southern location of the industrial projects, relating it to the distance from North Korea. This was more attuned with the ideological justification of the Plan. Though this factor might have been important, the key question, however, is whether or not the heavy industry could have been successfully developed if located far from the coastal area.
[189] See Haggard (1994b: 64-5).

competition. On the contrary, the emergence of Korean industrial capital as a producer of heavy and chemical goods for world markets required the intervention of the state, directing resources to the 'selected' sectors and 'coordinating' their growth and development. In other words, the autonomous (market-led) regulation of the global process of capital accumulation came about through the action of the Korean state. In some of the sectors included in the HCI Plan, such as steel, aluminium and petrochemicals, the minimum efficient scale was unreachable for privately-owned Korean firms, even with the massive support of the state. For instance, while the initial capital invested by Hyundai in its state-of-the-art shipbuilding yards amounted US$ 900 million, POSCO's capital investments in its first plant at Pohang reached US$ 4000 million when fully finished in 1985.[190] In those cases, the Korean state concentrated industrial capital under its ownership. Moreover, these sectors would also become suppliers of key raw materials for downstream 'favoured' industries, thus contributing to their development and international competitiveness through the provision of low priced inputs. This condition also made them unattractive for private capital.[191]

Different types of policies were implemented to make the HCI Plan operational, including tax, trade, credit, and regulatory measures. Industry specific promotion laws, some already in place, and the Tax Exemption and Reduction Control Law regulated the implementation of these policies. Furthermore, apart from its direct involvement in the metal and petrochemical industries, the Korean state also concentrated on the provision of social overhead capital. The latter not only included the construction of roads, railways and ports, but also of the industrial estates where the different sectors located.[192]

The tax system provided incentives for firms in these sectors, subject to certain conditions specified in the promotional laws. The major incentives were tax holidays, special arrangements for the depreciation of fixed capitals and temporary investment tax credits lasting for a period of five years. Effective tax rates on corporate profits in promoted sectors were significantly below those applied to other sectors of the economy during the entire period when the HCI Plan was implemented.[193] Trade policy during the 1970s limited imports of foreign goods competing with domestic productions in the promoted industries, partly reversing the liberalising trend initiated through the mid-

[190] See Amsden (1989: 269).
[191] See Lee (1991: 449).
[192] See Kwack (1984); World Bank (1987: 39-44); Lee (1991: 443-9); Stern et al. (1995: 40-1).
[193] See Kwack (1984: 22-9); Stern et al. (1995: 63-5).

1960s. Exporters of labour-intensive goods, nevertheless, continued largely importing inputs and equipment duty free.[194] Policies regulating domestic and foreign investments were also streamlined. In sharp contrast to the contemporary Brazilian experience, the Korean state began to control the entrance of private firms into most branches of industrial production. In this way, it attempted to limit 'unnecessary' competition leading individual firms to produce below the minimum efficient scales.[195] Moreover, the government also reinforced entry restrictions to foreign enterprises in the industrial sector. Joint ventures became more acceptable than wholly-owned foreign firms. Domestic firms would be given priority in export markets and technology-intensive projects.[196] Nevertheless, in the electronics industry, largely located in the Masan EPZ, 100% foreign ownership was permitted and the already generous incentives given to attract FDI in the sector maintained. [197]

Finally, the most powerful tool the government used to carry out its industrial policy was the allocation of investment funds. The government was directly involved in allocating financial resources not only to different manufacturing industries but also to individual investment projects. State-owned 'commercial' banks were directed to lend resources to investment projects in the HCIs. These loans became to be known as 'policy loans' and were offered at preferentially low interest rates, often lower than the inflation rate. As industrial policy was implemented, 'policy loans' expanded to take on an increasingly large share of domestic credit. In the early 1970s, the share of all policy loans in domestic credit to the private sector was already nearly one-half. By the late 1970s and early 1980s the policy loans expanded further, accounting for 60% of all domestic credit to the private sector.[198] During this period, the share of bank loans given to HCIs increased from 22.6% in 1970 to 32.1% in 1980 while the share received by light industries fell from 23.5% in 1970 to 21.7% to in 1980.[199] To contribute to the finance numerous, large scale investment projects in the HCIs, the National Investment Fund was established in 1974, 'mobilising' public sector employee's pension funds.[200]

As many times before, the restructuring of labour market institutions was also a crucial part of state intervention. Labour and social policies were tightened throughout

[194] See Kwack (1984: 29-33); Stern et al. (1995: 65).
[195] See Chang (1993: 139-40).
[196] See Collins and Park (1989: 267).
[197] See Hong (1997: 83); Mathews and Cho (2000: 112-3).
[198] See Kwack (1984: 33-9); Stern et al. (1995: 66-7).
[199] See Cho and Kim (1995: 44-5).
[200] See Collins and Park (1989: 194-5); Lee (1991: 443-7).

the 1970s to streamline the reproduction of the 'dual' structure of the labour market. Labour and union rights were reduced in 1973. This was achieved through the *de facto* elimination of industry-wide association and subsequent concentration of all negotiations at the company level, by limiting further the right to bargain collectively, and by expanding the scope of the public sector where unionisation was forbidden.[201] Furthermore, despite launching several initiatives, state expenditures on universal social services remained, with the exception of education, negligible during the 1970s, as these were left to the private sector. The Medical Insurance Program, based on shared contributions, was created in 1976 but was made compulsory only for large firms.[202] The National Pension Law was passed in 1973 to create the National Pension Fund (NPF) but its implementation was suspended indefinitely after the business sector manifested its opposition and the difficulties created by the first 'oil shock' were beginning to hurt the economy.[203] By letting the market allocate most resources spent on healthcare, housing, social security and, to lesser extent, education, Korean social capital avoided the universal, undifferentiated reproduction of the labour-force. It minimised, in this way, the portion of national output spent in its reproduction. The massive surplus population of peasant origin, and the relatively simple jobs it was put to perform, allowed the payment of labour-power below its value, notably in the small-scale unskilled labour-intensive, export industries.[204] On the other hand, the portion of the labour-force working in large-scale heavy and durable-consumer goods industries tended to perform more skilful jobs and therefore had relatively more favourable working and payment arrangements.

The policy shift undertaken through the 1970s HCI Plan required the large and concerted mobilisation of limited financial resources and the tight control over the local labour-force. The implementation of this shift thus required the increased centralisation of political power and the repression of the Korean working-class. Between 1973 and 1975, the already dictatorial Yushin Constitution was reinforced through the promulgation of a series of 'emergency' decrees that increased political closure.[205] Furthermore, the execution of the HCI Plan also involved the reorganisation of state

[201] See Choi (1981: 91); Shin (2003: 98-101). See also discussion in Chapter 4.
[202] See Shin (2003: 88-98). A Medical Assistant program was also launched to assist (modestly) those unable to pay for the cost of health care.
[203] The NPF would only be established in 1988.
[204] The official urban unemployment rate in the first half of the 1970s averaged close to 8% while 70% of employees were on temporary contracts.
[205] See Hart-Landsberg (1993: 197).

institutions related to economic policy-making. The HCI Committee and the Blue House (the Presidential Secretariat) were placed in charge of the Plan's implementation and evaluation, partly replacing the EPB and MoCI.[206]

With the world economy growing and international liquidity expanding, the Korean economy boomed during 1973, enjoying its fastest growth of the entire post Second World War period. Exports increased by an astonishing 90% and real GDP grew 22% in per capita terms.[207] The implementation of the HCI Plan proceeded full speed. This boom, however, was relatively short-lived. In 1974, only one year into the Plan, the world economy entered a recession and Korean export growth slowed sharply. Furthermore, the sharp increase in the prices of raw materials also expanded the current account deficit and therefore accelerated the build-up of external debt, most of it of short-term maturity.[208]

Economic growth fell sharply in 1975 and average real wages in the industrial sector collapsed 9%. The fall was stronger for female and temporary workers in labour-intensive industries. Political opposition to the Park regime mounted. As during most of the 1970s, this mainly consisted of an upsurge of spontaneous and narrowly circumscribed protests by female workers in the garments industry, usually triggered by the non-payment of wages, and occasional demonstrations by university students and opposition politicians. As before, these were met in the only way the regime knew: further political repression. In May, the Park regime issued Emergency Decree No. 9, the most comprehensive of all, outlawing making any 'false' statements about or demonstrations against the President, the Yusin Constitution or the government. "As a result of this decree, it became illegal for any South Korean to call for democracy, object to any government act, or say or do anything that might defame or harm the 'welfare' of South Korea while abroad or with a foreigner while in South Korea. Given the scope of Emergency Decree No. 9, Park had no need for further decrees."[209] Persecution of, and violence against, students, workers, and political opponents continued; not even members of the National Assembly were spared from these assaults.[210]

[206] See Haggard (1994: 34); Clifford (1998: 104-5); Graham (2003: 29).
[207] See graphs 4.2 and 4.5 and table A4.1 in Chapter 4.
[208] See Collins and Park (1989: 195-6) for the emergence of balance-of-payments problems.
[209] See Hart-Landsberg (1993: 197-8); Shin (2003: 98-101).
[210] See Oh (1975).

In 1975, with the world economy in deep recession and the local economy growing 'only' 5.4% in per capita terms (one-fourth of the 1973 record and well below what had been planned), even the HCI Plan was revised downwards only two years after its launch.[211] The drafting of the Fourth Five-Year Plan for the period 1977-1981 scaled down the scope of some of the projects included in the HCI Plan.[212] Gross fixed capital formation fell during 1975 while inflation spiked at 25%, partly as a result of an increase in the public sector deficit and partly as a result of higher international commodity prices.[213]

By 1976, however, the performance of the global, crucially the US, economy began to recover strongly and the Korean process of capital accumulation entered into a new period of fast growth that would last until the second half of 1979. External demand for Korean exports expanded rapidly with global recovery, while foreign loans became, again, available in large amounts, as the so-called 'petrodollars' were being recycled through the European and US commercial banking systems. Production and capital formation thus accelerated rapidly in the industrial sector. In addition, the Middle East construction boom that followed the increase in the price of oil boosted the demand for construction services.[214] Demand for labour-power expanded accordingly and real average wages in the industrial sector grew 15% per year during 1976-79.[215] Moreover, in sharp contrast to the trend experienced in most industrially advanced countries, from 1976 onwards wages paid to unskilled and semi-skilled labourers began to grow faster than those paid to their more skilled colleagues, partly reversing the previous trend.[216] As exports expanded 4.5 times between 1973 and 1979, the current account deficit reduced sharply and turned positive, for the first time since Independence, in 1977, thanks to the massive export of construction services to the Middle East. Though the textile, clothing, footwear and plywood industries still remained central to the Korean economy, accounting together for 21.2%, 34% and 34% of manufacturing value-added, employment and exports, respectively, the unforeseen spectacular growth came from the side of those sectors included in the HCI Plan. Value-

[211] See graphs 4.2 and 4.5 in Chapter 4.
[212] See Lee (1991: 434-4).
[213] See tables C.1 and C.39 in Appendix C. See also Collins (1994: 237-8); Cooper (1994: 119); Chung (2007: 159).
[214] See Park (1986: 1030).
[215] See graph 4.10 in Chapter 4.
[216] See table A.14 in Chapter 4. For the US experience, see Acemoglu (2002).

added, employment and exports in the heavy, chemical and electronics industries expanded 8, 5 and 25 times, respectively, throughout the 1970s.[217]

The degree of diversification of Korean industrial productions and exports emerging through the 1970s was remarkable, even when compared with the experiences of other 'Asian Tigers', Taiwan included.[218] Nevertheless, despite differences, the industrial branches growing the most and carrying out the deepening of the Korean manufacturing base, many of them included in the HCI Plan, shared one specific characteristic. All required the coordinated mobilisation of large masses of semi-skilled labour-power to work as an appendage of automated and computerised machinery systems or in manual assembly operations. The Korean economy had access to a large surplus population that not only commanded very low wages by international standards but also was highly disciplined, used to endure harsh working conditions during long hours and easily trainable, especially after the strict two-year long military conscription served by all males.[219] The programme of public and private Vocational Training introduced in the late 1960s was massively expanded during the 1970s to provide the local workforce with the basic skills necessary to perform the emerging industrial activities. Firms were forced either to provide in-house training to new workers or to pay a levy to fund publicly-run institutes. A total of 815,000 workers were trained during the Third and Fourth Year Plans for the periods of 1972-76 and 1977-81, respectively.[220] Moreover, the extension of the state promoted and funded Saemaul 'movement' (see above) into the industrial sector was used further to indoctrinate and discipline the enlarging industrial labour-force. The programme's emulation of traditional values of paternal piety, loyalty, self-sufficiency and nationalism helped enhance the already largely militaristic and highly hierarchical environment within private and public large-scale industrial firms.[221]

The Korean electronics industry, the most dynamic of the sectors promoted during the 1970s, consisted of three sub-sectors: components and parts, consumer electronics and industrial electronics. The first two sub-sectors were at that point unskilled labour-intensive, characterised by the manual assembly and packaging of

[217] On the performance of the Korean industrial sector during the implementation of the HCI, see Michell (1988: 36, 41); Van Liemt (1988: 119); Stern et al. (1995: 28-30, 69-70). See also Haggard (1994b: 49-50) for a summary of economic indicators during these years.
[218] See Schive (1990).
[219] See Koo (2001: 47).
[220] See Shin (2003: 104).
[221] See Bello and Rosenfeld (1992: 28-9, 32-3).

integrated circuits and other semiconductor devices, and the manual assembly of radio and TV sets. Almost all inputs and equipment used in these sectors were imported. Foreign capital participation in the industry was relatively important, either in the form of full control of production facilities, joint-ventures or under OEM arrangements by which local firms were subcontracted to perform simple assembly operations. The production of electrical machinery, most of which was telephones and calculators, remained relatively underdeveloped in Korea during the 1970s, constituting only 6% of the sector's output, despite the support received by the state.[222] Regardless of the nationality of individual private capital and the type of business model, Korean international competitiveness in this sector was based exclusively on the cheapness and discipline-driven high productivity of its labour-force. This was particularly the case in the components and consumer electronics sectors where badly-paid young female workers, most of them living in on-site accommodation, constituted the bulk of the workforce.[223] As noted before, industrial capital managed to use gender-based discrimination, deeply ingrained in the Korean society, to segment the domestic labour market and keep female worker wages at around 45% of those earned by their male counterparts. This was, together with Japan, the lowest proportion in the world.[224]

The developments of the global steel industry, the second most dynamic sector during the 1970s, were already described in Chapter 3. It was shown that Korea's capacity to jump into world leadership in steel manufacturing throughout the 1970s and 1980s resulted from three key factors: the simplification of labour processes ensuing from the continuous advances in equipment computerisation and automation; the increase in the cost of the Japanese labour-force as a result of its own process of industrial 'upgrading' (requiring an improvement in worker skills and the shortening of the working-day); and the local availability of large pools of labour-power cheaper than the Japanese and with relatively similar productive attributes of discipline, subordination and endurance. It was also shown above that all complex equipment, plant design and key raw materials used in the Korean steel industry during this period were imported, mainly from Japan and Western Europe. Furthermore, it was shown that, unlike in the electronics industry, where labour-intensive techniques prevailed, POSCO, Korea's single large-scale integrated steel producer, used close to state-of-the-

[222] See Michell (1988: 138-48) on the long-term evolution of the Korean electronics industry.
[223] See discussion in Chapter 3.
[224] See Amsden (1989: 203-4) and tables A4.13, A4.14 and A4.15 in Chapter 4.

art technology and the same amount of capital per worker as most of its Japanese competitors. POSCO compensated its lower level of labour productivity, largely due to the lower experience of its workforce, with significantly lower wages.

The manifestation of the NIDL in the structure and dynamics of the global shipbuilding industry also impacted upon its development in Korea. This was the third most rapidly growing sector during the 'big push' of 1970s. Thanks to earlier technological developments, crucially the replacement of riveting with welding for joining the steel sheets during WWII and the improved mechanisation of materials handling introduced throughout the 1960s, the industry was then increasingly moving into the adoption of 'block construction' production methods (i.e. the assembly of prefabricated parts).[225] These production and organisational techniques, which had already contributed to the transformation of the Japanese shipbuilding industry into the largest and most competitive in global markets of large carriers and tankers, resulted in the simplification of manual worker activities and made possible the spatial separation of different parts of the production process. As noted, the characteristics of the Korean industrial labour-force were particularly suitable for this type of large-scale industrial projects requiring the coordinated mobilisation of great numbers of semi-skilled workers. And, though significantly less productive than the Japanese, the Korean labour-force in the sector was, on average, paid one-tenth of the former's wages. Furthermore, Korean shipbuilders also benefited, from the mid-1970s, from the provision by state-owned POSCO of steel at below international market prices.[226] Both circumstances were of considerable importance as labour and steel each constituted one-third of the total cost of the ships being constructed in Korea. Production equipment and know-how, skill-intensive parts and, crucially, dockyard and ship designs were sourced abroad; in Japan the first three items, in Europe the last two.[227] Korean firms did not have at the time the facilities or the labour-force necessary to produce them locally at internationally competitive prices.[228] Hence, they specialised in the production of ships at the lower end of the market, bulk carriers and oil tankers. By the end of the 1970s, the Korean shipbuilding industry became the second largest in terms of orders received by

[225] See Jonsson (1995: 52, 59).
[226] See Auty (1991: 24-5) on the source of Korean shipbuilder's competitiveness.
[227] See Amsden (1989: 276-77); Jonsson (1995: 77-80). Engines imported from Japan alone accounted for 15% of production costs. See Jonsson (1995: 52).
[228] See Amsden (1989: 274-79); Jonsson (1995: 103-9) on the availability of skilled personnel in Korean shipbuilding industry.

tonnage.[229] A decade later, still thanks to its low wage costs, but then also to the much increased labour productivity, the industry would not only consolidate as a major international player in the lower end of the market but would also produce relatively high value-added ships.[230] Nevertheless, it would only be in the 2000s, three decades after entering the global scene, that Korean shipyards would became world leaders and internationally competitive in some high-end products like liquefied petroleum gas and natural gas tankers.[231]

Exports of construction services to the Middle East were concentrated in projects requiring relatively basic engineering work and large mobilisations of cheap and disciplined labour-power, such as roads and residential buildings. Indeed, Korean firms were the only ones of those taking part in the Middle East 'construction boom' to use workers from their country of origin. Moreover, they frequently needed to establish commercial alliances with foreign partners to acquire the technologies and organisational/technical know-how necessary to undertake their activities.[232] Still, between 1976 and 1979, Korean firms signed contracts for a yearly average of US$ 10,800 million at 2004 prices. More than 100,000 Korean workers were employed in Middle East construction in 1979. The number kept increasing to reach 172,000 in 1982 and began to slowly decrease thereafter to 98,000 in 1985. From then onwards, the numbers diminished as the Middle East 'construction boom' vanished and Korean firms began to contract lower wage workers from countries in Southeast Asia.[233]

However, not all the industries promoted through the HCI Plan enjoyed the same level of success during the 1970s or thereafter. Some sectors and projects did not yield positive outcomes or did so only in the very long run. In general terms, the unsuccessful sectors were those intensive in raw materials and energy, such as the petrochemical and aluminium industries, and those requiring a highly skilled workforce, such as heavy machinery production. The fertilizers industry was a prime example of over-ambitious investments in a resource-intensive sector. As was the case in the rest of the HCIs,

[229] See Jonsson (1995: 63, 94).
[230] See Amsden (1989: 283-84) for the evolution of labour productivity in Hyundai dockyards. According to Amsden (1989: 288-89) in the late 1970s, the proportion of engineers and technicians among the total workforce employed in the Korean shipbuilding industry was half that in its Japanese counterpart. Moreover, by the mid-1980s, Hyundai, Korea's largest shipbuilder, still lacked the capacity to design ships and manufacture engines competitively (by world market norms). Hence, it still purchased ship and engine designs in Europe. See Amsden (1989: 279-80).
[231] See Jonsson (1995: 85-7, 95); Upton and Kim (2009).
[232] See Kim (1988); Mardon (1990: 126).
[233] See Kim (1988: 227).

investments in productive capacity far exceeded domestic demand as they were meant to produce competitively priced goods for export markets. Yet, based on naphtha instead of natural gas, the competitiveness of the Korean fertilizer industry was highly vulnerable to oil price changes. For instance, in 1980, after the second 'oil shock', production costs of Korean urea were five times higher than US and Canadian costs, and ten times higher than Middle Eastern costs. Consequently, substantial productive capacity had to be scrapped.[234] Korean firms not only had no access to below international prices raw materials, as many of its competitors in Mexico and the Middle East, but also had to bear higher transport costs. These disadvantages could not be compensated for with a cheaper labour-force and lower plant construction costs.[235] This branch of Korean industry thus remained marginal until feedstock prices fell substantially in the late 1980s.[236] Being highly intensive in electricity and bauxite, none of which was available at low cost in Korea, the aluminium industry followed a relatively similar fate. Hence, the largely state-owned Aluminium of Korea Company (AKC), unlike steel producer POSCO, never managed to compete successfully in the global market against producers with access to both key inputs at below international prices, such as those located in Brazil. After ACK's sale to Hyundai in the early 1990s, the company finally decided to concentrate in processing imported aluminium rather than smelting it.[237] Investments in the heavy machinery industry, particularly in the Changwon complex, also sharply overestimated Korean and world demand for electrical generators and equipment for heavy industry, and failed, in general, to produce competitively priced products.[238] In effect, unlike process, or continuous flow, industries like steel and chemicals, where the production is machine-paced and technology embodied mainly in the equipment, machinery production is skill and craft intensive, with much of the know-how being tacit, embodied in the engineers and technicians that constitute the workforce.[239] These types of industrial workers were not

[234] See World Bank (1987: 46).
[235] Feedstock constituted then between half and two thirds of production costs, depending on the product and the cost of oil/gas, while production process requires very low amount of direct labour. See World Bank (1984a).
[236] See Auty (1991: 26).
[237] See Stern et al. (1995: 140-2).
[238] See World Bank (1987: 46); Stern et al. (1995: 112-6). The poor performance of the heavy machinery industry continued after the complex was nationalised in 1980 and brought under control of the Korea Electric Power Company. See Clifford (1998: 186-8) who notices the contrast with state-owned POSCO though he attributes the difference to management practices.
[239] See World Bank (1984b: 69).

yet available in Korea in large amounts and low prices. Indeed, they frequently needed to be attracted from abroad.

Hence, the transformation of the Korean industry throughout the 1970s was not simply the result of state planning or design. That, in some cases, state intervention reinforced already existing private ventures, and that the different branches of the HCI sectors exhibited dissimilar performances and varying degrees of commercial success despite being promoted in the same form, confirms at least two things. First, that the Korean state did not invent the local HCIs from scratch, as already mentioned. Secondly, that state support was neither the single nor the most important reason behind the impressive process of industrial development in Korea during the 1970s. It was a necessary but not sufficient condition, as several authors claim.[240] In effect, all sectors included in the HCI Plan had already received state support without yielding significantly positive results. What, then, was the basis of the process of valorisation of industrial capitals invested in the branches of production in Korea during the 1970s? This, it was argued above, was the availability of large pools of internationally cheap and highly disciplined labour-power, whose productivity was being significantly enhanced through the use of the increasingly computerised and automated equipment available in global markets. Had Korea not had access to that type of labour-power or had the technological conditions been different, as they had been during the previous decades, the HCI Plan would have not been as successful as it was, if at all. Korean industrial capitalists would have, most likely, not been as quiescent with state's policies, as they allegedly were.

Korean state actions, then, were a form of realising and mediating the global unity of the process of capital accumulation through the NIDL and the concomitant determination of Korean capital as producer of several heavy industrial and electronics goods for global markets. In other words, the self-regulation of the global process of capital accumulation came about through the intervention of the Korean state, promoting the local development of those sectors. Furthermore, that most mid-sized developing countries, Brazil included, were then promoting the expansion of the heavy and chemical industries shows that geopolitical considerations played no specific part (other than shaping its ideological forms of realisation) in the successful transformation

[240] See e.g. Chang (1993); Amsden (1989). Even if the Korean state had planned every single aspect of the country's process of industrial deepening during this period, it would have been responding or reacting to changes and signals occurring in world markets. That, however, was far from being the case.

of those industrial sectors in Korea. Effectively, with the exception of the steel industry, the rest of the sectors promoted during the 1970s were not directly related to the theme of national security and the production of weapons.

By the end of the decade, the structure of the Korean industrial sector was radically transformed. The participation of the heavy, chemical and electronics industries in manufacturing value-added, employment and exports jumped from 45%, 24% and 12% in 1970 to 56%, 51% and 33% in 1980, respectively.[241] While these industries grew, large-scale individual capitals, both private and publicly owned, also emerged. The concentration of industrial capital thus proceeded apace. The *chaebol*, the large-scale privately-owned conglomerates, became increasingly dominant actors in the Korean economy throughout the 1970s. For instance, the combined sales of the ten largest *chaebol* increased from 15% of Gross National Product in 1974 to 48% in 1980. The participation of the twenty largest *chaebol* in manufacturing sector sales increased from 24.6% in 1974 to 29.3% in 1977 and 36.6% in 1982. The implementation of the HCI Plan had indeed been a key part of this transformation.[242]

Nevertheless, during the 1970s the textile and garment industries remained together the largest employers and exporters in the manufacturing sector despite the relatively low level of state support received. The situation of the sector, however, was not entirely promising. Korean textile firms in the spinning, weaving and knitting sectors were losing grounds in world markets, as new technological improvements in machinery automation were reducing the advantage of having access to cheap and disciplined labour-power. Moreover, in the garments industry, they were facing increasing levels of protectionism in OECD countries and the emergence of lower wage competitors in Southeast Asia.[243]

In 1978, the Korean economy was at its peak. Pulled by a strong export performance, it was undergoing its third consecutive year of 15% per capita growth. At that moment, however, its supporting bases were beginning to crumble. The resources to carry on with the HCI Plan were starting to falter as the net inflow of foreign loans, a key source of funds for capital formation, was one-half of those entering the economy during 1977. By the end of the year, Deputy Prime Minister Nam Duck Woo, one of the economic policy leaders during the implementation of the HCI Plan, was replaced by

[241] See Van Liemt (1988: 119); Michell (1988: 36, 41). See also Amsden (1989: 58).
[242] See Amsden (1989: 116-24) for different indicators of the evolution of market concentration.
[243] See World Bank (1984: 60-3); World Bank (1987: 148-55).

orthodox economist Shin Hyon Hwak of the EPB as a result of rift between those branches of the government favouring a review of industrial policy and macroeconomic management, and those supporting the continuation of the 'big push' towards industrial deepening. Under the new economic policy leadership, the government embarked on the planning of a programme to restructure the economy, even if that meant to slow down the pace of growth. The new economic strategy was to be focused on the reduction of the rate of inflation, most of which had been caused by the rapid expansion of money supply related to the financing of the HCI Plan.[244]

For that purpose, in early 1979, the Comprehensive Stabilisation Programme (CSP) was launched three months before the second 'oil shock' rocked the global economy. The CSP called for a partial redirection of financial resources from HCIs to less favoured sectors such as light manufacturing industries where equipment was becoming out-dated. There was also a reduction in the fiscal deficit and the related growth of money supply.[245] The second 'oil shock', the following sharp increase in global interest rates, and the concomitant deceleration of the international economy radically changed the parameters. The rise in the international cost of credit and the price of oil resulted in the increase of Korea's import bill and of the cost of financing the enlarged current account deficit. With fewer resources to sustain the latter, the Korean currency was sharply devalued while domestic interest rates were pushed up. Imports then fell and gross fixed capital formation dropped by 12% and 6% in 1980 and 1981, respectively. Economic growth thus became markedly negative while real wages fell by 6.7% and 2.1% in 1980 and 1981, respectively.[246]

As the economy went into a recession, opposition to Park's authoritarian grip re-emerged and grew stronger. In the National Assembly elections held in December 1978, the NDP, the main opposition party, won, for the first time since 1960, the majority of contested seats. The Park government, nevertheless, was able to keep control of the Assembly through the direct appointments it was entitled to make under the Yusin Constitution.[247] In mid-1979, labour and student unrest mounted once more. The slow increase in militancy that had been accompanying the tightening of the labour market and the corresponding improvements in labour's bargaining power through the expansion of the 1970s erupted openly as employment and wage growth came to a halt,

[244] See Haggard (1994b: 59-63); Clifford (1998: 133-5).
[245] See Nam (1991: 207-14); Haggard (1994b: 63-4); Stern et al. (1995: 85-6).
[246] See Nam (1991: 214-5, 220); Clifford (1998: 174-5).
[247] See Haggard (1994b: 62).

this time also including 'core' male workers. The regime responded clumsily by jailing Kim Young-sam, NDP's new leader, accusing him of 'instigating against the nation'.[248] Instead of declining, popular discontent mounted further, notably in the industrial city of Pusan, Kim's place of origin, where thousands of students and workers, demanding Park's resignation, clashed with police forces. The government declared martial law in Pusan to no avail. It then planned to send the military in large numbers. Park was shot dead by the head of the KCIA on October 26th, before he could issue the order to the troops. At his trial, the KCIA chief claimed that he acted to avoid a major bloodbath.[249]

At the turn of decade, the Korea economy was, as it had been at its beginning, in a deep economic and political crisis. Was this a consequence of a 'policy mistake', embodied in the HCI Plan, that reintroduced a development strategy based on ISI which not only contrasted to the EOI model of the second half of the 1960s but also reversed much of the liberalisation reforms taking then place? Had the HCI Plan been overambitious and over-dimensioned, as some authors suggested? Could better and most efficient results in terms of industrial development have been achieved without extended government intervention, as critics claimed?[250] Though interesting, these are abstract questions. In the first place, the allegedly ISI policies implemented during the 1970s were not the abstract opposite of the policies implemented in the 1960s. They continued the structural transformation started then as a form of realising the global integration of capitalism through the international division of labour. They did so by incorporating HCIs into Korea's manufacturing base. Secondly, extensive state intervention was a condition for the development of HCIs in Korea. No internationally competitive HCI could have been rapidly developed there without wide-reaching state actions fostering the concentration of industrial capital and accelerating the maturation of learning processes.[251] Thirdly, the Korean government could have not known in advance which industries or sub-sectors would turn profitable in the long run. It did what most developing country states, notably the Brazilian, were doing during the

[248] Kim got accidentally involved in an industrial dispute over the closure of a wig factory when women workers who had opposed it mobilised at the NDP's headquarters to seek the attention of the opposition party after being evicted by force from the factory. NDP's offices were nevertheless brutally stormed by police forces even though the party did not oppose to the presence of workers there. One female worker died in the incident and several were injured. Kim was also accused of conspiring against national interests by making critical remarks about Park's regime to the *New York Times*.

[249] See Hart-Landsberg (1993: 212-13); Clifford (1998: 135-36); Koo (2001: 89-92); Haggard (1994b: 66-7).

[250] For these points, see e.g. World Bank (1987: 45-8).

[251] See Stern et al. (1995: 59-60, 186-7) for the same conclusion.

period: it promoted most, if not all, HCIs. As argued above, it had been promoting these industries unsuccessfully since the First Five-year Plan was launched in the early 1960s.[252] The only singularity of the Korean HCI Plan *vis-à-vis* those implemented elsewhere was that, as the Korean economy was already oriented towards the global markets, the state there promoted, in general, and against the advice of international cooperation agencies (e.g. the World Bank), the construction of industrial plants with the scale necessary to produce for world markets through the introduction of vanguard technology.[253] Nevertheless, POSCO's first steel plant was expanded twice until it reached the 'theoretical' minimum efficient scale and twice more until it reached the average Japanese steel mill capacity. It is doubtful that these expansions would have ever taken place had the first stages not been commercially viable. Moreover, the first ethylene cracker built in the Ulsan petrochemical complex was half the world-market-scale and it was only in the late 1970s that a plant of such size would be constructed in Yochun.[254] Conversely, as it will be seen below, industries where overcapacity existed would be streamlined subsequently.

End of chapter conclusions

During the 1970s, notably the period 1973-1979, the Brazilian and Korean economies underwent a process of high, though irregular, growth and rapid industrial 'deepening.' The latter was led, in both countries, by ambitious state programmes implemented to develop heavy and chemicals industries. After the first 'oil shock' manifested itself in the increase in the prices of raw materials and the global supply of credit, the Brazilian economy used the enlarged land rent and inflows of interest-bearing capital to fund the further development of the local process of import-substituting industrialisation. The Korean economy, on the contrary, used available financial resources to build-up a heavy industry which tended to have, unlike its Brazilian

[252] See Haggard (1994: 41-2). All national states attempt to do the same irrespective of the specificity of the process of capital accumulation they represents politically: they act as if no specific limitations to their normal development were present and aim at promoting the generality of the industrial sectors. The extreme neoliberal claim that Korea should have not promoted the HCIs and continued 'specialising' in light manufactures is, thus, an abstraction. Nation-states do not base their economic policies according to the theory of 'comparative advantages.' The international division of labour imposes itself through 'trial and error' actions of nation-states.
[253] See World Bank (1993: 128-30); Stern et al. (1995: 185). The direct competition with North Korea were state ownership of capital resulted in large-scale industrial facilities was probably also important.
[254] See Auty (1991: 26) on the experience of the Korean petrochemical sector.

counterpart, the scale necessary to introduce state-of-the-art technologies and compete successfully in global markets after a relatively short period of maturation under state protection and subsidisation. Unlike in Brazil, industrial capital had access in Korea to a workforce which was not only internationally cheap but also had the skills and characteristics that made it highly productive when combined with the increasingly automated equipment available in these sectors of industrial production (i.e. the attributes of the local labour-force matched the skills required by the emerging technological base).

These distinct characteristics resulted in two other essential differences between the ISI policies allegedly implemented in both countries during their 'big push' into HCIs. First, in contrast to the Brazilian experience, post-1970 'import-substitution' policies in Korea did not involve any transfer of resources from the primary sector to the rest of the economy. Related to this is, usually unnoticed, that the Korean HCI Plan was launched before the first 'oil shock' manifested itself in a new commodities boom and an expansion of global land rent, while the Brazilian NDP II was launched after that event. Secondly, the Korean 'import-substituting' effort during the 1970s did not directly affect light industry exports. Korean light manufacturers were not forced to purchase their inputs locally as was the case in Brazil.

Despite the common absence of democratically elected governments, political institutions also began to diverge throughout the 1970s, expressing the different underlying content of the Korean HCI Plan and the Brazilian NDP II. While the Brazilian 'big push' into heavy industry was accompanied by a process of political opening, the Korean came about through increased state repression and political closure. The former required across-the-board increases in real wages to expand the domestic markets in order to absorb the increased output and to reproduce normally an industrial workforce performing increasingly complex activities. The latter required the control over the evolution of wages paid to semiskilled and unskilled workers and their acquiescence over the worsening of working conditions (i.e. the lengthening of the working-day and the increase in industrial accidents).

By the turn of the decade, however, both economies were, despite their specific differences, heading for their most severe crisis of the post-war period. The second 'oil shock' was followed by the sharp contraction of global credit supply and the slowdown of international economic growth. This severely limited the amount financial resources available to developing country economies, such as Brazil and Korea, and resulted in

the contraction of the global demand for Korean productions and the fall of commodity prices and therefore of the Brazilian land rent.

Chapter 8

Brazil and Korea between the Early 1980s and the Early 1990s

Brazil: The 'lost' decade (1980-1992)

During the second half of the 1970s, the Brazilian process of capitalist development reproduced itself under enlarging but increasingly unstable bases. The land rent and the net inflow of interest-bearing capital expanded strongly but with spasmodic movements. The specific limitations of this form of capital accumulation became openly evident from 1979 onwards as these bases reduced and policy-makers attempted to avoid the inevitable crisis by moving forward. During most of the period between the early 1980s and the early 1990s, these bases collapsed almost completely. The clash of the Brazilian process of capital accumulation against its specific barrier, given by the magnitude of the land rent and complementary sources of extraordinary social wealth available for appropriation, became ever more obvious. This was thus a period of recurrent economic crises. The Brazilian economy came out of it significantly transformed, with its industrial sector in a critical state. The process of industrial 'deepening', largely accomplished during the 1970s, started to be reversed.

In 1981, as the short-lived 'sugar boom' began to recede, the sharp further contraction of the land rent available for appropriation was added to that of external credits. With these extraordinary sources of social wealth contracting, some policies that had mediated their appropriation by industrial capital were watered down while others were phased out altogether. As economic policies became increasingly contractive, the economy entered into a profound crisis. The military government finally abandoned any attempt to hide the real essence of the new economic orientation. Credit was restricted on all activities except those related to exports, energy and agriculture. Domestic interest rates were increased allegedly to 'induce' Brazilian firms to step-up their external borrowing activities. Public sector expenditures, especially investments by state enterprises, were curtailed while taxes were increased.[1] Industrial production, consequently, fell sharply and formal employment in the sector contracted. The move, however, was not enough to eliminate the public sector deficit, which kept being covered through increase in the money supply. Unable to catch up fully with the

[1] See Dias Carneiro and Modiano (1990: 325-7); Abreu (2008b: 399).

mounting inflation, real wages in the industrial sector fell slightly after having grown 8% annual average during 1976-80. In effect, when in 1982 the international crisis openly manifested itself in the sharp contraction of aggregate demand (and therefore of commodity prices) on a global scale and of credit supply to developing countries, the Brazilian economy was already in a profound recession.[2]

In the midst of the economic crisis, a new wave of social unrest and widespread opposition to the military regime emerged. Apart from trade union actions, the regime found a new, unforeseen source of active political opposition. Representatives of domestically-owned capital were this time not only initiating a new 'anti-statism' campaign, but were also openly calling for the restoration of democratic institutions of government. The contraction of the economy caused by the collapse of its main bases of support, however, could not yet be represented politically by a democratically elected government. There was no space for real wage increases and the enlargement of the domestic market. On the contrary, the economic crisis was rapidly manifesting itself in the opposite needs and the process of political 'opening' would come to a halt. Thanks to a creative move reforming yet again the political system and restoring its multi-party structure, the regime managed to win marginally legislative, federal and local elections held in November 1982. Nevertheless, the opposition, though no longer united under a single party banner, won in Brazil's industrial heartland, the states of Sao Paulo, Minas Gerais and Rio de Janeiro.[3]

The absolute retraction of the flow of foreign loan capital (which had begun in 1982 as the 'debt crisis' exploded) enlarged considerably during 1983-1984 when commercial banks stopped lending voluntarily to the Brazilian state. The mild recovery of the magnitude of land rent, following the weak increase in international commodity prices from 1983 onwards, was, in this context, not enough to offset the sharp reversion of the flow of interest-bearing capital. The contractive, orthodox 'stabilisation' program designed with the agreement of the IMF once the November 1982 elections had passed was thus prolonged through 1984.[4] With no extraordinary social wealth to transfer to industrial capital, subsidies granted through public banks and SOEs were cut further as

[2] See Anglade (1985: 103-6); Dias Carneiro (1987: 45); Frieden (1987: 116-9).
[3] See Anglade (1985: 120-6); Skidmore (1988: 232-6); Bethell and Castro (2008: 218-9) on the political developments during 1981-82.
[4] See Bacha (1986: 225-33); Dias Carneiro (1987: 45-7); Bresser Pereira (1984: 206-9) on the IMF-backed 'stabilisation' programme.

were public sector investments in infrastructure and capital formation.[5] The currency was sharply devalued, thus eliminating another form of direct transference of a portion of the land rent to industrial capital. Taxes were imposed on main raw material exports in order to reduce the effect of the devaluation on the domestic cost of primary goods and to allow the state to capture a portion of the contracting land rent. In this context, GDP fell by a further 7.1% (9.3% in per capita terms) in 1983.[6] Nevertheless, despite its 'orthodox' rhetoric, the public sector consolidated budget remained in deficit as revenues contracted and the increase in external debt servicing could not be compensated for by cuts in operational expenditures and capital investment, even if commercial debt was partly rescheduled under the umbrella of the agreement with the IMF.[7] Though a portion of the deficit was covered through borrowing in the domestic capital markets (i.e. replacing foreign with domestic debt), the rest of it was monetized and thus fuelled the inflation rate which reached 200% in 1984.[8] With the economy in deep recession, labour's bargaining power weakened and nominal wage increases remained unable to catch up with escalating price inflation. As real wages collapsed, poverty incidence increased rapidly. The 'debt crisis' manifested itself in an inflationary and social crisis.[9]

Nevertheless, by 1984, led by the sharp expansion of exports, notably of intermediate industrial goods benefiting from a renewed US demand, the Brazilian economy began to grow again.[10] This 'export-led' recovery, however, was not the result of a sustained increase in raw materials prices, and thus in the magnitude of the land rent, or, as it was argued elsewhere, of the improved efficiency of Brazilian industry after the 'structural' transformation allegedly undertaken through the NDP II.[11] Neither did the export-led recovery result simply from the compression of domestic 'absorption', as suggested by some authors.[12] It resulted largely from three other factors: the strong 'promotion' of export activities though the undervaluation of the currency and export subsidies; the sharp fall in real wages; and, the expansion of rents

[5] See Batista (1992: 124).
[6] See graph 4.2 in Chapter 4.
[7] See Bacha (1986: 225-33); Dias Carneiro and Modiano (1990: 330-7); Batista (1992: 120-4).
[8] See table C.1 in Appendix C. The increase in the monetary base jumped from 56.9% in 1980 to 243.8% in 1984. See Batista (1992: 107).
[9] See Valle Silva (2008).
[10] See Frieden (1987: 120-21); Batista (1992: 136).
[11] See e.g. Barros de Castro (1985); Dias Carneiro (1987: 57-8).
[12] See e.g. Carneiro (2002: 165-78).

of mining lands and water resources available for appropriation by industrial capital. Each of these factors is analysed immediately below.

First, in the early 1980s, around 80% of the Brazilian external debt was owed by the public sector as it had been contracted mainly by SOEs during the implementation of the NDP II or nationalised during the 'debt crisis.'[13] The state, however, did not directly generate enough foreign exchange resources to cover the enlarged external public debt. Even SOEs sold most of their output in the domestic markets. In order to service its external liabilities, therefore, the state had to buy foreign exchange from private sector sources. One part of this foreign exchange was bought using the primary budget surpluses generated after the 'adjustment' policies were introduced. Another portion was purchased using funds borrowed in the domestic capital market, namely, increasing the public sector debt in domestic currency. A third part was acquired through the (inflation boosting) method of expanding the monetary base.[14] The second method, unlike the third, artificially expanded the demand for foreign currency and thus pushed up its price in the domestic markets, without fuelling the inflation rate. The resulting undervaluation of the currency (30% average during 1983-86) 'subsidised', and thus helped increase, exports while it acted as a 'tax' on imports, restricting them further. In this form, the undervaluation of the exchange rate helped sustain the large current account surpluses necessary to pay for the external debts. Moreover, as mentioned before, export subsidies remained in effect for several sectors, crucially for the motor-vehicles and auto-parts industries.[15]

Secondly, sharp real wage falls also helped improve the profitability of industrial capital in general and softened the impact on their profits of the fiscal adjustment required to service the public sector external debt and to accommodate to the contraction of the land rent. In effect, after three years of economic crisis, mounting unemployment, a new systematic manipulation of the wage adjustment formula and tightened political control over trade union activities, in early 1984 both average wages in the industrial sector and economy-wide minimum wages were 36% below their late 1980 peak.[16] In other words, labour financed another portion of the government and

[13] Private debtors were insured by the Central Bank against the devaluation of the exchange rate. They paid their debts in local currency to the Central Bank which assumed responsibility for their external liabilities. See Bontempo (1988: 109-12); Carneiro (2002: 189-93).
[14] See Cardoso (1988); Bontempo (1988: 113-4); Carneiro (2002: 181-92). See table C.36 for the evolution of public sector debts outstanding.
[15] See discussion in Chapter 3.
[16] See Dias Carneiro and Modiano (1990: 332).

private sector external debts and facilitated private accumulation despite the withdrawal of the sources of extraordinary social wealth that had been sustaining it. The compression in domestic absorption was the other side of the expansion of exports based on a sharp wage compression.

Thirdly, by then, most of the massive investments in social overhead capital and industrial inputs production made under the NDP II, especially in energy generation and oil exploration were beginning to come on stream. New infrastructure was expanding the energy and mining land rents available for appropriation by industrial capital. Favourable natural conditions prevailing in Brazil to generate hydro-electricity implied that local production costs of electric energy were below international levels.[17] These extraordinary profits were transferred to industrial capital through the provision of electricity at prices below their international levels.[18] This transfer was of substantial importance for energy-intensive industries, such as metal making, aluminium production (where electricity accounts for one-third of total costs), cellulose and chemicals, which expanded their exports and were leading the recovery.[19] Furthermore, a portion of the land rent, and of foreign loans, which had been used to finance the NDP II and to expand the productive capacities of SOEs and the provision of social overhead capital, were now being transferred to industrial capital. Despite the administration's 'orthodox' rhetoric, real prices of SOE output fell continuously during the first half of the 1980s under the, rather 'heterodox', argument of being a way to control spiralling inflation. In other words, the implicit subsidy consisted of the previously invested capital.[20]

The economic recovery initiated throughout 1984, and the related improvements in labour market conditions as the year went by, brought about a new wave of demonstrations for the re-establishment of democratic political institutions. The military had been losing support consistently during the period of austerity and were thus relatively handicapped to represent politically the improvement in economic circumstances.[21] The recently formed Workers' Party (PT) related to the independent confederation of trade unions, Unified Workers' Central (CUT), started rallying for immediate, direct presidential elections. The main opposition parties eventually joined

[17] See Batista (1992: 73-5, 79-83).
[18] See Eletrobras (1987).
[19] See Batista (1992: 136-9).
[20] See Batista (1992: 144-5); Carneiro (2002: 185-6) on SOEs pricing strategies and their contribution to the export performance. See Villela (2000: 339) for the evolution of investments in infrastructure.
[21] See Frieden (1987: 120-21).

the campaign. Despite a succession of massive demonstrations and the widespread support it received, the campaign was finally defeated in the government-controlled Congress.[22]

Contrary to the wishes of the vast majority of the population, the transition to a democratic regime continued as a gradual and relatively smooth government-controlled process. To the surprise of many in the political establishment, perhaps not the military in command, Tancredo Neves, the moderate leader of the Party of the Brazilian Democratic Movement (MDB's successor) and ex-Justice Minister of Vargas's last presidency and ex-Prime Minister in Goulart's first parliamentary cabinet, allied with members of the ruling party, defeated the official party's candidate in an Electoral College dominated by representatives of the latter. In only a couple of months the official party faded away as the Democratic Social Party (the successor of the ARENA) split over the candidate for the presidency, and the military government did not do much to avoid the collapse of the regime.[23] Though a civilian would assume the presidency of Brazil for the first time since 1964, the direct election of the head of state and government would had to wait until 1990. President-elect Neves unexpectedly died before being sworn in. He was replaced by his deputy, Jose Sarney, a right-of-the-centre politician from the poverty-stricken northeast of the country who, six months before the election, had been a top member of party of the military. Sarney, nevertheless, introduced no changes and formed a government with the ministers already selected by Neves.[24]

When the Sarney government assumed the presidency in 1985, economic recovery was well underway and the expansion of exports was already resulting in the revitalisation of domestic demand for equipment and labour. This, in turn, was bringing about a substantial recovery of real wages, notably in the most dynamic parts of the manufacturing sector where, helped by the political opening, they grew by 13% and

[22] See Bethell and Castro (2008: 222-4).

[23] After a bitter internal campaign, Paulo Maluff, a civilian member of official party famous for the use of his personal wealth to buy supporters, managed to be named candidate of the party. This was strongly resisted by many within the party to the point that provoked its division. Aureliano Chavez, General Figueredo's civilian vice-president, and Sarney, an ex-president of ARENA/PSD, were the leaders of the group who formed the Liberal Front Party (LPF) and joined forces with mainstream opposition politicians in the Electoral College. See Skidmore (1988: 244-5); Bethell and Castro (2008: 224-6). Some authors (e.g. Moreira Alves, 1985) argued that this alliance hide a pact between the military and the opposition wherewith the formers' crimes would not be judged and its economic programme would not be modified, notably in relationships with the payment of Brazil external debts. Bethell and Castro (2008: 226) share the view of a political pact though do not comment on the 'economic' part of the deal. Only Lula's PT contested the legitimacy of Neves' election as President of Brazil.

[24] See Skidmore (1988: 256-60); Bethell and Castro (2008: 227); Bethell and Nicolau (2008: 233-4).

partly compensated the previous drop.[25] As the domestic markets revitalized, in particular the demand for durable-consumer goods, economic growth accelerated markedly. [26] The bases of this expansion were, however, weaker than ever before. With land rent and net interest-bearing capital inflows dropping to a new minimums, as global economic growth slowed sharply in 1985, fiscal austerity and tight credit policies continued through the beginning of the new government. The inflation rate, nevertheless, remained high and growing as an increasing part of the public sector deficit was being monetised. In a desperate effort to bring inflation down, in March prices were frozen by decree of the Minister of Finance, Francisco Dornelles. Though timid, this would be the first of a long series of unsuccessful experiments with 'heterodox' methods of inflation control.[27]

Inflation rates went down momentarily. As soon as prices were unfrozen in June, they sped up again. As would become common thereafter, the failure of the stabilisation programme cost the head of the Minister of Finance his job. In August, Dornelles was replaced by Dilson Funaro, an economist strongly identified with João Sayad, the Minister of Planning, who favoured a full-fledged 'heterodox' approach to the problem of inflation. Echoing Furtado's structuralist hopes in the early 1960s, this, it was claimed, would stop the inflationary process without a recession. By early 1986, economic policies began to recover some of their pre-debt-crisis shape when the accumulation of foreign exchange reserves (due to the expansion of exports and the reduction of international interest rates and oil prices) gave way to the implementation of the 'heterodox' Cruzado Plan in order to curb the spiralling inflation without contractive measures.[28] Under the then fashionable argument that inflation was 'inertial' (i.e. self-reproducing and perpetuating), prices were frozen at their February level in order to 'change' the general public's 'expectations' about their future evolution. However, while the price of foreign exchange and most SOE output were immediately frozen (the sole exception being electricity for industrial use which was thought to be grossly misaligned), wages received a previous boost of up to 23%. Domestic consumption thus increased sharply, notably of durable-consumer goods, while

[25] See graph 4.10 in Chapter 4.
[26] See Dias Carneiro (1987: 57-8).
[27] See Abreu (2008b: 404).
[28] See Modiano (1990: 357); Abreu (2008b: 404-5).

industrial production costs fell. Public investments in infrastructure and capital formation grew again for the first time in years.[29]

Economic growth continued strongly during the first half of 1986 while inflation decreased substantially.[30] The latter, however, was only due to the unsustainable price freeze. Controls on prices, especially of SOE output, were eliminated as soon as the November state and legislative elections had passed and the governing party, the PMDB, secured a landslide. Inflation rocketed as the government had not stopped monetizing deficits, further increased during the period of price freeze.[31] Moreover, the net outflow of interest-bearing capital remained significant, amounting, as in 1985, to more than 6% of all surpluses produced in the Brazilian economy.[32]

By the end of 1986, inflation was out of control again and the government had to prepare a fiscal adjustment package. The process of economic growth begun in 1984 was coming to a halt as a consequence of its own limited bases. Sharp increases in real wages (33% average in the industrial sector) occurred during 1984-86, partially fed by the adjustment mechanism included in the Cruzado Plan and allowed by the new political institutions, were undermining the international competitiveness of industrial exports and hurting the profitability of industrial capital in general.[33] In effect, after recovering in 1984, the rate of profit of industrial capital fell continuously thereafter.[34] In addition, harvest failure was reducing exports of agrarian goods,[35] and the agrarian land rent in general, while the sharp fall in the price of oil reduced the international cost of producing energy and, therefore, the rent springing from the monopoly of water resources (i.e. the advantage of having access to low-cost electricity). The trade surplus shrank sharply. Under these conditions, the Brazilian state could no longer service its massive external debt. In February 1987, the unilateral moratorium on interest payments

[29] See Modiano (1990: 358-9); Baer (1995: 152-4); Nazmi (1995: 492-3); Carneiro (2002: 150-1).
[30] See Baer (1995: 154-5); Abreu (2008b: 408-9).
[31] See Cardoso and Dornbusch (1987: 291); Modiano (1990: 362-64); Carneiro (2002: 195).
[32] See graphs 2.13 and 2.16 in Chapter 2.
[33] See graph 4.10 for real wage evolution. Note that this contrasts with most explanations that relate the fall in exports during 1986 to increases in domestic demand absorption or the overvaluation of the Cruzado resulting from the freeze of the exchange. This, however, was hardly the case. During 1986, the Cruzado was only less *undervalued* than in 1985. It was not overvalued at all. Between 1985 and 1986, the undervaluation of the exchange rate went down from 37% to 28%. Moreover, had domestic productions been internationally competitive, the increase in domestic absorption would have not become a problem for the expansion of overseas sales. Productive capacity would have simply increased as in Korea. Bonelli et al. (1992: 18-20) attribute the worsening in the export performance to the increase in domestic absorption and the decrease in international competitiveness due to the appreciation of the exchange rate, the increase in real wages and the fall in commodity prices.
[34] See graph 2.9 in Chapter 2.
[35] See Carneiro (2002: 173).

due to commercial banks was declared, further expressing the limits of the Brazilian process of capitalist development. Funaro, the Minister of Finance, was replaced by Luiz Carlos Bresser Pereira, one the intellectual fathers of the theory of 'inertial inflation'.[36]

In June 1987, Bresser Pereira launched yet another attempt to control inflation, the Plan for Economic Stabilisation, mixing 'orthodox' and 'heterodox' measures. This time, unlike in early 1986, the economy was already in a deep recession. Export growth was only slowly recovering while domestic demand was falling. The Bresser Plan was indeed a recessionary version of the Cruzado Plan. Wages and rents were frozen. The former not only did not receive any previous real increase, as was the case when the Cruzado Plan was launched, but they were subsequently adjusted by a specific indexation method that in practise fell behind the inflation rate. Consequently, real wages in the industrial sector fell 7% during 1987. Public services and state-controlled prices were frozen for a period of three months after being realigned allegedly to avoid the residual inflationary pressures that had supposedly occurred during the Cruzado Plan. Moreover, unlike during the latter, public sector deficit was to be cut as real prices of goods and services provided by SOEs were increased sharply, and money supply tightened (interest rates were kept at relatively high positive levels to control aggregate demand).[37] Additionally, the Bresser Plan also included a moderate reduction of import tariffs,[38] further expressing the strangulation of the process of accumulation of industrial capital (through import-substitution) as its limited bases of support collapsed. As its predecessor, the Bresser Plan ended prematurely as the economy contracted and inflation exploded as soon as prices were unfrozen.[39]

By 1988, the shape of the Brazilian economy had gone from bad to worse. Though primary goods prices had slightly recovered, and agrarian production remained strong, the new tightening of international credit supply that followed the 1987 crashes in the US and European financial markets was increasing the magnitude of capital outflows from the Brazilian economy.[40] During 1988, as external debt servicing was re-established, interest-bearing capital outflows amounted to around 15% of all surpluses

[36] See Modiano (1990: 365).
[37] See Modiano (1990: 366-8); Nazmi (1995: 495-96); Abreu (2008b: 410-1).
[38] The average tariff protection was brought down from 57.5% to 32.4% in 1990. See Abreu (2008b: 416).
[39] See Modiano (1990: 370-1); Abreu (2008b: 411-2).
[40] See graph 1.2 in Chapter 1 for the evolution of real interest rates in the USA. Also see Kaminsky (2005: 10) for the evolution of bank lending to developing countries after 1987.

produced in the local economy and were far larger than (almost three times as much as) the magnitude of the land rent appropriated by economic 'agents' other than landowners.[41] To channel these resources out of the country, economic policies became increasingly recessive. Mailson Ferreira da Nobrega replaced Bresser Pereira and implemented a broad adjustment plan, euphemistically called 'policy of beans and rice' (the two basic staple foods in Brazil). The main goal of the plan was to cut the consolidated public sector deficit from 8% of GDP to 4% in order to reduce money supply growth and to bring down the inflation rate to 15% per month. Wages of public sector employees were frozen while state-firm prices increased.[42] The annual rate of inflation, nevertheless, jumped to 682%. GDP and industrial value-added collapsed by 7% while average real wages in the manufacturing sector fell a further 8%.[43]

In the middle of the recession, and after two years of legislative work, a new Constitution was promulgated in order to consolidate the political, economic and social institutions of the democratic system that was taking shape. When it emerged, the 1988 Constitution was an expression of a bygone time. Its writers had been elected in 1986 when the democratisation process reached a climax and the economy boomed. This was no longer the case when it came to light. The Constitution set new responsibilities for the state in terms of economic development promotion, impose limits to foreign capital involvement in the economy, and introduced new (or reinstated old) employment regulations that increased the price of labour-power. All of these would be changed speedily a few years later. Moreover, the Constitution also aimed at correcting the patterns of income inequality and widespread poverty developed during the military regime (1964-1985) through the universalisation of access to social security.[44] In reality, despite its ambitious goals in this regard, the 1988 Constitution would merely provide the institutional framework for the emergence of diverse 'safety nets'. These would become necessary to avoid the worsening of these patterns of social exclusion rather than to reverse them. The Brazilian democratic opening would not express, and mediate politically, the long-term improvements in the conditions of reproduction of the labour-force, as would the case in Korea. On the contrary, it would administer the long-term deterioration of these conditions.

[41] See graphs 2.13 and 2.16 in Chapter 2.
[42] See Modiano (1990: 371-2); Abreu (2008b: 412).
[43] See graphs 4.4 and 4.10 in Chapter 4.
[44] See Bethell and Nicolau (2008: 240-4) on the workings of the National Constituent Assembly and the main outcomes of the 1988 Constitution.

Like its predecessors, Ferreira da Nobrega's plan never managed to control inflation or, its underlying causes, namely, the large public sector deficit caused by the contraction of the land rent and, crucially, the servicing of the massive external debt accumulated during the 1970s. In January 1989, it was replaced by the Summer Plan which attempted, again, to combine 'orthodox' and 'heterodox' measures. Spending cuts and tight monetary policy were implemented together with a new price freeze that produced a fall in the real prices of SOE output.[45] For the first time since 1982, the payment of the external debt did not require a portion of the normal surpluses produced in the economy. The magnitude of the land rent expanded strongly as primary production increased by more than 12% and international prices of primary goods recovered further.[46] The net outflow of interest-bearing capital remained, however, substantial, equivalent to almost all the land rent appropriated with other economic actors than landowners (8.6% of the economy's surpluses). The economy, then, managed to recover, growing 4.5% (2.5% in per capita terms) after two years of deep recession. Value-added in manufacturing increased 2% and real wages in that sector recovered by 3%.[47] This mild recovery, however, would not last long. The global economy was then entering into a new phase of slow growth which would manifest itself in a violent contraction of economic activity in Brazil.

Already through the latter part of 1989, the bases of support of the Brazilian process of capital accumulation would severely weaken again. As the international recession deepened further, global demand slowed and the prices of raw materials produced in Brazil began to fall rapidly after their short-lived recovery. Consequently, much like the previous 'stabilisation' programs, the Summer Plan failed to control inflation. After more than two years of negative real interest rates on the domestic public debt, the Brazilian state was finding it increasingly difficult to finance its deficit with fresh loans. As a consequence, the maturity of the public debt shortened substantially, most of it was renewed overnight.[48] Moreover, government attempts to cut public sector expenditures by reducing its workforce and closing down SOEs were

[45] See table C.40 in Appendix C for the evolution of utility prices.
[46] See graph 2.10 in Chapter 2.
[47] See graphs 4.4 and 4.10 in Chapter 4.
[48] See Cardoso (1991: 190-2) on the evolution of real interest rates on the Brazilian public debt during the 1980s. This author notices that in December 1988 the public debt outstanding amounted to around 40 billion dollars with an effective maturity of one day. See also Batista Jr. (1990: 11-5). According to this author, during 1986-88, the indexation lag of the public debt relative to the GDP deflator, which itself fell relative to the Consumer Price Index, amounted to 28%.

met with fierce political and trade union opposition.[49] The expansion of the momentary base necessary to compensate for the lack of funding reached massive values, 1754% in 1989; the inflationary process became then a full blown hyperinflation.[50] In the middle of the crisis, Fernando Collor de Melo, a businessman from a oligarchic family from the poverty-stricken Northeast and ex-mayor for ARENA, ex-deputy for PSD and ex-governor for PMDB, representing a coalition of right-of-the-centre parties, including Sarney's PFL, defeated PT's Luiz Inacio Lula da Silva on the promise to 'reform' the Brazilian state by cutting waste and eliminating inefficiency and endemic corruption. Echoing Quadros, the last democratically-elected President, corruption and inefficiency were signal by Collor as the structural causes of the rampant inflation rate. Ironically, much like Quadros, Collor presented himself as an 'outsider' against the traditional political elite, despite being supported, though for a brief period, by its most entrenched elements. The support of mainstream mass media was, as always, vital in securing his electoral victory.[51]

In 1990, when Collor assumed office, the economy was in the worst of all possible worlds. After the short-lived recovery of 1988-1989, the magnitude of the land rent available for appropriation in Brazil was failing together with international commodity prices. Global demand for raw materials was weakening as world economic growth slowed sharply. External credit markets were still closed to Brazil and, as international financial markets tightened further, the outflow of interest-bearing capital remained substantial. In 1990, it was equivalent to 3.5% of all surpluses produced in the economy, taking a third of the land rent appropriated by others than landowners.[52] Domestic credit markets were not willing to continue financing a portion of the public sector operational deficit either, as real interest rates on the public debt issued in local currency remained on negative grounds.[53] Recourse to money printing was then fuelling the hyperinflationary process and eroding the undervaluation of the exchange rate, thus reducing the capacity of the economy to generate current account surpluses and service its external liabilities.

The 1980s had witnessed the dramatic clash of the Brazilian process of capital accumulation against its specific quantitative limit given by the magnitude of land rent

[49] See Nazmi (1995: 497).
[50] See Carneiro (2002: 200-4).
[51] See Bethell and Nicolau (2008: 246-50) on the 1989 presidential election.
[52] See graph 2.13 in Chapter 2.
[53] See Bresser Pereira and Nakano (1991: 89-94).

available for appropriation. This clash manifested itself in the impossibility of the economy to return to its previous path of rapid growth under pre-1980 bases. Moreover, as had been the case in the industrially advanced countries during the 1970s, during the 1980s the Brazilian economy increasingly found itself with a structure (at least in the mainstream industrial sector) of relatively undifferentiated remunerations and conditions of labour-force reproduction that no longer corresponded to the composition of skills being required. Though lagging behind world markets standards, the introduction of automated and computerised technologies also accelerated in Brazil during the 1980s.[54] As always in a process of social reproduction autonomously regulated through market transactions and forces, where the norm realises through deviations from the trend, the adjustment of the Brazilian economy to its new conditions was avoided as much as it was possible. During the short tenure of Collor de Melo (1990-1992), most of the adjustments that had been postponed during the 1980s would be undertaken or set in motion. In terms of economic activity, this process would be more disruptive than any other since the crisis of the early 1930s. The adjustment of the economy would mean that the scale of accumulation of industrial capital (i.e. the sheer size and 'depth' of the industrial sector) would be reduced and that it would thereafter be permanently sustained by a third source of extraordinary social wealth, namely, the general payment of labour-power below its value. Collor's economic programme had several parts, realizing together these transformations. The Collor Plan included a new price freeze, the compulsory nationalisation of private bank deposits, trade liberalisation, and a program to 'reform' the state.[55]

First, all prices, including wages, were frozen at the level of 12th March 1990. They would be adjusted at a later date according to the 'expected' rate of inflation, to be set by the government. In the case of wages, it was specified that if the inflation rate differed from the government-set 'expected' one, workers and employers could negotiate wage adjustments accordingly.

Secondly, a monetary reform was included in the Collor Plan through which not only the unit of account was replaced, as in several other 'stabilisation' plans implemented throughout the 1980s, but also bank assets were frozen and *de facto* nationalised. By presidential decree all private and business bank accounts were frozen

[54] On the impact of the introduction of electronics-based automation on the structure of skills in the Brazilian motor-vehicles industry, see Schmitz and Carvalho (1989); Marqués (1990).
[55] On the Collor Plan, see Bresser Pereira and Nakano (1991); Cardoso (1991: 192-5); Nazmi (1995: 497-500).

for a period of 18 months, and stringent restrictions were applied to their use. The frozen funds were then deposited in the Central Bank. As the interest paid on these loans was lower than the inflation rate, still high as part of the deficit continued being monetized, this 'reform' brought about a massive transfer of social wealth to the public sector and helped reduce, at in least in the short term, its operating deficit.[56] Moreover, in this way, the state managed to reduce substantially its previously accumulated stock of internal debt, which it had found increasingly difficult to refinance voluntarily.[57]

Thirdly, measures were taken to transform a fiscal deficit of 8% of GDP into a surplus of 1-2% by the end of 1990. Specific measures included: a new tax on financial transactions; a three-day bank holiday during which the public debt was not indexed; increases in the prices of goods and services provided by SOEs; cuts on state subsidies to private companies; sharp reductions on state expenditures in universal public services; a drastic reduction on public sector employment; and the privatisation of publicly-owned companies in the steel, petrochemical and fertilizers sectors which raised US$ 5.1 billion during 1990-92.[58] Furthermore, the Brazilian state also unilaterally limited, once more, its foreign debt service payments, thus partly defaulting on the debt.[59]

Fourthly, a fully-fledged trade opening programme was implemented under the claim that cheaper imports and increased foreign competition in the domestic markets would both improve local firms' international competitiveness and help reduce the inflation rate. This contrasted with the timid liberalisation efforts begun in 1987. The average tariff was to be reduced from 32.2% in 1990 to 14.2% at the beginning of 1994.[60] Between 1990 and 1992, the effective average tariff on industrial imports was reduced from 47.9% to 31.5%, and would be reduced further to 23.3% in 1993. More important, non-tariff protection was fully eliminated.[61] From then onwards, industrial policy would allegedly be focused on increasing industrial competitiveness through soft

[56] See Cardoso (1991: 193); Nazmi (1995: 498).
[57] Public sector debts outstanding fell from 82.5% to 41.5% of GDP between 1989 and 1991. See table C.36 in Appendix C.
[58] "Privatisation was increasingly seen as contributing to fiscal adjustment in two ways. First, the proceeds of the sale of state enterprises could in principle make an immediate contribution to the reduction Brazil's large public debt, whose servicing costs had skyrocketed in the 1980s. Second, by removing deficit-ridden enterprises from the public sector, the prospects for attaining future fiscal balance were enhanced." Baer and Coes (2001: 611).
[59] See Nazmi (1995: 500).
[60] See Bonelli et al. (1992: 20-2). In early 1992 this schedule was anticipated by six months so that by mid-1993 the final target had been reached. See Abreu (2008b: 425).
[61] See Carneiro (2002: 313-5).

loans and tax credits financing technological upgrading and R&D investments.[62] The land rent was no longer sufficient to sustain a highly diversified but inefficient (for world markets standards) industrial sector.

The recessionary impact of the Collor Plan was sharp, immediate, and widespread. The National Confederation of Industries, representing Brazil's largest private firms, estimated that in the two weeks following its introduction, economic activity declined by 24% while the industrial workforce was reduced by half a million in four weeks. In only one month capital goods production fell by 36% while the demand for non-durable consumer goods collapsed, negatively affecting their production and thus reducing the capacity utilisation rate in that sector from 81% in January to 53% in April. Capital utilisation rate in the transportation and capital goods sectors also dropped substantially, declining by 46% and 26%, respectively.[63]

Against this backdrop, GDP and industrial value-added contracted by 11.5% and 31%, respectively. Employment in the industrial sector collapsed and real wages fell sharply (around 17% in 1990) as the government expected rate of inflation constantly underestimated the real one.[64] In reaction to this, trade union militancy and strike activities increased, though without much success. Furthermore, despite this massive contraction in aggregate demand, inflation was not tamed. As soon as price controls were lifted in July 1990, the inflation rate spiked again as the continuous monetisation of public sector's budget deficit had kept reducing the purchasing power of the Cruzado Novo. On 31st January 1991, in the face of a monthly inflation rate of 20%, the widely anticipated Collor Plan II was finally implemented. The heart of the Plan was yet another price freeze and the introduction of regulations for wage adjustments and interest paid on the public sector domestic debt that would, again, underestimate the rate of inflation. The Plan also required private banks to use part of their deposits to purchase government debt. In conjunction, these measures accomplished the second *de facto* nationalisation of financial assets by the Collor government. As the first Collor Plan, the second also included a further fiscal adjustment, increasing the prices of goods and services provided by state-owned companies and cutting subsidies granted to the private sector. As the previous plan, the Collor II drove the economy deeper into recession without stopping the inflationary process. By May the Plan was already

[62] See Villela (2000: 327-35).
[63] See Nazmi (1995: 502). See also Bresser Pereira and Nakano (1990: 107-8).
[64] See graphs 4.2 and 4.10 in Chapter 4. See also Bresser Pereira and Nakano (1991: 107).

widely regarded as finished. Collor replaced Finance Minister Celia Cardoso do Mello (no connection with the President) with Marques Moreira, who promised to end the 'heterodox' experiments and return to more 'orthodox' prescriptions for fighting inflation.[65]

Time, however, was running out for Collor de Melo. In the middle of a new economic crisis, Collor was removed from office in late September 1992 and impeached at the end of that year on charges of corruption (first denounced by his own brother), something he had promised to eradicate. As had happened with Quadros, the other 'maverick' President, very few stood up to defend him in Congress or anywhere else. Collor was replaced by his deputy, Itamar Franco who continued with the various reforms initiated under Collor's leadership.[66] When Collor de Melo left office, the Brazilian economy was again on a downward path; growth was substantially negative, wages' purchasing power collapsing and hyperinflation spiralling again.

During 1980-92, the Brazilian economy underwent a period of recurrent crises which manifested themselves in an out-of-control inflationary process. The combined mass of land rent and net interest-bearing capital inflows available for appropriation were then contracting as international commodity prices collapsed and capital markets remained closed for Latin American countries like Brazil. The contraction of land rent severely affected the profitability of domestic-markets-oriented industrial capital and state resources, while the large-scale outflow of capital resulted in a strong increase in public sector expenditures. As a result, the dismantling of state-led ISI policies that had started at the beginning of the decade, and had been partly reversed in 1985-86, accelerated after the 1987 balance-of-payments crisis, crucially during 1990-92. The partial, though increasing, monetisation of the massive public sector deficit, in turn, fed the ill-contained inflationary process. As will be seen below, inflation would only be tamed in the mid-1990s, when its structural determining factor, the servicing of the public sector debt, was managed either through fresh external loans, increased taxation, expenditure cuts or a combination of them. Nevertheless, during the 1980s, the inflationary process was instrumental in reducing real wages and increasing profits, thus passing the burden of debt-servicing onto the working-class. The crucial problem was that the external debt contracted during the 1970s had been used to complement the land rent in sustaining the process of accumulation (i.e. valorisation on an expanded scale) of

[65] See Nazmi (1995: 503-4).
[66] See Bethell and Nicoulau (2008: 252-4) on Collor's downfall.

an industrial capital which was incapable of selling its output in the world market and thus genuinely generating, as in Korean, the flow of foreign exchange necessary to repay its external liabilities.

Korea: From the economic crisis to the 'growth recession' (1980-1992)

The assassination of President Park was followed by a period of political opening similar to the one that followed the end of Rhee's autocratic, repressive regime. Demonstrations for a democratic opening spread across the country, notably among university students.[67] As in 1960-61, these proved to be ineffective and short-lived. As the global crisis worsened further, the Korean economy deteriorated fast and a democratically elected government was not quite suited to mediate politically the current moment in the process of capital accumulation. Real wage cuts and the extension of the working-day would be necessary to compensate for the negative effect on capital profitability of the cooling of export markets and the tightening of international credit markets. As many times before, the quick worsening in the conditions of purchase and use of labour-power would come about through increased political repression.

In January 1980, a 'stabilisation' package supported by a two-year IMF stand-by agreement was implemented. As external credit was drying up, crucially long-term commercial loans, the exchange rate was devalued and fiscal and credit policies became increasingly tight. The prevailing higher oil prices were passed through to consumers and the inflation rate increased to 28.7% despite the ensuing recession.[68] The sharp reversal of economic policies, through the 'stabilisation' program, thus resulted in the further deterioration of business activities.[69] In mid-1980, one year and a half after the beginning the recession, the economy was facing its most severe downturn since the end of the Korean War. Political institutions would become increasingly authoritarian rather than democratic.[70]

In May, General Chun Doo-Hwan, KCIA Director, led a military coup that removed from power Prime Minister Choi who, though in charge of the Presidency

[67] See Clifford (1998: 151-7); Kim (2000: 65-7).
[68] See World Bank (1984: 12); Collins and Park (1989: 297-8). See Haggard (1994b: 56) on the worsening of borrowing conditions during the late 1970s. See also Chang (1999: 15).
[69] See Haggard and Collins (1994: 84-5).
[70] See Kim (2000: 63-8, 78-80); Cumings (1989) on the 'aborted opening'.

according to the rules of succession dictated by the Yusin Constitution, had already became a puppet of the military. Like Park before him, in late May 1980, Chun set up the Special Committee for National Security, reformed the Constitution, maintaining the indirect election of the president, and got himself selected to the post soon after. The coup leaders also took over Park's DRP, changing its name to Democratic Justice Party (DJP). Pro-democracy movements erupted across the country, led by university students and 'intellectual' (i.e. white-collar and highly skilled) workers. Manual labourer militancy also increased as the economic crisis was hurting pay and employment conditions across-the-board. In the end, Chun's government did what Park's had not managed to do a year earlier when the economic crisis was beginning to unfold. It openly, violently and decisively repressed the mounting civil opposition. In contrast to the October 1979 events, when Park was killed by the KCIA chief, nobody stood up to stop Chun.[71]

As popular discontent with the government's anti-democratic move grew stronger, notably among university students, the Chun administration declared martial law in May 1980, as Park had done on many similar occasions. Demonstrations disappeared everywhere, except in the country's less prosperous region, the south-western Cholla province. The government responded to the violation of martial law by isolating Cholla's capital, Kwangju, and sending Special Warfare troops rather than crowd control police forces. Some of these elite forces belonged to the units stationed in the frontier with North Korea under the joint command of the US Army. Repressive forces and demonstrators clashed several times. The conflict lasted a week and ended when the army, under presidential order, put forward the deadliest of its offensives on May 27, opening fire indiscriminately and bayoneting to death unarmed civilians. Estimates of the deaths occurring during the Kwangju massacre range from 200 to 2000 according to the source. Organised opposition to the regime ended abruptly.[72]

The Kwangju massacre was followed by a 'purification' campaign reminiscent of that pursued by Park as soon as he took power twenty years before Chung. National Assembly members, civil servants, businessmen and, crucially, non-compliant trade union leaders were charged with the alleged crime of having contributed to the current state of corruption and 'social malaise'. In practice, the campaign removed any remaining institutional opposition to the regime. The 'purification' campaign was so

[71] See Haggard and Collins (1994: 80-1); Clifford (1998: 143-57).
[72] See Clifford (1998: 157-60); Hart-Landsberg (1993: 217-8).

drastic that the World Bank complained that it could affect the normal functioning of the Korean state.[73] Moreover, on late October, also like Park in 1961, the Chun government dissolved all political parties and replaced the National Assembly with the Legislative Council for National Security which soon after passed several bills banning opposition politicians and increasing press censorship.[74]

As the violent reshuffle finished, a new team of economic policy-makers was brought in. Some of its members had already actively taken part in the stabilisation programmes of 1979. All were loyal believers of the 'free markets' dogma and critical of the industrialisation programme of the 1970s. They argued that the type of state intervention behind the latter had severely distorted the allocation of Korea's limited resources and, consequently, created industries that were incapable of surviving commercially without strong and continuous support from the public sector. This situation, they claimed, amplified the effects of the international crisis on the Korean economy. To correct it, a liberalisation reform and restructuring programme, notably involving the *chaebol*, was recommended.[75]

Effectively, crisis management included an 'industrial restructuring' programme, which imposed forced mergers and market segmentations in the industries which were most seriously suffering from overcapacity: power-generating equipment, automobiles, diesel engine, heavy electrical machinery, electronic switching system, and copper smelting.[76] Competing and overlapping product lines were eliminated, sometimes because of superior efficiency, in other occasions simply because of stronger lobby power.[77] Though the early and, to lesser extent, the later Chun years are frequently considered as the complete opposite of the previous period in terms of economic policy-making,[78] there was an intrinsic unity between both which further proves the argument presented above regarding the relationship between states and markets. Changes in policy-making, whether completely departing from past directions or simply correcting them, almost always come about throughout or after periods of economic hardship or crisis. In other words, the self-regulating process of capital accumulation through market transaction realises itself through 'trial and error' interventions of nation-states.

[73] See Clifford (1998: 164-8).
[74] See Haggard (1994: 69); Kim (2000: 78-9).
[75] See Clifford (1998: 131-3).
[76] See Haggard and Moon (1990: 226-7); Chang (1993: 15).
[77] See Clifford (1998: 189).
[78] See e.g. World Bank (1987).

Apart from continuing with the 'stabilisation' and industrial restructuring programmes, the new government's economic agenda also included the partial liberalisation of the financial sector. The Fifth Five-year Economic and Social Development Plan for 1982-86, formulated during 1981, condensed and expressed the new direction in economic policy. The Plan would aim at 'structural adjustment' in the HCIs by phasing out most support measures and opening up the domestic markets. Moreover, it was the first five-year plan to include the word 'social' in its title. The Plan also aimed at expanding state investments in education and social welfare.[79]

Starting in 1982, the financial sector was partly liberalised. Publicly-owned commercial banks were privatized and restrictions on the development of non-banking financial institutions (NBFIs) were relaxed. Though efforts were made to avoid concentrated ownership, the *chaebol* managed to gain control of the largest part of these financial institutions. There was also a related partial opening of the capital account of the balance-of-payments by increasing the number of industries that were allowed to borrow in international financial markets and allowing more foreign banks to establish subsidiaries in Korea.[80]

As in the early 1970s, the change in the direction of state policies also included reshaping labour market institutions. Apart from the persecution of trade union leaders during the 'purification' programme, in late 1980 labour-related laws were revised and trade unions were reorganised in order further to restrict their political power. The revised Trade Union and Labour Dispute Laws deepened the changes introduced during the Park regime. First, they limited the freedom of labour to organise unions by requiring them to be supported by 30 workers or 20% of the total workshop members, and by reinforcing state's power to refuse the establishment of unions. Secondly, the new laws *de jure* transformed the overall union structure from industry-level to individual firm-level; 'third-party' interventions in labour disputes, including those by union federations, were banned. In addition, in order to 'encourage' cooperation between employees and employers, a law was enacted, mandating the establishment of Labour-Management councils in individual enterprises with 100 or more employees. Although the law did not legally confer wage-negotiations functions to the councils, these gradually took them over, *de facto* replacing trade unions.[81] Moreover, to keep

[79] See Michell (1988: 75-6); Haggard and Collins (1994: 80); Shin (2003: 113).
[80] See Hahm (2003: 81-6).
[81] See Haggard and Moon (1900: 224-25); Haggard and Collins (1994: 90); Shin (2003: 128-29).

wage growth under control, the Chun government also introduced 'guidelines' for private sector wage adjustments and pecuniary punishments for non-compliant firms.[82]

The sharp increase in global interest rates between 1980 and 1982, and the concomitant tightening of the credit markets, resulted in the reduction of net inflows of loan capital to Korea, even when the country had access to 'special' Japanese support.[83] Following the global trend, real interest rates for corporate loans in Korea increased from -10.7% in 1980 to 12.06% in 1982 (from -8.7% to 2.8% for state-controlled loans). The increase in the cost of credit was most pronounced in the informal 'curb' market, where even large companies getting official support for their fixed capital investments had to borrow frequently to cover their requirements for current expenditures. Real interest rates there almost doubled between 1981 and 1982 to reach 26% p.a.[84] As in 1972, local firms began to default on their loans and the 'curb' market went to yet another crisis, this time even involving cronies of the president and his family, who had been behind a massive fraudulent money lending scheme.[85]

With limited resources to fund capital formation and export markets in recession, the Korean economy underwent a period of relatively slow growth. GDP per capita fell by 6.9% in 1980 and grew merely 1.7% in 1981. It only began to speed up through 1982, growing 5.5% in real terms. The crisis was particularly acute in the manufacturing sector. During 1980 and 1981, industrial employment fell by 10% while real wages in this sector dropped 9%, and working hours increased reversing the mild downward trend of the previous years.[86] Increased political repression, together with the reformed labour laws, limited the emergence of any significant form of social unrest.[87]

By 1983, however, the growth rate of the Korean economy was already shooting up again. Pulled by the strong recovery of industrially advanced economies, exports of manufactured goods, such as steel, ships, consumer electronics, and automobiles, expanded rapidly.[88] In sharp contrast to the contemporary Brazilian experience, between 1983 and 1988 the Korean economy grew at an average of 11.3% per year. This

[82] See Haggard and Moon (1900: 223-24); Kim (1994: 214-16).
[83] See Hart-Landsberg (1993: 195-96) on Japan's financial help to Korea.
[84] See table C.35 in Appendix C.
[85] See Nam (1991: 218) on the increase in borrowing costs. See Haggard and Collins (1994: 85); Clifford (1998: 194-200) on the 'curb' market crisis.
[86] See graphs 4.4 and 4.10 in Chapter 4 on growth performance and real wage evolution, respectively. See Koo (2001: 48-50) on the evolution of hours worked in manufacturing.
[87] See Kim (2000: 78-80).
[88] See Clifford (1998: 241-3). On the expansion of ship exports during the 1980s, see Jonsson (1995: 86-9).

impressive performance mimicked the evolution of the global economy, notably the USA, as the Korean process of capital accumulation was heavily dependent on industrial exports. Indeed, economic growth only slowed in 1985, following the evolution of overseas markets, especially in the USA. So sensitive was the Korean process of capital accumulation to these developments that when US GDP growth fell from 6.6 % in 1984 to 3.6% in 1985, Korean industrial exports contracted by 4% and business failures spread across the national economy, including the collapse of the Kukje Group at the time the sixth largest *chaebol*.[89] Nevertheless, despite the 1985 slowdown, Korean exports almost trebled during the boom years of the 1980s. The rate of profit of industrial capital doubled between 1980 and 1987.[90] This despite the decline in exports of construction services to the Middle East due to the sharp fall in the price of oil, and the increased cost of Korean labour.[91]

This performance was more impressive when considering that, in contrast to the previous export-led growth experience, during the second part of the 1980s the Korean economy did not have access to foreign savings to finance capital formation. Global capital markets remained tight for developing countries, Korea included.[92] Indeed, a portion of the domestic savings, which already averaged 36.5% of GDP during 1986-90,[93] was used to cancel part of the country's external liabilities.[94] Without the permanent inflow of loan capital to finance a portion of capital formation, as it had been the case before 1983, the Won was devalued further. Exports then boomed and the trade account deficit was slowly reduced. In 1985-86 the Won was sold at a price that reflected its purchasing parity power for the first time and the trade account became positive.[95] The stock of the Korean external debt fell by a massive 30% between 1985 and 1989.[96]

As economic growth accelerated, some of the policies or institutional changes implemented during the 1980-82 recession were partly or fully reversed, indicating that they had been a form of realising the economic crisis through the mediation of the state.

[89] See World Bank (1987: 4-5). On the Kukje Group crisis, see Haggard and Collins (1994: 91-2, 95-6); Clifford (1998: 218-26).
[90] See graph 2.9 in Chapter 2.
[91] See Kim (1988) on the expansion of construction service exports to the Middle East.
[92] See Hoff and Stiglitz (2001: 430) for the general trend. See World Bank (1987: 19) on the Korean situation in the mid-1980s.
[93] On the evolution of the savings rates during the 1980s, see Chung (2007: 292).
[94] See graph 2.15 Chapter 2.
[95] See graph 2.2 in Chapter 2 and table C.38 in Appendix C.
[96] See graph 2.16.

The group of 'puritan' young officials that had gained prominence during the purges of the early days of Chun's government returned to the barracks and the economists in charge of the stabilisation programme regained authority within the bureaucracy.[97] Moreover, in 1986 the latter were replaced by less orthodox peers. Kim Mahn-Je, a proponent of more expansionist policies, took command of the EPB. Calls for stability were gradually replaced by a renewed emphasis on economic growth and employment.[98] A process of political liberalisation slowly started in late 1983 and gave place to a period of increased mobilisation of different sectors of the 'civil society', notably of white-collar and 'intellectual' workers. These were increasingly demanding the restoration of democratic institutions of governments. Unions of male blue-collar HCI workers, though, remained relatively marginal in the process. In the 1985 National Assembly elections, called by the Chun government hoping the economic recovery would improve its chances of gaining popular support, the opposition parties obtained a substantial majority of the vote.[99] Real wages recovered what they had lost during the years of recession. However, in contrast to the developments in other parts of the national economy, working hours in manufacturing kept growing until peaking in 1986.[100] Finally, the privatisation of non-banking public companies initiated in the early 1980s was frozen until 1987, when the economic recovery was well under way and the Chun government was coming to an end. Even then only a small fraction of the shares of a few companies (e.g. POSCO, Korea Telecommunications) were offered for sale in a move which, unlike in the banking sector, seemed more a political gesture than a radical change in policy as was then the case in the industrially advanced countries.[101]

Other policy shifts were maintained or even reinforced, indicating that they expressed a change in the *forms* of realisation of the Korean process of capitalist development that went beyond the crisis that triggered their implementation. These included the deepening of the import liberalisation programme and the devaluation of the exchange rate. Yet, these reforms did not entail a *structural* change in the underlying *essential* characteristics of the Korean economy. With the exchange rate no longer overvalued, the 1980s witnessed the almost continuous removal of tariffs and quantitative restrictions to imports. This was now needed to make imports used in

[97] See Haggard and Moon (1990: 219-30).
[98] See Haggard and Moon (1990: 229).
[99] See Kim (2000: 79-90).
[100] See table A4.7 in the appendix to Chapter 4.
[101] See Clifford (1998: 312) on Roh's timid privatisation programme.

exportable productions possible. Moreover, by then most of those sectors and companies promoted during the 1970s HCIs drive had shown their commercial potentialities and developed successfully, like the steel, electronics and shipbuilding industries, or failed altogether, like parts of the heavy industrial machinery, non-ferrous metals and chemical industries. In either case, they no longer required high protection from foreign competition. On the contrary, those industries that were still 'maturing', notably the motor-vehicle sector and the microelectronics industry, kept being guarded from external competitors when necessary.[102]

The deregulation of the local financial sector also continued throughout the 1980s.[103] Commercial banks were fully privatised and NBFIs were allowed to flourish rapidly. Interest rates in this latter branch of the financial sector were increasingly freed and, consequently, the share of total deposits it captured grew markedly, doubling from 29% in 1980 to 46% in 1985 and 59% in 1990.[104] These NBFIs became the main source of capital for those *chaebol* in sectors which had no longer access to soft 'policy loans.' This marked the practical end of the 'curb' financial market. On the contrary, much like during the 1970s 'big push' into HCIs, 'priority' sectors, kept receiving 'policy loans' through state developmental banks and the now privately owned commercial banks. The government kept controlling and using the latter to channel resources at subsidised rates to 'priority' industries and activities (i.e. exports, housing) until at least the early 1990s.[105]

Despite the overall 'liberalising' and 'neutral' profile of the programme, which included not only trade opening but also the shift to 'functional' state support like competition and R&D promotion, some additional 'interventionist' measures were also implemented during this period, crucially to accelerate the restructuring of particular industrial sectors.[106] In 1986, seven industry-specific Promotional Laws were merged into the Industrial Development Law, centred on the so-called 'rationalisation programmes.' These were tailored to the needs of individual industries and aimed to provide temporary boosts for 'nascent' industries requiring capacity upgrading and improvements in their international competitiveness or temporary protection for 'declining' sectors requiring a smooth phasing-out. Three main types of temporary

[102] See Graham (2003: 67-73) for an overview of the policies supporting these sectors during the 1980s.
[103] For an overview of financial sector reforms, see Park (1996); Hahm (2003: 80-6).
[104] See Park (1996: 253-4); Hahm (2003: 84-5, 90-1).
[105] See Haggard and Collins (1994: 90-1); Park (1996: 254-5); Pirie (2008: 80-2).
[106] See World Bank (1987: 48-52).

policies were employed for these purposes: protective measures to ease adjustment processes; measures related to the attainment of optimal production scales and the prevention of 'excessive' competition; and, measures attempting to increase productivity. The latter included the provision of subsidies for such activities as capacity upgrading, R&D investments and worker training programmes. As was seen above for the case of the microelectronics industry, it also included the implementation of joint research programmes between private firms and government-funded institutes.[107] Moreover, the electronics and machinery industries (which included motor-vehicles) kept receiving special tax treatment (though benefits were reduced) despite tax incentives to HCIs were phased out in 1983.[108]

In contrast to the trade and financial sector reforms, the capital account was not yet liberalized. Restrictions on direct overseas borrowing by firms, banks and other financial institutions, though relaxed, remained largely in effect.[109] So did most existing restrictions to the inflow of foreign direct investments. In any case, during the 1980s international credit was not flowing to developing countries and the Korean economy was no exception. Nevertheless, despite these restrictions, by the late 1980s certain parts of Korea's non-banking financial sector (e.g. the life insurance market) were already largely opened to foreign participation.[110]

The strong increase in industrial production for world markets from 1983 onwards not only manifested itself in the quantitative expansion of the previous scale of capital accumulation. It was also evident in the further 'deepening' of the Korean manufacturing sector, through the same, unchanged specific form as hitherto, namely, the use by capital of a relatively cheap and disciplined workforce to perform industrial activities that had been simplified and standardised further as a result of the continuous process of machinery automation and computerisation. The expansion of industrial activity strongly pulled demand for labour and full employment was virtually attained during the second half of the decade. Real wage growth accelerated, notably during the 1987-88 when industrial wages grew more than 10% per year. As the previous period of fast wage growth (i.e. 1976-79), the increase in real wages during the 1980s was faster for production than for office workers and relatively undifferentiated among the

[107] See Chang (1993: 142-4).
[108] See Shin (2003: 117).
[109] See Amsden and Euh (1990).
[110] See Cho (1988); Shin (2003: 116).

former.[111] This abrupt realignment of the purchasing power of industrial wages in Korea to levels compatible with the normal reproduction of the local labour-force was a necessary condition to attain the level productivity required by industrial capital in the new spheres in which it was concentrating. Surplus peasant populations were then exhausted and not even unskilled workers could then be paid below their value (i.e. the cost of their long-term normal reproduction).[112] Nevertheless, Korean capital, and its political representative, the state, would not grant this realignment without any resistance. On the contrary, it came about through a ferocious, though short-lived, political conflict between those selling and those buying the commodity whose price was being realigned, labour-power.

In 1987, after several years of strong economic growth and slow political opening, demands for the restoration of democratic institutions, especially direct presidential elections, were gathering momentum, notably among white-collar and 'intellectual' workers. A trigger was only needed to transform that into effective wide-reaching political action. When the Chun government announced that it would reform the Constitution again and call for an election, an immediate conflict arose over the form of selection of the future president. As in Brazil in 1984, the regime pushed for the use of the Electoral College under its control and opposition parties lobbied strongly for the direct election of the future president. A new wave of social unrest, notably among students and white-collar workers, took place as the Korean population immediately related the regime's proposal with its attempt to control the election of the next head of government.[113] This time, however, the military government decided not to pursue repressive actions; those supporting this political option were defeated. The context was radically different from that of 1980. Not only the government's popularity was collapsing for the continuity of political closure and the constant surfacing of corruption scandals (that itself did not seemed to be a problem before), but now, after five years of strong growth and tightening of the labour market, society at large would have not remained entirely acquiescent to that initiative. Neither capital needed real wage cuts for its normal valorisation nor did these appear in the 'public opinion' as necessary to solve

[111] See graph 4.10 in Chapter 4.
[112] Using the PPPs for consumption estimated in Heston et al. (2009), the purchasing capacity of hourly compensation costs, most of which were wages, for production workers in manufacturing were in Korea 14, 25 and 15 per cent lower than in Taiwan, Hong-Kong and Singapore, respectively, while working hours were substantially longer. See Deyo (1989: 91) on hourly compensation costs in US$. See You (1995: 121); Koo (2001) on working hours.
[113] See Koo (2001: 154-6).

an ensuing economic crisis as had been the case in the early 1980s.[114] Apparently contradicting his superior, Roh Tae-woo, a military leader in the 1980 coup and the regime's candidate in the forthcoming elections, presented an ultimatum to the government saying that he would withdraw from the electoral contest if the regime did not back down from its attempt. Roh's declaration also included a commitment to guarantee human and political rights. It is unknown whether that move was staged or not. In any case, Chun had no option but to accept the popular demand. Surprisingly, the move paid off for the DJP as Roh was subsequently elected president in late 1987 with only 36% of the votes as the main opposition split in the run up to the elections.[115]

Nevertheless, as soon as Roh asserted his commitment to the democratic opening, a wave of spontaneous and unorganised, but decisive, industrial actions erupted among those semi-skilled 'core' male workers in large-scale heavy and consumer-durable goods industries dominated by the *chaebol*s. The intervention of this sector of the Korean industrial working-class, which had been almost fully acquiescent during the previous thirty years, occurred overnight, as if manual workers had been waiting for 'permission' to protest against the poor working conditions, harsh treatment by management and low payments. The wave of labour unrest lasted for almost three years. Between 1987 and 1989, the number of labour conflicts in Korea averaged 2,400 per year. This sharply contrasted with the 168 averaged during the previous five years. As democratic (i.e. independent) trade unions were formed, membership increased dramatically during this period to reach 1.93 million workers or 23.4% of the industrial workforce in 1989. Though concentrated in the large-scale heavy and chemical industrial sector, most of the gains labour obtained during the 'Great Workers' Struggle', as this period came to be known to sympathisers, were spread across the rest of Korea's blue-collar workers.[116]

Interestingly, despite its relatively universal immediate impact, this working-class political offensive would also mark the end of the trend to the relatively undifferentiated reproduction of the Korean industrial labour-force. One of its major outcomes would become a key factor reversing that trend: the emergence of company trade unions in the large-scale industrial sector dominated by the *chaebol*s where they had been previously blocked by management and owners. Unions in the *chaebol* sector

[114] See You (1995: 138-40).
[115] See Haggard and Moon (1990: 233); Clifford (1998: 263-70); Kim (2000: 95-7).
[116] See Clifford (1998: 272-81); Bello and Rosenfeld (1992: 40-5); Kim (1994: 193-5); Koo (2001: 157-62).

would, from then onwards, negotiate welfare packages, wages and working conditions for their members, sometimes even at plant level. Industry-wide unions and nationwide federations would, in general, remain weak and marginal in the process of collective bargaining. Workers in light industries and in small and medium sized companies would negotiate their payment and working conditions independently, usually at company level, with less success given their weaker collective organisation. A new umbrella association, the National Congress of Trade Unions (NCTU), was formed in 1990, representing mainly workers in small- and medium-size manufacturing firms.[117] Moreover, though labour laws were partly amended in late 1987, lifting some limitations to form trade unions, their involvement in national politics remained banned.[118]

The 'Great Workers' Struggle' not only resulted in large, relatively universal wage increases, improvements in working conditions and trade union rights. It also gave place to a reform in the welfare system, thus streamlining the overall process of reproduction of the labour-force. In 1988-89 two key reforms were introduced to the social security system in response to unions' pressure. First, the coverage of the Medical Insurance Programme (MIP) was extended substantially. Secondly, the National Pension System (NPS), created in 1973, was finally put into practice. In the long run, however, these changes did not transform structurally the process of labour's reproduction. To begin with, both the MIP and NPS were based on contributions made by employers and employees (i.e. the social insurance model) with limited state participation, apart from its administration, and, therefore, negligible horizontal redistribution of income. State contributions only covered those corresponding to its employees and to wage-labourers and self-employed in the primary sector. Moreover, the MIP involved a co-payment scheme with such high contribution from users that, in practice, constituted a considerable barrier for the universal consumption of healthcare services. Consequently, per capita health expenditure in Korea remained low by international standards (one-fifth of Japanese and German levels in 1990), and also almost 60% remained privately funded (25-27% in Japan and Germany where social insurance models were also used). The NPS, in its turn, required 20 years of

[117] See Koo (2001: 178-9).
[118] Shin (2005: 109); Koo (2001: 193-5)

contributions and thus only became effective in 2008.[119] Neither scheme was universal. They covered workplaces with more than ten employees and were expanded to cover all workplaces with five or more employees only in 1992. Hence, in practice, the reshaped social security system largely implied the formalisation under state management of previous arrangements based on private institutions (in most of the cases meaning no insurance beyond the family). In this way, the social security system continued mediating the differentiated reproduction of the Korean labour-force (i.e. the dual labour market structure). Nevertheless, they proved useful to concentrate financial resources under state control.[120]

This process of working-class relatively universal advance, however, could not continue much further without beginning to hurt the normal long-run profitability and reproduction of Korean industrial capital. The self-regulation of the process of social life through market forces - the process of capital accumulation - then came about through new, violent political struggles. By the turn of the decade, as the global economy entered a period of decelerating growth that culminated in the 1991-92 recession, the Korean process of capital accumulation would go into another phase of economic crisis and political tensions. In the USA, still the main single market for Korean industrial products, economic growth decelerated rapidly from 3.5% in 1988 to 2.5% in 1989, 0.4% in 1990 and -0.9% in 1991.[121] European economies followed a similar, though slightly lagged, pattern. Consequently, the growth of Korean industrial exports fell sharply from 27.1% yearly average during 1986-88 to -1% in 1989 and -0.8 in 1990. It only rebounded marginally in 1991-92 to 4.85% annual average.[122] Thus Korean industrial GDP growth slowed sharply (from 13% in 1988 to 1.6% and 3.8% in 1989 and 1990, respectively) and, though it recovered during 1991, it fell again in 1992, the year that came to be known locally as the 'growth recession.'[123]

The worsening economic environment lifted an objective barrier to what could be granted by industrial capital and brought the 'Great Workers' Struggles' to an abrupt

[119] It was born, however, with potential financing problems as it promised significant payments (60% reposition wage) with low contributions (3% during 1998-93, increasing to 6% in 1993 and 9% in 1998) and relatively low retirement age of 60. For its first ten year, most of the National Pension Fund would be loaned to the public sector at below market interest rates, thus transferring a portion of the value of the labour-force to industrial capital. See Kwon (1999); Jun (2004: 129-32).
[120] On welfare system and social policy reforms during the late 1980s, see Shin (2003: 118-28).
[121] See graph 1.2 in Chapter 1.
[122] See table C.16 in Appendix C.
[123] See graph 4.5 in Chapter 4. See also Graham (2003: 76) on Korean macroeconomic performance during the late 1980s and early 1990s.

end. Hitherto sympathetic public opinion turned rapidly against blue-collar worker stance and the state flexed it repressive muscle.[124] The rapid increases in real wages and workers' constant belligerency to achieve these and other benefits, as well as new labour rights, were worsening Korean international competitiveness, crucially in the current global environment. They were signalled now almost everywhere as the main cause behind prevailing economic woes.[125] While workers' demands had not been met with state repression during the years of economic boom, this was no longer the case when the 'recession' ensued. A massive and violent police involvement in industrial conflicts took place to bring them to an end, while opposition parties, all of them appealing to white-collar worker constituencies and funded by *chaebol* contributions, closed ranks with the governing party in the National Assembly to form the so-called 'Grand Conservative Coalition.'[126]

Labour policies became, again, restrictive and were complemented, as many times before, with the passing of the Law for National Security to crack down on union leaders. Under harsh political repression and weak labour market conditions, in 1992 the number of labour disputes and union membership returned to pre-1987 levels. As in the early 1980s, the government set 'guidelines' to reduce the speed of wage adjustments. Again, those private companies not complying with them were threatened with tighter credit conditions and tax inspections.[127] Wage growth in the industrial sector thus fell from 18% in 1989 to 7% in 1991, more in line with the changing consumption patterns of the Korean working-class and the related increases in labour productivity.[128]

Not only labour policies changed their direction as the crisis began to bite. Economic policies in general also shifted to accommodate to the new global conditions and thus mediate the local economy slowdown. Credit expansion was curtailed and all policy loans were stopped except those used to buy machinery for export activities.[129] Between 1989 and 1994, while capital outflows increased, the exchange rate was devalued 20%. The average tariff rate was thus decreased from 18.1% to 7.9%. Non-tariff restrictions were also largely removed by shifting imports to the automatic

[124] See Koo (2001: 170-5, 189-90).
[125] See Koo (2001: 192); Shin (2003: 131).
[126] The wing of the NDP led by Kim Dae-jung was the only notable exception. The NDP then disappeared and those not joining forces with the government formed the Democratic Party (DP).
[127] See Shin (2003: 131-2).
[128] See graph 4.10 in Chapter 4 and table C.28 in Appendix C.
[129] See Graham (2003: 75).

approval list. With exports no longer increasing fast, in 1990, the current account turned into deficit again.[130]

As had already become, and would remain, common in Korea, the economic crisis triggered the surfacing of several corruption scandals directly or indirectly involving the President, his closest advisors and some *chaebol*. The extended and pervasive involvement of the state in the allocation of resources, crucially to accelerate the concentration of industrial capital, inevitable led to a close, not entirely legal, relationship between bureaucrats and private firms. Nevertheless, in 1992, Kim Young-Sam, one of the historic leaders of the opposition, was elected as the candidate for the official Democratic Liberal Party (DPL), recently founded by Roh to replace the DJP. Kim Young-Sam had joined it only in 1990 when the 'Grand Conservative Coalition', which also included Park's right-hand, Kim-Jong Pil, emerged. With the control of state resources and institutions, he defeated a divided opposition headed by Kim Dae-Jung, the other historic leader of the NDP turned DP, and Chung Ju-Yung, the chairman of Hyundai Group, the largest conglomerate in Korea.[131]

End of chapter conclusions

During the 1980s, the specific difference of the Brazilian and Korean processes of capitalist development finally became openly evident and manifest in divergent growth and developmental performances. Cut off from new credit during much of the decade, both economies were forced to turn their current account deficits into surpluses and cancel part of their external debts. The forms of doing so were, however, significantly different. So were the long-term growth and developmental consequences of the process.

During this period, the Korean economy managed to grow strongly despite cancelling a large part of the debts it had contracted during the 1970s 'big push' into the HCIs. Production of increasingly higher value-added goods from the industrial branches implanted during the previous decade became then internationally competitive and overseas sales thus expanded strongly. This process of continual and extended industrial upgrading manifested itself in strong and universal wage increases, necessary to

[130] See Shin (2003: 117)
[131] See Clifford (1998: 312); Graham (2003: 77-8, 89).

reproduce normally the local workforce, and came about through a process of democratic opening to make them effective.

The experience of the Brazilian economy during this decade was radically different. As the land rent contracted, domestic demand slackened. The growth of industrial productions for the domestic market thus stagnated. Nevertheless, exports, notably of industrial goods, expanded sharply, allowing the economy to get through its balance-of-payments crisis. Exports growth was, however, based on grounds different from the ones that were beneath the Korean export-led industrialisation in general, and the post-1982 recovery, in particular. As international commodity prices fell strongly and the heavy industries built during the 1970s were, as the rest of the local industrial sector, far from internationally competitive, the expansion of exports was based, originally, on the reduction of local wages and, later, on the strong undervaluation of the currency. The economic recovery initiated in 1984 manifested itself in a democratisation process which brought a civilian government to power. This, like in Korea, gave place to a sharp increase in real wages which, in contrast to the Korean experience, was short-lived.

At the end of the decade, global economic growth decelerated again and international credit markets tightened, negatively affecting the performance of both economies. The global recession, however, manifested itself differently. While the Korean economy merely slowed its pace of growth, its Brazilian counterpart went through a crisis which was far deeper than the one at the beginning of the decade. While real wage growth in Korea merely slowed, wages fell substantially in Brazil. Moreover, while the crisis in Korea accelerated the subsequent deepening of the industrial sector, it resulted in the opposite trend in Brazil.

Chapter 9

Brazil and Korea between the Early 1990s and the Mid-2000s

Brazil: The era of 'neoliberalism' (1993-2005)

In early 1993, despite the acceleration of global growth, the Brazilian economy was again in the middle of a hyperinflationary crisis. GDP and industrial value-added were 30% and 45% below its 1986 peak, respectively. The participation of industrial value-added in total GDP had fallen from 30-32% in 1985-86 to 23-26% in 1992-93.[1] The manufacturing sector had shed around one-fourth of its employees in formal contracts.[2] In May Fernando Henrique Cardoso was appointed as the fourth Minister of Finance of Franco's embattled government. By bringing such a heavyweight figure into the economic team, President Franco not only ceased to interfere in the implementation of economic policy but also, and more important given the fragmented structure of the Brazilian multiparty system in the national Congress, succeeded in finally bringing the Party of Brazilian Social-democracy (PSDB, a splinter from the PMDB) and the rightist PFL into the government's support base.[3]

Aided by a group of leading mainstream economists, Cardoso embarked on a stabilisation programme which, like most of its 'heterodox' predecessors, included a monetary reform but, in contrast to them, did not incorporate a price freeze. Under the claim that it was needed to 'anchor' domestic prices, a new currency was created, the Real, whose unitary price was equal to one US dollar.[4] The replacement of the old currency by the new, and the conversion of domestic prices into the latter, was done over a period of one month rather than instantaneously as had been done in previous stabilisation plans.[5] The Real was, from the moment it was launched as a 'theoretical'

[1] See Oreiro and Feijo (2010: 225).
[2] See table C.6 in Appendix C.
[3] See Bethell and Nicolau (2008: 255) on Franco's coalitional alliances. In 1985 the Brazilian party system was reformed, facilitating the emergence of political parties. See Bethell and Nicolau (2008: 234, 268-71). This meant that, as before 1964, inter-party (and inter-class) alliances became a condition for governability.
[4] See Novelli and Galvao (2001-2: 14).
[5] Government officials congratulated themselves that the Plan Real did not create legal conflicts or redistributive processes as had been the case during previous stabilisation programs (Franco, 2000). The former was only possible through a manipulation of the price index with which contracts were adjusted; the latter was a fiction. The adjustment of wages with the artificially low official CPI produced a significant redistribution of income from labour to capital.

unit of account, substantially overvalued.[6] The recovery of primary goods international prices, resulting from the acceleration of global demand for them, was giving place to an expansion of the Brazilian land rent and thus allowing an increase in the overvaluation of the exchange rate to transfer it to industrial capital.[7] In addition, liquidity in international credit markets was expanding strongly and Brazil, as many other developing countries, managed finally to renegotiate its external liabilities. In 1993, Brazil reached an agreement with its foreign creditors under the framework of the Brady Plan and new foreign loans began flowing soon after.[8] This time, however, the mechanisms through which the state used interest-bearing capital inflows (i.e. the external debt) to complement the land rent, in supporting capital's profitability, would contrast from those in practice during the 1970s when most loans had been directly procured by SOEs to fund their operations and investments.

During the life of the Plan Real (1994-98), the Brazilian state sustained the strong, though decreasing, overvaluation of the exchange rate by borrowing funds in excess of its financial requirements, notably from domestic financial institutions that had, in turn, funded their operations in the international markets.[9] In this way, the government managed to sustain, and even increase, the level of international reserves held by the Central Bank, despite the massive current account deficits resulting from the overvaluation of the national currency.[10] As many times before, the latter acted as an implicit 'tax' on exports, most of them raw or semi-processed materials, and as a 'subsidy' to imports. It also reduced the price of raw materials in the domestic market

[6] During the duration of the Plan Real (1994-98), the Brazilian currency was, on average, 65% overvalued. The overvaluation of the Real reached its maximum level, around 90%, during late 1994 and early 1995. See graph 2.1 in Chapter 2.

[7] Taxes on commodity exports (ICM) were reduced and then eliminated altogether. See Abreu (2008c: 450).

[8] See Carneiro (2002: 250-3); Abreu (2008b: 423).

[9] See Carneiro (2002: 280-91); Lanzarini Casa (2009).

[10] The Brazilian government was not sterilising the inflow of capital resulting from high local interest rates and the exchange rate stability as is frequently argued (see e.g. Carneiro, 2002: 394). Capital inflows resulted largely from the government's desperate attempt to rebuild falling international reserves and thus sustain the overvaluation ('stability') of the Real. "Therefore, *strictu sensu*, capital inflows were not sterilized once they entered the country; they entered the country in order to purchase government securities and profit from the large spread. The government was purchasing foreign reserves in order to prevent oscillations in the economy's cash flow from jeopardizing the stabilisation effort under construction. The word 'sterilisation,' though, gives the wrong timing idea; it suggests that after the funds entered the country, and have been converted into domestic currency, government securities were sold to mop up liquidity and avoid the inflationary consequences of monetary expansion. That was not the case in Brazil. The word sterilisation also suggests that the government has to raise interest rates in order to sell its securities. That is also false for the Brazilian case. Had the Central Bank not intervened by selling securities at low prices (high yields), the domestic interest rate would have fallen and the capital inflows would have been smaller." (Dias Carneiro et al., 2001: 20). See also Lanzarini Casa (2009).

and strongly subsidised, and thus stimulated, the repatriation of profits by foreign-invested capitals, now structurally enlarged as the privatisation of SOEs, timidly initiated during the previous period, accelerated.[11] Export taxes and state restriction to commodity trade were phased out as forms of land rent appropriation by capital.

The Real stabilisation plan was complemented with further trade opening and tight fiscal and monetary policies. Substantial expenditure cuts at all levels of government and tax increases were implemented in the so-called Immediate Action Plan and the Emergency Social Fund.[12] For the longer term, the government announced it plans to reform the 1988 Constitution in order to transfer to state and municipal governments certain responsibilities in the provision of healthcare, education, social services, housing, basic sanitation and irrigation, while decreasing the automatic transfers of federal tax receipts to them. As the public sector deficit shrank and funds to finance the state again became available, the government was able to control money supply growth. The inflation rate thus dropped significantly during the Plan Real.[13]

With the magnitude of the two sources of extraordinary social wealth that had been sustaining the process of capital valorisation (land rent and loan inflows) expanding, the local economy not only stabilised through 1994, but also started growing strongly during the second part of the year. Credit supply then boomed in the domestic market, boosting the demand for consumer-durable goods.[14] In this context, Cardoso, the 'successful' Minister of Finance had no difficulty in defeating PT's Lula in the late 1994 Presidential election on a ticket to continue with the 'modernisation' of the economy that was allegedly the reason behind the fall in the inflation rate and the return of growth after more than a decade of economic difficulties.[15] The problem, however, was that behind the superficial transformations in its form of realisation, the *specific characteristic* of the Brazilian process of capitalist development remained unchanged, as limited and contradictory as ever before.

Public debt was not, however, the only source of money-capital enlarging the inflows of extraordinary social wealth to Brazil during the 1990s. In effect, throughout the Plan Real, resources borrowed externally were complemented, in sustaining the overvaluation of the currency and thus capital valorisation, by funds raised through the

[11] See Baer and Coes (2001); Castelar Pinheiro (2002) on SOEs privatisation during the 1990s.
[12] See Abreu (2008b: 426).
[13] See Amann and Baer (2000: 1806-7).
[14] See Amann and Baer (2000: 1815); Carneiro (2002: 379-83) on expansion of credit to domestic consumers.
[15] See Spanakos and Renno (2006: 12-4); Bethell and Nicolau (2008: 257-9).

sale of state-owned assets. These were used to service the public sector debt and thus reduced the financial requirements of the state.[16] Under the ideological argument that it was needed to root out the legacy of the 'old' model of development from the 'new' one, the 1988 Constitution was reformed to end state monopolies in the production and provision of public utilities, and to allow for the participation of foreign capital in the privatisation process.[17] In effect, the privatisation programme initiated during Collor's presidency was substantially extended under Cardoso, to include companies owned by state and municipal administrations, as well as those in the hands of the federal government. During Cardoso's first term (1994-98) around US$ 90 billion were raised from the sale of SOEs. Foreign capital was responsible for around one-half of the acquisitions. This was of large importance during 1997 and 1998 when obtaining fresh loans was becoming increasingly difficult as international credit markets tightened again. These two years witnessed the largest privatisations, including Brazilian Tele-communications (Telebras), Vale do Rio Doce (one of the world's largest mining enterprises), and part of the oil industry (including 45% of Petrobras).[18]

The privatisation of state-owned utilities and banks not only enlarged capital inflows. It also eliminated several of the forms of land rent appropriation by industrial capital previously in force. Privatised companies would no longer sell their output at subsidised prices and purchase their equipment at inflated values or sustain an oversized workforce. On the contrary, privatisation increased the demand for land rent as newly privatised firms began to appropriate a portion of it. Not only were charges of public services substantially increased in real terms as companies entered the privatisation process, but also the legal framework that began to regulate their operations moved substantially in favour of their new private owners.[19] In terms of the process of capital accumulation through the appropriation of land rent, the privatisation programme was thus double edged. On the one hand, and mainly in the short run, it generated resources that complemented the land rent and the inflow of interest-bearing capital in sustaining the profitability of local industrial capital. On the other hand, the programme increased competition for these resources.

Between 1994 and 1998, the land rent appropriated by social sectors other than landowners was equalled to approximately 8.25% of all surpluses produced in the

[16] See Carneiro (2002: 396).
[17] See Novelli and Galvao (2001-2: 11, 22).
[18] See Baer and Coes (2001: 612); Castelar Pinhero (2002).
[19] See Amann and Baer (2001: 648). For the evolution of public utility prices, see graph C.40.

Brazilian economy, and the portion appropriated by industrial capital accounted to around 8.5% of its profits. During the same period, the net inflow of credit amounted to 4.7% of all surpluses available for appropriation in the local economy.[20] The funds collected through the privatisation programme equalled approximately a further 6% of those surpluses; one-half of which were paid by foreign investors and thus constituted a complement to the net inflow of foreign loans.[21]

Nevertheless, though enlarged relative to the 1980s, the land rent and its complementary sources of extraordinary social wealth remained incapable of sustaining the pre-1980 scale of accumulation in the highly diversified industrial sector, not even when complemented with a third source of extra profits, namely, the payment of wages well below levels of the late 1970s and the value of labour-power. Large increases in labour productivity in the industrially advanced countries associated with the spread of robotisation and computerisation, and the emergence of new sources of cheap labour-power in Asia, increased the requirement of land rent in Brazil to sustain the relatively low level of labour productivity prevailing in the manufacturing sector. Furthermore, now capitals invested in public utilities began to appropriate a portion of land rent. In the industrial and service sectors, the appropriation of land rent would now be mainly done by the largest individual firms.[22] Tariff and tax structures (as well as the legal frameworks regulating the privatized sector) changed in order to channel the land rent directly to these capitals. As a result, many nationally-owned small firms would disappear, a process that increased capital centralisation and internationalisation.[23]

In effect, after the 'radical' 1990-94 liberalisation experiment, market protection was somehow reinstated. The inflow of imports purchased with an overvalued currency had been hurting the valorisation capacities of industrial capital and, as was seen above for the case of the automobile industry, had prompted strong lobbies (by capital and labour) for the re-establishment of some kind of market protection.[24] From 1995 onwards, market protection was strengthened for some parts of the industrial sector, notably the final stages of the different 'value chains', while it was eliminated for

[20] See graph 2.13 in Chapter 2 and table C.31.
[21] See BNDES (2011) on the country origin of foreign buyers of privatised companies.
[22] "In 1995 about two-thirds of FDI stock in Brazil was in the industrial sector and one-third in services. In 2000, the shares had been reversed." Abreu (2008c: 450).
[23] See Carneiro (2002: 355-40) on the increased internalisation of capital's ownership during the 1990s.
[24] In August 1994, the Brazilian government reduced tariffs on imports further. Average and maximum rates of effective protection to the industrial sector then fell to 15.4% and 44.6%, respectively. See Carneiro (2002: 314). The exchange rate was then 90% overvalued, implying a subsidy to imports equivalent to 45% of the price.

others. The former sectors included the assembly of automobiles, white-goods, consumer electronics and some parts of the capital goods industries.[25] Industrial capital in these sectors and in the privatised public utilities, which enjoyed a 'natural' market protection, became the main partners of landowners in the appropriation of land rent. Specific subsidies, tax exemptions and lax regulatory frameworks were added to the combination of an overvalued currency and market protection as forms of appropriation. In contrast to previous periods, the appropriation of land rent by industrial capital became sector-specific.

While market protection was eliminated for some industrial branches, commercial integration with neighbouring countries, timidly initiated during the late 1980s, accelerated through the creation of the Common Market of the South (Mercosur). This has liberalised regional trade, while setting a common external tariff, thus in practice enlarging the 'domestic' markets for those firms that have remained protected from foreign competition.[26] The experience, however, has not been uniform. While some sector of regional trade have been fully liberalised, others, notably automobile and consumer electronics, have been strictly regulated according to the necessities of MNCs in member countries. Industrial exports beyond regional markets remained limited to semi-processed materials or, generally, possible only with state support.

During the 1990s, the Brazilian economy underwent a strong process of deindustrialisation as the land rent became incapable of sustaining the process of accumulation of large portions of industrial capital.[27] In general terms, the smaller the scale of production relatively to world markets norms, or the more complex the production process, the more the capital involved suffered from the slow growth of the land rent, *relatively* to its requirement, and the consequent dismantling of policies mediating its appropriation. For instance, while producers of electronics components almost completely disappeared during this period, assemblers of electronic goods using them (e.g. cellular phones) remained in production while their markets expanded to include Brazil's regional neighbours.[28] As subsidies and protection were withdrawn, the shipbuilding industry, in its turn, stopped assembling ships altogether by the mid-1990s,

[25] See Abreu (2008c: 450).
[26] See Baer et al. (2002). This has been termed trade 'diversion' rather than 'creation'. See Yeats (1998). See also Krugman and Obstfeld (2006: 232-5) with special reference to the Mercosur.
[27] On the deindustrialisation trend, see IEDI (2007); Oreiro and Feijo (2010).
[28] For an analysis of sectorial policy, see Bonelli and Veiga (2003).

and would only recover in the following decade.[29] The Brazilian aerospace industry, usually vaunted as a successful case emerging from the 1990s liberalisation reforms,[30] has actually specialised in assembling imported parts, few of them designed or manufactured locally.[31] Moreover, as many claims presented at the World Trade Organisation testify, the international competitiveness of the Brazilian aerospace industry is partly explained by the subsidised loans granted by the BNDES to foreign clients.[32] On the other hand, the sharp overvaluation of the exchange rate strongly subsidised the importation of machinery and equipment, giving place, together with the considerable elimination of small firms, to an important increase in average productivity of labour in the industrial sector. This process partly limited capital's need for land rent to valorise normally.[33]

The reduction of the magnitude of the land rent relative to its requirement by industrial capital also manifested itself in the dismantling or restraining of other forms under which its transference had been realised, such as the employment and remuneration conditions of the public sector workforce. As part of its effort to cut the public sector deficit, the Cardoso government fostered the downsizing of the state apparatus and the restructuring of the social security system. For that purpose, the government took then advantage of an on-going ideological campaign mounted to emphasise the disparities between wages and retirement plans of public sector officials and those of workers in the private sector.[34]

Under these weakened bases, economic growth, though accelerated, was relatively poor for Brazilian standards. GDP per capita growth averaged only 1.7% between 1995 and 1998, most of it taking place during the first eighteen months of life of the Real Plan.[35] The production of value-added in the industrial sector contracted sharply during that period. The sector's participation in GDP fell further from 26% in 1993 to 14% in 1998. Investment rates were low even when compared with those

[29] During the same period, the Korean shipbuilding industry, which emerged much later and was until the mid-1980s less advanced than the Brazilian, would become the largest in the world. Unlike its Korean counterpart, the Brazilian shipbuilding industry had always been internationally uncompetitive and only survived through state subsidies and market protection. See Ferraz (1986); Pires Jr (1999).
[30] See e.g. Goldstein (2002).
[31] See Figuereido et al. (2008).
[32] See Doh (2003). A large part of BNDES funding is made of social security funds. The return on these funds has been governed by the Long-term Interest Rate which not only has consistently and largely been below the market interest rates but in some year, notably in 1994, was even negative.
[33] See graphs 4.6 and 4.7 for the evolution of labour productivity relative to the USA.
[34] See Novelli and Galvao (2001-2: 23-29).
[35] See graph 2.3 in Chapter 2. See also Bresser Pereira (2003), an ex-minister of the Cardoso administration, commenting on the weak growth performance during the Plan Real.

prevailing during the 1980s, let alone with those of the second part of the 1970s. They averaged 17.4% as large masses of industrial capital disappeared and recently privatised public utilities, except for the telecommunications industry which was undergoing a rapid process of technological change, underinvested.[36]

The disappearance of large segments of the industrial sector, notably those where small firms prevailed, resulted in the increased precariousness of the Brazilian labour market. Between 1989 and 1999, wage-labour employment fell by 3.2 million, of which 2 million job losses were in the industrial sector. By 1998, 1.675 million jobs had disappeared in the formal part of the manufacturing sector while the level of informality increased from 34% in 1989 to 41% in 1998.[37] Employment in the tertiary, mostly informal, sector, on the contrary, grew, notably in domestic services which increased from 8.5% to 10% of the urban working population between 1980 and 2000. Most of this growth took place during the 1990s.[38] The total ('open' plus 'hidden') unemployment rate in the metropolitan area of Sao Paulo, Brazil's industrial heartland, increased from 8.7% in 1989 to 19.3% in 1999. This evolution of employment weakened labour's bargaining power and resulted in sharp real wage contractions. After dropping 37% between the peak of 1986 and 1991, real average wages in manufacturing fell a further 20% during 1992-98.[39] This process expanded the mass of extraordinary profits arising from the payment of the local labour-force below its value. Indeed, labour market informality and social marginality increased in Brazil despite the wide-reaching social rights incorporated in the 1988 Constitution.[40] Social policies became increasingly concentrated on providing 'safety nets' for those falling out of the labour markets or not being absorbed by them altogether.[41]

In effect, during the 1990s, state expenditures on social security increased in real per capita terms while expenditures in such universal 'public services' as healthcare,

[36] See Table C.39 in Appendix C for the evolution of investments rates. See also Amann and Baer (2002: 950-51); Carneiro (2002: 350); Pochmann (2008: 55-6).
[37] See Amann and Baer (2002: 955); Oliveira (2006: 11) See also Novelli and Galvao (2001-2: 26-7); Pochmann (2008: 59-79) on the increased precariousness of the labour market during the 1990s.
[38] See Pochmann (2008: 67-9).
[39] See graph 4.10 in Chapter 4.
[40] See Pochmann et al. (2003); Valle Silva (2008: 512-5). For instance, between 1981 and 1995, the homicides rate for men between 15 and 24 years old increased from 54.4 to 128.4 and 148.9 to 275.3 per 100,000 inhabitants in Sao Paulo and Rio de Janeiro, respectively. See Viegas Andrade and Barros Lisboa (2000). Violent and non-violent crime rates continued increasing thereafter. See Ghiringhelli de Azevedo (2006).
[41] See Hall (2006); Hunter and Sugiyana (2009) on the evolution of social policies.

education, culture and housing followed an opposite trend.[42] The post-1994-98 expansion of state expenditures on most of these services produced only a partial recovery from the sharp cuts of 1990-93. They were thus unable to stop the acceleration of the process of differentiation in the conditions of reproduction of the Brazilian working-class. Furthermore, following the dictums of the 1988 Constitution, expenditures on universal social services became increasingly concentrated in the hands of sub-national administrative levels (i.e. states and municipalities), while social security and assistance (the now extended 'safety' nets) came to be undertaken almost exclusively by the Federal government. As the resource gap between regions widened, the unintended result of the decentralisation process was to increase, rather than reduce, interregional differentiations.[43]

Despite its success in ending hyperinflation and restoring growth, the contradictions of the Plan Real would become evident as soon as its weak bases began to erode. Its demise, however, would not be straightforward. As many times before, capital and its political representative, the state, attempted to postpone its abandonment until it was no longer possible to sustain the Plan. By 1997, international credit markets were, again, becoming increasingly tight. In the USA, the real interest rate on Fed Funds and on loans for large firms had increased three percentage points between 1993 and 1997, jumping respectively from 0.1% to 3.1% and 3% to 6.1%. Both would peak in 1998 at 3.72 and 6.8%, respectively, and began to fall thereafter steadily until bottoming in 2004.[44] A similar trend was observed in Europe. As interest-bearing capital, especially the so-called 'hot money', moved to the industrially advanced countries to take advantage of higher interest rates there, developing country economies began to find restrictions to access to new loans at affordable conditions.[45] Nevertheless, unlike its East Asian counterparts, notably Korea, the Brazilian economy still had access to foreign loans needed to sustain the overvaluation of the Real, though at a significantly higher cost.[46] Premiums on Brazilian public debt, *vis-à-vis* its US equivalent, increased from about 4% in real terms in 1996 to around 14% in 1997 as

[42] See Novelli and Galvao (2001-2: 27-8); Lesbaupin and Mineiro (2002: 39-51).
[43] See Rodríguez-Pose and Gill (2003). See also Pochmann et al. (2003) on the increased regional disparities.
[44] See graph 1.2 in Chapter 1.
[45] See Wade (1998: 699); Carneiro (2002: 252-3, 288) for this analysis with particular focus on the Korean and Brazilian experiences, respectively.
[46] See graph 1.1 in Chapter 1.

Brazil found it increasingly difficult to borrow overseas.[47] As financial conditions tightened, the Cardoso administration put forward another programme of fiscal adjustment, the so-called Package 51, implementing across-the-board cuts in public sector expenditures and increases in taxes. Brazil managed to resist a run on its currency. It could not avoid going into recession.[48]

In 1998, however, the story would be radically different. International interest rates peaked by the middle of the year. The increased cost and scarcity of credit was beginning to affect global economic activity and, consequently, the prices of raw materials. Exporters of primary goods began to feel the impact of world economy developments in the same way as exporters of 'industrial commodities' had done the previous year. Brazil was no exception. The still substantial inflow of long-term debt, attracted at an unsustainably high cost, barely compensated for the massive outflow of short-term capital.[49] The difference between both, however, was not enough to compensate for the large current account deficit, in turn worsened by the prevailing exchange rate overvaluation. Central Bank international reserves fell sharply, even when privatisation funds peaked, increasing the amount of foreign exchange that could be used to support the overvaluation of the Real. Through 1998, the considerable economic growth of the previous year (3.1%) turned into a contraction (-1.1%).[50] Job losses in the industrial sector expanded and, in order to make them and the further fall in real wages possible, the Cardoso administration accelerated the programme of labour market 'reform' (i.e. flexibilisation).[51]

By the end of the year, the situation became unbearable, even when the country had received massive financial and political support from an IMF-led consortium.[52] Governments in such large states as Minas Gerais, Rio de Janeiro and Rio Grande do Sul declared a moratorium on the service of their debts with the Federal administration, weakening the fiscal stance of the state further.[53] As soon incumbent president Cardoso had been re-elected, the government pursued, against the will of the IMF who thought it would trigger a region-wide currency and banking crisis, the unpopular task of

[47] See table C.34 in Appendix C. Real annual interest rates reached 20% in early 1997 and fell to around 12.5% by the end of the year. See also Lopes (2003: 51); Abreu (2008c: 437).
[48] See Lopes (2003: 43-53) for a complete insightful account of the evolution of monetary policy during the 1997-98 crisis. See also Novelli and Galvao (2001-2: 15).
[49] In late 1998, real interest rates on the Brazilian public debt sky-rocketed to 35% Lopes (2003: 51).
[50] See graph 4.4 in Chapter 4.
[51] See Novelli and Galvao (2001-2: 24-5); Marshall (2004).
[52] The 'contribution' amounted to around US$ 41 billion. See Novelli and Galvao (2001-2: 16).
[53] See Amann and Baer (2000: 1817); Abreu (2008c: 438).

devaluing the Real.[54] After four and a half years, the 'exchange rate targeting' regime was replaced by one 'targeting' the inflation rate, as part of a new 'understanding' with the Fund. There is no doubt that Cardoso's re-election was helped by the timing of the devaluation.[55] It is doubtful, however, that his main rival, PT's Party leader Lula Da Silva allied with Goulart's brother-in-law Brizola, would have been able to administer the further wage contraction that would result from the deterioration of the Brazilian economic conditions.[56]

Cardoso's second term in office (from January 1999 to December 2002) was concurrent with a period of relatively slow global economic growth. In 1999, net interest-bearing capital outflows from Brazil became significant, for the first time since the early 1990s. Part of these outflows was financed with a portion of the foreign exchange reserves accumulated during the previous, 'credit-abundant' years. Most of the rest was paid with a portion of the value of labour-power and of the *normal* surpluses (surplus value) produced in the economy. FDI in the industrial sector increased substantially as foreign capital took advantage of the reduction in the prices of Brazilian industrial assets resulting from the sharp devaluation of the exchange rate and the ensuing domestic recession. On the other hand, the trade and current account deficits decreased substantially as the end of the overvaluation of the Brazilian currency helped expand exports, while reducing imports and profits remittances.[57]

Interestingly, economic growth during Cardoso's second term in office was slightly stronger than during his first four years in office. Brazilian GDP grew 3.3% during 1995-98 and 3.4% between 1999 and 2002.[58] This was most surprising as international prices of raw materials kept falling until 2002, one year after the US economy had bottomed out, and outflows of interest-bearing capital were substantial as global credit markets tightened markedly for developing economies. The combined mass of extraordinary social wealth in the form of land rent and net loan inflows available for appropriation then became negative.[59]

How could, then, the Brazilian economy grow without these sources of extraordinary wealth complementing the surplus value normally produced? Was it that

[54] See Lopes (2003); Amann and Baer (2000: 1817-8); Abreu (2008c: 439-40).
[55] Exchange rate devaluations have always been unpopular in Brazil because they result in increases in tradable goods prices, which include food, and therefore in real wage falls.
[56] See Bethell and Nicolau (2008: 263-4) on the 1998 general elections.
[57] See tables C.16, C.37 and C.38 in Appendix C.
[58] See graph 4.4 in Chapter 4.
[59] See graph 2.17 in Chapter 2.

the 'structural' transformation of the economy allegedly undertaken through the 1990s was finally paying off and the industrial sector had finally become internationally competitive? Or, was it that the 'model of accumulation' implemented during the 1990s was being partly or fully reversed through the flexibilisation of foreign exchange market and the adoption of a tight fiscal policy? Far from these; the 1999-2003 growth process resulted from, and reproduced, the specifically limited, essentially unchanged type of capital accumulation that had always characterised the Brazilian economy. First, industrial real wages had fallen significantly during the second part of the 1990s and dropped a further 5.2% per year average during 1999-2003, thus partly compensating for the contraction of the land rent and helping sustain capital's profitability. In 2003, the year before they began to recover, average real wages in manufacturing were already 24% below their 1998 level and only 37.5% of their 1986 peak value.[60] Secondly, there was installed capacity in the industrial sector, largely financed during the period of relatively abundant land rent and large interest-bearing capital inflows (i.e. 1994-98). Thirdly, the exchange rate was on its parity during 1999-2000 and became circumstantially undervalued (15% average) in 2001-02. During these periods (i.e. until early 2002), Argentina's currency, the largest export market for Brazilian durable-consumer and capital goods, was kept strongly overvalued.[61] Despite Argentina's economic recession, this helped expand the market for Brazilian industrial goods, notably of those of higher value-added, and partly compensated the contraction of domestic demand.[62] Indeed, in 2003, economic growth in Brazil stalled as the Argentine currency was massively devalued. Fourthly, the inflow of FDI searching for cheap industrial and public sector assets in Brazil helped sustain the economy's import capacity (and expand the scale of accumulation).[63]

Through 2002, the cycle of the global process of capital accumulation began to turn around. Stimulated by the prevailing low interest rates, credit markets in the industrially advanced economies were finally regaining liquidity. As global demand accelerated, international commodity prices also started to recover. Though slowly, the

[60] See graph 4.10 in Chapter 4 for the evolution of real wages in manufacturing. DIEESE estimates that real wages in Sao Paulo's industrial sector in 2003 were 70% and 47% of the 1998 and 1986 values, respectively.
[61] For the movements of the Argentine currency around its purchasing power capacity, see Iñigo Carrera (2008).
[62] See Amann and Baer (2000: 1818).
[63] See table C.37 in Appendix C for the evolution of FDI during 1999-2002. See also Abreu (2008c: 441) on the performance of Brazil's external accounts in 2000.

Brazilian land rent thus began to expand in 2003-04. Inflows of loan capital, however, would only exceed outflows, resulting from external debts servicing, in 2006, when the global financial markets were already booming for some time.[64]

In late 2002, when the presidential election was held, the Brazilian economy was confronting another currency crisis.[65] Though the situation would begin to change in the following years, the availability of credit for developing countries was still at its lowest levels in many years. As in 1994 and 1999, the candidates of the incumbent PSDB and the PT contended for the presidency. This time, however, the context was markedly different. Cardoso's administration was highly compromised by the continuing fiscal adjustment programmes, the fall in real wages and the emerging currency crisis, aggravated by the sharp contraction of the Argentinian economy. Moreover, Cardoso's party, the PSDB, could hardly be transformed into a political organisation that would administer the post-2002 strong recovery of the land rent, even if led by its left wing. As always, the political forms of the process of capital accumulation would change in order to express and mediate its economic transformations. In the elections held in late 2002, Lula Da Silva was elected in his fourth attempt to win the presidency, defeating PSDB's candidate, ex-dependency theory economist, Jose Serra.[66] Corporate media support was instrumental for Lula's victory.[67]

Lula's electoral manifesto, however, was far less radical than the one the PT defended when it had been founded in 1980, at the highest point of the Brazilian process of capital accumulation. Indeed, when in the final stages of the campaign, Lula was blackmailed by the incumbent authorities, the mainstream press and the IMF to reassert his neoliberal credentials, he not only radically softened his stance on economic policy but also wrote a Letter to the Brazilian People claiming he would honour Brazil's external debt commitments and continue with the economic legacy left by the Cardoso administration.[68] Lula also distanced himself from the various social movements and 'radical' left groups that had formed and supported the PT, such as the Landless Workers' Movement, which had grown considerably from the 1970s. The PT leadership

[64] See graph 2.13 in Chapter 2.
[65] See Abreu (2008c: 444-47) on the 2002 'currency' crisis. This author, however, partly attributes the turmoil to the prospects of a PT victory in the upcoming elections.
[66] See Spanakos and Renno (2006: 15-20); Bethell and Nicolau (2008: 274-5).
[67] See Oliveira (2006: 12).
[68] Abreu (2008c: 448-9) suggests that Lula's change of opinion regarding an IMF bail-out involved 'subtle games' as the one that made him "feel constrained to publicly pledge to honour the general terms of the agreement […]."

also distanced himself from the trade union movement.[69] Moreover, to reassure the business sector of his intentions, Lula somehow recreated the populist alliance of the 1950s by picking José Alencar as deputy, a well-known businessman, ex-Honorary President of the PFL and current member of the Brazilian Republican Party related to the rapidly growing Evangelic Church.[70] The fact that Lula's first economic team, including the incumbent president of the Central Bank, was formed by openly neoliberal economists shows, however, that his stance was far from a simple electoral trick.[71]

In practice, the new Lula administration fulfilled its latest campaign promises. With the land rent only slowly recovering and its use diverted to service the public external debt, the adjustment of the public sector budget went further than during Cardoso's second term. Foreign lenders were not willing fully to finance the service of Brazil's external liabilities, most of it indirectly falling on the state through its domestic borrowing from economic agents issuing debt in international markets. Primary surpluses had to be expanded in order to pay an increasingly larger portion of the interest on the massive public debt. The Brazilian state was then paying one of the world's largest interest rate premiums (11.2% average in real terms above the cost of the US government debt during 2002-05) and was still unable to fully finance debt servicing requirements.[72]

From 2004 onwards, nevertheless, Brazilian economic growth accelerated to levels not experienced for a long period of time. During 2004-07, the economy grew at an average of 5.7% (4.2% in per capita terms).[73] The strong recovery of international commodity prices, together with productivity and output increases in the agrarian sector, yielded a solid expansion of the land rent available for appropriation, notably after 2005. As many times before, the currency became increasingly overvalued to allow capital to appropriate directly a portion of the enlarged land rent. Portraying it as a policy to 'target' (i.e. control) inflation, itself resulting from its own reserve accumulation strategy and the increasingly expansionary fiscal and credit policies, the Central Bank kept interest rates at high levels, even when international liquidity was

[69] On the changes in the Brazilian rural sector, including the fall in employment, see Valle Silva (2008: 485-7).
[70] On PT's 'strategic' change and Lula's electoral victory, see Paniza (2003); Spanakos and Renno (2006: 16-7); Bethell and Nicolau (2008: 275-77); Abreu (2008c: 446-9).
[71] See Oliveira (2006: 12-3).
[72] See Saad-Filho and Morais (2005: 19-20); Abreu (2008c: 452-3) on the orthodox fiscal and monetary policies implemented by the first economic team of Lula's government.
[73] See graphs 4.2 and 4.4 in Chapter 4.

rising and global interest rates falling.[74] As interest rates set by the Central Bank to control inflation also affect directly the return on public debt bonds, this policy had attracted large sums of 'hot money'.[75] The artificially increased supply of foreign exchange, resulting from the massive inflows of capital to purchase public sector debt, thus depressed the price of foreign exchange in the domestic market, despite the prevailing 'free floating' exchange rate regime. In 2007, the degree of overvaluation of the currency reached 70% and helped channel a portion of the expanding land rent equivalent to 6% of GDP (approximately 12% all surpluses available for appropriation in the national economy) to social subjects other than landowners, notably industrial capital.[76]

The expansion of land rent resulted in the increase of state resources. First, a portion of land rent was, in a first instance, appropriated by the state through import taxes paid with an increasingly overvalued currency. Secondly, the expansion of economic activity allowed by the increased land rent (appropriated through the combination of an overvalued currency and selective market protection) enlarged fiscal revenues in general. Moreover, the expansion of Brazilian exports (resulting from increases in international commodity prices and primary sector productions) improved the creditworthiness of the country's public debt and allowed Brazil to take advantage of the increased liquidity in international credit markets. Together, these new conditions needed another change in the direction of public policies. The conservative first economic team was then partly replaced by a more 'developmentalist' group of policy-makers. Finance Minister Antonio Palocci, from the PT's right-wing, was replaced by ex-Marxist economist Guido Mantega, while ex-guerrilla member Dilma Rousseff was appointed Chief of Staff. Nevertheless, as the commitment to sustain a 'strong' and 'stable' currency, the euphemisms usually used in Brazil to defend the overvaluation of the currency, remained state policy. Ex-Bank Boston president and PSDB member Henrique Meirelles continued in his position as head of the Central Bank.[77]

[74] See table C.34 in Appendix C.

[75] According to Arestis et al. (2007), "Brazil is the only country in the world where the central bank determines directly the interest rate that remunerates public debt and uses the same rate as the operational target for the reserves of the banking sector."

[76] See graphs 2.1 and 2.3 in Chapter 2 for the evolution of exchange rate overvaluation and the portion of land rent appropriated by others than landowners, respectively.

[77] See Morais and Saad-Filho (2011) on the limited policy shift during Lula's second term in office. See Abreu (2008c: 453-4) on the relaxation of monetary policy in 2004. See Oliveira (2006: 10) on policy continuity.

Economic and social policies became thus increasingly expansionist and began to regain some of their features during the pre-neoliberal years. Interest rates on state bank loans were cut while their supply expanded. Economic growth proceeded strongly while public sector expenditures increased, including those in infrastructure and social welfare.[78] The latter were not only needed to compensate for some of the negative consequences of the previous decade 'market reforms' on the conditions of reproduction of the labour-force, but also to create or reinforce the political conditions needed for the normal reproduction of the process of capital accumulation under its new economic forms. These new social policies also contributed to enlarge the domestic markets for consumer goods. Foreign policies also recovered some of their past characteristics. This not only came about through a new reaffirmation of Brazil's international leadership and 'independent' foreign policy, but also through its alliance with Mercosur partners in rejecting US free trade projects for the region.[79] As many times before, the former was no more than a political (and ideological) form of realisation of the expansion of the land rent and, thus, the limited process of capital accumulation in Brazil. The latter was necessary to sustain and reinforced the protection of the markets where capital realised the appropriation of land rent.[80] Manufacturing valued-added expanded rapidly, as the increasing land rent permitted the transfer of resources to industry while also promoting market growth.[81] Employment growth accelerated and real industrial wages began to increase strongly in 2004, while minimum wages accelerated their post-2000 recovery.[82] Unlike the 1990s, economic growth now produced noticeable improvements in the conditions of reproduction of unskilled manual workers and therefore in the reduction of income inequality and poverty.[83] Furthermore, the recovery of the mining rent, expanding due to the increase in oil production, gave place, notably through Vale's (ex-Vale do Rio Doce) and Petrobras' purchases, to the re-emergence of some capital goods and heavy engineering sectors, like the shipbuilding industry, that had collapsed completely during the 1990s.[84] In 2007, at the peak of the expansion of the land rent, the

[78] See Morais and Saad-Filho (2011: 34-6) on economic and social policies. See Hall (2008); Hunter and Borges Sugiyana (2009: 47) on social policies specifically.
[79] See Morais and Saad-Filho (2011: 37) on Brazil's foreign policies.
[80] See Grinberg (2010).
[81] See graph 4.2 in Chapter 4.
[82] See tables C.4 and C.6.
[83] See Morais and Saad-Filho (2011: 36).
[84] See Paschoalin (2010). The expanded Venezuelan land rent has also contributed, through acquisitions made by Petróleos de Venezuela Sociedad Anónima (PDVSA), to this revival.

government launched the Growth Acceleration Programme to improve, much like the NDP II before it, the provision of infrastructure.[85]

As was the case during the 1970s commodities boom, the strong post-2003 expansion of the land rent and the consequent improvement in the performance of the Brazilian economy created the impression that, after the 'fine tuning' of the 1990s, Brazil is poised finally to fulfil all its untapped potential. This impression, however, might be misleading. This strong growth did not result from the 'reforms' introduced during Cardoso's administration and reinforced during Lula's, as argued by some authors,[86] or from the 'corrections' (i.e. tighter fiscal policy and flexible exchange rates) introduced during the Lula presidency to the course set during Cardoso's, as other authors claimed.[87] Despite all the changes in public policies introduced since the early 1990s and the impressive 2004-08 growth performance, the underlying structure of the economy was not transformed. Capital has still accumulated in Brazil mainly producing goods or services for protected domestic (or regional) markets. Capital has still compensated its higher (by international norms) production costs, resulting from the low local level of labour productivity, by appropriating a portion of land rent, complemented with inflows of interest-bearing capital and the payment of labour-power below its value. Moreover, though significantly enlarged after 2006, the land rent has been enough to support only a relatively mild process of reindustrialisation. In 2008, after five years of fast industrial expansion, manufacturing value-added and wages were, in real terms, still around 53% of the 1986 values. Moreover, by the mid-2000s, Brazilian GDP and GDP per capita were only 5.5% and 9% of US levels, respectively. They had been 8.7% and 17% in 1980 before the land rent available for appropriation became unable to sustain an extended ISI process.[88]

Korea: The era of 'neoliberal globalisation' (1993-2005)

In 1993, when Kim Young-Sam became president, the Korean economy was slowly coming out of the so-called 'growth recession'. Like most new administrations before it, the Kim government commenced its term with a purge, allegedly to combat endemic and institutionally ingrained corruption. For Kim this was particularly

[85] See Schaller (2008).
[86] See e.g. Roett (2010); Edwards (2010).
[87] See e.g. Barros de Castro (2008).
[88] See graph 4.4 in Chapter 4.

necessary to distance himself from Roh's party and regime, with whom he had joined forces to win the election. Kim's electoral partners were among, at least, 3,000 government officials who were removed and, eventually, judged on corruption related charges. Ex-presidents, Generals Chun and Roh were amongst those receiving the harshest punishments.[89] As the previous administration, the new one would also launch a policy initiative to break down the *chaebol*s and force them to specialise in their core activities. As before, this would yield only limited success.[90]

By 1993, the global economy was already in its second year of accelerating growth after the business cycle bottomed out during the 1991 US recession. As with the expansion of the period 1983-88, the recovery was being fuelled by a rapid expansion of credit supply at low interest rates. Unlike in the 1980s, however, the expansion of global credit supply was so large during the 1990s that loans were becoming available, in significant amounts, to 'developing' countries, Korea among them.[91]

As soon it took power, the new administration announced the '100-Days New Economic Reform Package', including expansionary fiscal and monetary measures to 'revitalise' the local economy. In tune with the global trend, interest rates were lowered to boost private sector investments while planned public sector investment programmes were brought forward.[92] In addition, under the argument that it was necessary to boost economic recovery, the Kim government continued with the process of wage containment initiated by its predecessor. A state-orchestrated campaign of 'pain sharing' was mounted while a wage freeze was imposed on public sector employees and private companies were 'encouraged' to follow suit.[93]

The new global expansion of credit supply required the modification of several aspects of Korea's financial sector institutions if domestic industrial capital was to take full advantage of it. The increased credit ratings of Korean industrial firms and commercial banks meant that the private sector began to regard government involvement in their foreign borrowing transactions as a burden rather than a necessity as had been the case before when they simply had not had the creditworthiness to borrow in international capital markets without government guarantees.[94] Moreover, as

[89] See Clifford (1998: 332-3).
[90] See Haggard and Mo (2000: 202); Shin (2003: 140-1); Kim (2003: 67-8).
[91] See Kaminsky (2005) for the return of private capital flows to developing country economies during the 1990s.
[92] See Haggard and Mo (2000: 202).
[93] See Shin (2003: 143).
[94] See Chang et al. (1999: 736).

an expression of the high liquidity of international credit markets, the US government, the political representative of US capital, was stepping up its pressure on Korea to lift restrictions on financial inflows.[95] In tune with this new global financial 'order', in July 1993, the Kim government announced the Five-year Plan, a Blueprint for Financial Liberalisation and Internationalisation. Despite much fanfare, this Plan was, to a large extent, nothing other than the normal continuation of the liberalisation policies implemented since the early 1980s and speeded up since 1991, now adorned with a 'globalizing' ideological justification.[96]

First, the capital account of the balance-of-payments was partially opened and short-term borrowing in foreign currencies by industrial capital (either directly or indirectly through Korean banks) was now openly permitted without state approval. The issuing of long-term debt in foreign currency, however, was still highly restricted to 'control' foreign capital inflows. This two-speed opening would stimulate a massive increase in short-term borrowing to finance long-term projects and thus create a maturation mismatch between assets and liabilities. Effectively, the share of short-term debt (i.e. loans with maturity of less than a year) in total net external debt rose from 26% in 1993 to 57% at the end of 1996.[97]

Secondly, domestic financial markets were further liberalized. The Plan aimed at additional interest rate deregulation, increasing the managerial independence of private banks and lifting entry barriers to the financial sector.[98] In practice, however, credit markets were not fully decontrolled immediately. Though all lending rates on loans made by banks and NBFIs were completely freed by the end of 1993, those on the so-called policy loans, which still accounted for around 25% of total bank loans in 1993, remained regulated. The latter and those paid to demand deposits were planned to be fully liberalized only in 1997. The same would happen with ceilings and targets related to loans allocations to 'priority' industrial sectors. Furthermore, allocations of financial resources to small and medium-sized firms were, in principle, ensured by new regulations.[99]

Finally, the Plan was complemented with the Special Law for Deregulation Concerning Business Activities, passed to reduce the involvement of the state in the

[95] See Chang et al. (1999: 738).
[96] See Graham (2003: 90); Shin (2003: 139, 141-2).
[97] See Hahm (2003: 91). On capital account reforms, see also Chang et al. (1998: 739); Shin (2003: 173); Noland (2000: 203).
[98] See Chang et al. (1998: 736-7) for an overview of financial sector liberalisation during the 1990s.
[99] See Shin (2005: 145-6).

economy. This was no longer necessary to support actively the process of accumulation of private capital in most segments of the industrial sector. While the Roh government had shown a mixed attitude towards industrial policy, the Kim administration was decisively opposed to it. Nevertheless, in the rapidly emerging high-technology industries, state support to R&D efforts and technology acquisition remained in effect.[100] This change in the direction of economic policies found its expression in a new institutional reshuffling. The EPB, the symbol of Korean industrial planning, was merged with the Ministry of Finance to form the Ministry of Finance and Economics (MoFE). The status of the hitherto largely decorative Korean Fair Trade Commission (KFTC) was upgraded. Through the application of the Korea Antimonopoly and Fair Trade Act (KAA), originally passed in 1980 but never fully enforced, the KFTC could potentially block the entrance of the *chaebol* into specific sectors if it deemed that this would 'harm' competition.[101]

By 1994, with growing global consumption pulling the demand for its industrial exports, and increasing credit supply in the international markets financing capital formation, the Korean economy entered into a new period of strong growth and high investments rates. Exports of consumer electronics, memory chips, low-end automobiles and ships accelerated, helped by the rapid increases in labour productivity in these sectors and the appreciation of the Japanese Yen. Both improved the price competitiveness of Korean firms' industrial exports *vis-à-vis* their main overseas competitors. Under these conditions, overseas sales of manufactured goods grew by a massive 14.7% and 28.5% in real terms in 1994 and 1995, respectively.[102] Inflows of foreign interest-bearing capital also accelerated sharply as global financial markets boomed and liquidity increased. Net credit inflows thus increased from US$ 1 billion in 1993 to US$ 23 billion in 1994 and US$ 11 billion in 1995. Most of these resources were directly captured by the private sector with no state involvement in the matter, and were used to finance capital formation in leading export industries, such as automobiles, semiconductors, shipbuilding and steel.[103]

In this favourable context, industrial value-added grew 13% annual average during 1994-95. Pulled by this impressive performance, Korean GDP grew at an

[100] See Chang et al. (1998: 740).
[101] See Graham (2003: 92); Shin (2003: 144-5); Pirie (2008: 96). On the weak enforcement of the KAA during the 1980s, see Graham (2003: 56-9).
[102] See table C.16 in Appendix C.
[103] See Graham (2003: 94) on exports and investment expansion. See Haggard and Ma (2000: 200-2); Noland (2000: 195-6) on foreign capital inflows financing domestic investments industrial facilities.

average rate of 11%, three and one-half percentage points above the level of 1992-93. The demand for labour-power remained strong and average real wages in the industrial sector increased 11% per year average.[104] Furthermore, to accelerate the upgrading of industrial worker skills, required for the development of increasingly complex productions, and to conserve skills when work is circumstantially interrupted, in July 1995, the Korean state implemented the Employment Insurance Programme (EIP). The EIP would fund retraining and skills acquisition as well as provide income for the unemployed. Nevertheless, though unique among East Asian NICs, the Korean programme of unemployment benefits was hardly universal. It only covered workers in medium- and large-size companies and thus, in practice, helped reproduce the dual structure of the labour market. Furthermore, as the rest of the social security system, based on contributions, unemployment and retraining benefit was proportional to previous income, and incorporated very strict entitlement rules. Vocational training programmes also received a great impulse from the Kim administration while higher education enrolment expanded strongly despite limited state support.[105]

Despite these impressive results, which in late 1996 granted Korea its access to the OECD, this prosperous situation would not last much longer. As early as 1996 the performance of the Korean economy began to deteriorate. The same factors that had facilitated its growth a few years before were then hurting it. Throughout the 1990s, Korean industrial capital had been suffering increased competitive pressure in relatively simple and low value-added productions from firms located in ASEAN countries, Mexico and China. In these countries, industrial capital had access to a much cheaper and equally disciplined labour-force, crucially after the substantial post-1987 real wages increase in Korea and the 1994/95 devaluations of the Chinese Yuan and the Mexican Peso. This was putting pressure on Korean exports of textiles, garments and consumer electronics.[106] Equally, the mid-1995 devaluation of the Japanese Yen was putting extra competitive pressure on Korean exports of relatively more complex industrial goods like ships, cars, memory chips and steel. Lacking the resource base to do otherwise, Korean capital had been competing in all these markets on the basis of price rather than product innovation or technological features.[107] In effect, Korean industrial capital was

[104] See graph 4.10 in Chapter 4.
[105] See Shin (2003: 147-8, 166-9).
[106] See Radelet and Sachs (1998: 32-4); Koo (2001: 180-1, 196); Park and Choi (2004: 57); Brenner (2005: 262-6).
[107] See Noland (2000: 199); Graham (2003: 95-8).

already responding to both developments following a twofold strategy. First, firms were accelerating the relocation of large parts of their unskilled-labour intensive production, through FDI, to low-wage countries in the region, to Mexico, India and the European periphery,[108] or increasing the use of 'temporary' and immigrant (sometimes illegal) labour in Korea.[109] Secondly, they were also investing in high-wage countries (i.e. Western Europe and the USA) to acquire technological and design capabilities either by setting R&D centres employing local high-skilled workers or by purchasing domestic firms specialised in these activities.[110] To make things worse, during 1996 international prices of Korea's main exports, electronic components and steel and chemical products fell significantly. The price of semiconductors, for instance, collapsed by as much as 70% due to a glut of supply and a slowing global economy. This widened the current account gap and put extra pressure on the Korean currency.[111]

Already in mid-1996, as export growth stagnated and the economy decelerated rapidly, some mid-sized *chaebol* began to go under and thus hurt the position of the local banking sector. The government responded, orchestrating a 'voluntary' stand-by agreement by which domestic banks would bail-in firms that were deemed sustainable in the long run. The government, in exchange, committed to purchase non-performing loans from banks, thus injecting some capital into the embattled banking system. The agreement, however, was short-lived. By the last quarter of 1997, several firms included in the programme were already in receivership, including Kia, the third largest conglomerate.[112]

In late 1996, in a desperate attempt to reduce labour costs, which kept increasing despite the ensuing difficulties, and to improve the international competitiveness of industry, the government passed, through a parliamentary trick resembling those used by Park and that seemed more like a fraud than a legitimate resource, a law reforming labour market institutions. Without giving time for proper legislative debate, and with no opposition members in the floor, the National Assembly 'unanimously' and hurriedly approved the labour market reform on Christmas Eve. The new law attempted to make the labour market more 'flexible' by different means. First, it fully allowed lay-

[108] See Lautier (2001: 231-50); Perrin (2001: 100-2); Lee (2001: 292).
[109] During the 1990s the number of foreign workers increased from 50,000 in 1991 to 250,000 (150,000 of which were illegal) in 1997. See Lee (2003: 278-82).
[110] See Lautier (2001: 219-22); Perrin (2001: 100-2); Lee (2001: 286-305).
[111] See Hahm and Mishkin (2000: 23); Noland (2000: 197-8). See also table C.38 in Appendix C for the evolution of current account result.
[112] See Noland (2000: 206-7); Graham (2003: 101-4).

offs without a 'just' cause, hitherto 'prohibited' though practised. Secondly, it facilitated the transformation of permanent workers into temporary employees with the consequent reduction in wages and fringe benefits, a process that had been slowly but steadily occurring since the late 1980s. Thirdly, it reduced overtime and holiday pay. Fourthly, it limited trade union bargaining power by various means and postponed for three years the long-awaited project introducing multiple trade unions at industry and confederation levels and for six years at company level. Fifthly, it further restricted the access to meagre unemployment insurance.[113]

The response was prompt. The recently formed unofficial, and hitherto illegal, but independent and democratic, Korean Confederation of Trade Unions (KCTU), representing mainly workers in marginal industries but also those in a few core sectors like motor-vehicles and public sector employees, called for a general strike, the first since the mid-1940s.[114] Surprisingly, the official, and state-sponsored, Korean Federation of Trade Unions (KFTU), the largest in terms of membership and representing mainly workers from core industries, supported the measure. After two months of uninterrupted general strike and vociferous opposition from members of the National Assembly, the government was forced to back down and renegotiate the new labour law. In the end, however, the original law was passed with few practical amendments restricting lay-offs and the use of 'temporary' workers. In exchange the KCTU, the more combative of the two union confederations, was finally granted legal status.[115]

If the aforementioned problems were not severe enough, things got worse in 1997 when global financial markets began to tighten again. Despite its new OECD membership, high credit ratings and strong export performance, the Korean economy was not spared the difficulties subsequently suffered by most developing country economies. In effect, already in 1997, Korean banks and NBFIs were finding it increasingly difficult to get their external short-term debts rolled over, notably by their Japanese creditors who were attempting to stabilize their own local banking sector.[116]

The transmission of the tensions prevailing in the global credit markets to the Korean economy was straightforward. First, as stated above, the highly leveraged

[113] See Koo (2001:198-9); Shin (2003: 161-4)
[114] The KCTU was formed in 1995 through the merger of the NCTU and two other post-1987 democratic unions. See Koo (2001: 197).
[115] See Koo (2001:199-200); Shin (2003: 164-5).
[116] See Noland (2000: 201, 210); Park and Choi (2004: 57).

Korean firms had become extremely dependent on foreign loans to fund their massive expansion programmes during the 1990s. Much of this capital was now excessive in the light of the aforementioned transformations in the global markets for industrial goods. Secondly, Korean financial institutions, notably the merchant banks that expanded thanks to the financial sector deregulation during the 1990s and the absence of state supervision over their activities, had borrowed largely short-term in international financial markets to lend for long-term investments.[117] Furthermore, a large part of these loans went to highly risky borrowers in Russia and Southeast Asia. These economies were already collapsing in mid-1997, worsening the banking crisis in Korea.[118]

As exports growth stagnated and external loans were not being fully rolled-over, the supply of dollars in the Korean foreign exchange market dried up rapidly. International reserves fell sharply and, despite the repeated efforts of the Korean Central Bank to sustain its value, by the end of the year the Won collapsed and the country was negotiating a substantial rescue package under the leadership of the IMF and the US Treasury.[119]

With the crisis unfolding swiftly, it was no surprise that Kim Dae-Jung, the most entrenched critic of the so-called Korean Inc. model, finally managed to win the presidential elections held in late 1997, on a ticket to reform the *chaebol*s, end their corrupt relationship with the state and to support small- and medium-sized companies instead. The *chaebols* were being signalled by many, abroad and at home, as the main culprits of what was becoming a crisis of large, previously unseen proportions. Incumbent Kim Young-Sam, in turn, was being hurt by the emergence of delicate corruption scandals, always surfacing in Korea under these circumstances, relating his

[117] "The share of short-term debt (which is defined as debt with less than a year's maturity) in total debt rose from an already high 43.7% in 1993 to an astonishing 58.3% at the end of 1996. […] Moreover, supervision of the merchant banks, unlike that of the deposit banks, was virtually non-existent, to the extent that the Kim government was apparently unaware of the huge mismatch in the maturity structures between their borrowings (64% of their $20 billion total foreign borrowings were short term) and lendings (85% of them were long term) that existed on the eve of the crisis." Chang et al. (1998: 738-9). Eighty per cent of banks' liabilities were short-term while 70% of their assets were long-term. See Chung (2004: 32).

[118] See Feldstein (1998); Noland (2000: 199- 200); Hahm (2003: 89); Chung (2004: 32).

[119] Hahm and Mishkin (2000: 25) point out that "the speculative attack was not in the usual form of direct currency attack to exploit an expected depreciation. Due to the tight regulation on currency forwards which should be backed by corresponding current account transactions and the absence of currency futures markets inside Korea at the time, opportunities for direct speculative attack had been much limited. Rather, the drastic depreciation of Korean won was driven by foreign creditors' run on Korean financial institutions and chaebols to collect their loans, and by foreign investors to exit from the Korean stock market."

son to the irregular activities of one collapsing *chaebol*.[120] So profound was the economic crisis that this was the first time in Korean history that the candidate of the incumbent party lost a presidential election. Interestingly, Kim Jong-Pil, Park's lieutenant, KCIA founder and DRP ex-president was a major electoral ally of Kim Dae-Jung and became the prime minister during the subsequent period of wage compression (August 1998 to January 2000).[121]

During the first half of 1998, liquidity in international credit markets dried up sharply for developing economies. Despite all the transformations of the previous years, the Korean economy was no exception. The net inflow of interest-bearing capital, which had been positive since the early 1990s, became largely negative in 1998. Not only were additional resources no longer available to fund part of capital formation, now a portion of the surpluses generated in the Korean economy were being exported. The short-term maturity of most of Korea's external debts then created a massive imbalance in the foreign exchange market, resulting in a substantial devaluation of the Won. This further restricted the capacity of Korean firms to service their debts in foreign currency, crucially those selling in the domestic markets and those suffering from sluggish external demand and falling prices. On 31st March 1998, Korea finally managed to restructure and reschedule its external liabilities.[122]

With few resources to do otherwise, in early 1998 a set of contractionary fiscal and monetary policies were implemented following the 'advice' of the IMF and the US Treasury.[123] In line with the worldwide trend, interest rates were increased further to reach a staggering 35%, bankrupting thousands of small- and medium-sized firms. By the middle of the year, however, these sharp recessionary policies began to be partly reversed. As a result of the debt restructuring programme, and the mid-1998 fall in global interest rates, the Korean state was then beginning to regain some access to external credit markets. It could thus afford to implement some countercyclical fiscal policies, such as tax reductions, increased unemployment subsidies and public employment programmes. Moreover, the unintended consequences of the adjustment on economic growth had been far worse than expected. The IMF gave its necessary

[120] See Noland (2000: 205).
[121] See Haggard and Ma (2000: 210-1); Lim and Han (2004: 269).
[122] See Chopra et al. (2001: 21) on the rescheduling of Korean external debt.
[123] See Feldstein (1998).

'approval', allegedly admitting that the adjustment previously prescribed had gone too far.[124]

Apart from the implementation of tight fiscal and monetary policies, the IMF-led bail-out came with other extra 'conditions' promptly accepted by the new Korean administration. Most of these reforms had either been attempted by the Kim Young-Sam government or were suggested by current Korean policy-makers.[125] As in other developing countries, 'orthodox' macroeconomic management was merely the form of realisation of the international 'liquidity' crisis in the Korean economy. The deeper institutional changes that were required as a condition for the bail-out, though triggered by the crisis and relatively similar to other national experiences, expressed more fundamental transformations in the Korean process of capitalist development. These included reforms in the financial, corporate and state sectors and in the labour market. They also included the complete opening of trade and capital accounts.[126]

The reform of the financial system involved several key institutions. First, the Korean Central Bank (KCB) was made independent and would thereafter concentrate on 'targeting' the inflation rate through the manipulation of interest rates rather than by trying to control money supply. Secondly, the Financial Supervisory Commission (FSC) was created to regulate and supervise the entire financial sector, introducing 'prudential' and 'oversight' regulations more in line with internationally accepted practises. Thirdly, Korea Deposit Insurance Corporation (KDIC) and the Korea Asset Management Corporation (KAMCO) were formed and became charged with buying non-performing bank loans, reimbursing depositors who had money in closed down banks and recapitalizing restructured financial institutions. To cover these new financial obligations, funds were raised by issuing public bonds, some of them bought by the National Pensions Fund (NPF). In other words, the Korean state nationalised part of the banking sector (one third in terms of assets), partly with social security funds.[127] In 1998, public and publicly-guaranteed debt almost doubled to reach 58 billion dollars. The total costs of the banking sector clean-up up to mid-2001 were estimated in the order of 15-22% of the GDP of 2000.[128] Fourthly, the consolidation of the private

[124] See Hahm and Mishkin (2000: 26-7); Noland (2000: 217-8); Graham (2003: 107-8); Jun (2004: 115-9).
[125] See Noland (2000: 220-1); Chopra el al. (2001: 32-3); Kim (2003: 53-8); Chang and Chae (2004: 429-31).
[126] See Chopra et al. (2001) for a detailed outline and justification of the 'reform agenda'.
[127] See Noland (2000: 223-4).
[128] See Graham (2003: 115-6); Jun (2004: 128-30).

financial sector was pursued through closures of unprofitable institutions and mergers of inefficient but potentially viable ones.[129]

Corporate sector reforms were mainly directed towards the *chaebol*. Repeating an old and already tried formula, these were stimulated, through different means including soft loans, tax credits and political pressure to concentrate on their core business activities by swapping assents and closing down unviable operations, to sharply reduce their debt-equity ratios, to improve the quality of their governance, and to avoid cross-guaranteeing their debts. The latter practice was considered as one of the main causes of the alleged *chaebol* overexpansion and over-borrowing in the period up to the financial crisis. As many times before, corporate sector reform slowed as soon as growth returned in 1999.[130]

The Kim Dae-Jung administration also targeted the public sector for harsh restructuring. It downsized the state by reducing the number of central and local government departments as well as its workforce, and by accelerating the privatisation of SOEs.[131] Around 10% of public sector jobs were shed during 1998-2000 and a number of companies were sold, including large ones like POSCO, Korea Telecom and Korea Electric Power Company.[132]

Labour markets were made more 'flexible', allegedly to help capital restructure its activities. To find political consensus for this conflictive measure, in 1998, the Tripartite Commission composed of government officials, representatives of the business sector and trade union leaders from both national confederations was formed to sign a 'social pact' under which the burden of the crisis would supposedly be shared fairly by all sectors of Korean society. The proposals of the Commission, which in 1999 became an advisory body, included diverse topics ranging from wage and tenure issues to social security policies. In the end, however, what was actually implemented was a combination of labour market 'flexibilisation' and social security reform. Both together led to increased differentiation in the conditions of reproduction of different parts of the Korean industrial workforce. This was done with the acquiescence of all members of the Tripartite Commission except the combative KCTU who deserted it under pressure from its membership as soon as the Commission's real purpose became noticeable. Labour laws forbidding 'unjustified' lay-offs and the transformation of regular workers

[129] See Graham (2003: 113-4).
[130] See Noland (2000: 226-33); Chung (2004: 34-5).
[131] See Chang and Chae (2004: 430-1).
[132] See Noland (2000: 237-8); Chang and Chae (2004: 440-1).

into temporary ones were completely scrapped to allow for 'industrial restructuring.'[133] The doors were now fully opened for the accelerated precariousness of the Korean labour market. The open economic crisis in late 1997 managed to accomplish fully what had been unsuccessfully attempted by Kim Young-Sam's government one year earlier, when the first manifestations of economic problems were becoming apparent. In exchange, trade unions got the right to take part in political activities. This time, labour organised reactions to these policies and the wave of lay-offs that followed were crushed and defeated through old-style violent state repression.[134] On the other hand, partly as a result of the Commission's proposals, the limited welfare system was substantially enlarged and deepened. A relatively wide web of 'safety nets' was created, crucially to avoid the loss of 'human capital' during periods of unemployment and to soften the impact of the crisis. First, unemployment benefits were increased, though still to internationally low levels, while coverage was expanded to around 50% of the workforce and entitlement regulations softened.[135] Secondly, income support allowances were granted to those on low wages and subsidies were given to firms retaining workers. Thirdly, the coverage of the NPS and the MIP was expanded. Moreover, programmes of public works and vocational training were launched in 1998-99 to provide jobs and retraining opportunities for the unemployed.[136] State expenditures in social security, nevertheless, remained limited by international comparison as a large part of welfare services continued to be provided by employers at enterprise levels. As a consequence, those self-employed and those working on non-regular contracts or for small firms were usually not covered by such systems.[137]

Lastly, the trade and capital accounts were, finally, fully opened. Import restrictions and tariffs were completely removed and most limits on long-term overseas borrowing and FDI inflows were lifted. As in Brazil during those years, this led to large-scale purchases of industrial assets by foreign companies. The crisis, and the

[133] See Koo (2001: 202-3). The new labour law allows the contract of temporary workers for periods longer than one year and makes lay-offs more feasible. On the main labour market reforms, see also Choi and Kim (2004: 221-2).
[134] See Chang and Chae (2004: 438-9).
[135] According to Chang and Chae (2004: 434) only 11.7% of unemployed workers in 1999 had access to unemployment benefits.
[136] See Chopra et al. (2001: 29-31); Shin (2003: 182-5); Jun (2004: 122-3).
[137] See Graham (2003: 172-3); Shin (2003: 202-5). Between 1995 and 2000, the proportion of eligible workers increased from one third to two thirds of all employees. At the same time, the proportion of insured workers among those eligible decreased from 98% to 71% (Shin 2003: 210). Moreover, according to Chang and Chae (2004: 434-5), "almost 40% of unemployed workers could not benefit at all from any labour market programmes provided by the government."

related strong exchange rate devaluation, resulted in the reduction of the price of Korean assets and thus made them particularly attractive to foreign investors.[138]

Different explanations have been advanced to account for the sharp 1997-98 economic crisis. Some authors have emphasised the role of state intervention in the foreign exchange market in generating the overvaluation of the Won and the emergence of current account deficits.[139] This account, however, fails to acknowledge that the exchange rate was hardly overvalued before the 1997 financial crisis and that current account deficits were not only not new in Korea but had been falling during 1997, before the open manifestation of difficulties.[140] Other authors have criticised the former account, pointing at the way in which premature, incomplete and poorly regulated capital account liberalisation increased Korea's vulnerability to external shocks. They have also highlighted how initial problems were compounded by 'self-fulfilling' speculative attacks and 'contagion' from neighbouring countries to create a liquidity, rather than an insolvency, problem that could have been avoided had the 'international community' been more supportive.[141] This account fails to understand that Korean economic growth slowed markedly already in 1996, before capital inflows reversed and liquidity problems arose. Moreover, it also fails to acknowledge that Korea had faced a massive outflow of capital during the second part of the 1980s without going into a recession, let alone a crisis. A third group of authors have claimed that it was poor state policies restricting the disciplinary power of markets, and increasing 'moral hazard', that created the conditions for the crisis to occur. These, it is argued, led to unsustainably high debt-equity ratios and extreme vulnerability to shocks in the *chaebol* sector.[142] The problem with this explanation is that state intervention in the allocation of credit and in support of large firms in trouble predated the 1990s. Indeed, both types of state actions had been behind the previous strong growth periods. A fourth group has argued that, on the contrary, the crisis resulted largely from the lack of investment co-ordination as state planning was phased out during the reckless liberalisation spree of the 1990s.[143] The problem with this explanation is that Korean firms were producing for world markets and that, even if non-marginal players, it is doubtful that their over-expansion could have resulted in price drops as large as those occurring in the

[138] See Noland (2000: 233-4); Graham (2003: 111-2); Chung (2007: 280-2).
[139] See Corsetti et al. (1998).
[140] See graph 2.2 in Chapter 2 and table C.38 in Appendix C.
[141] See Radelet and Sachs (1998); Feldstein (1998).
[142] See Haggard and Ma (2000); Chopra el al. (2001).
[143] See Chang et al. (1998).

semiconductors industry. Finally, other authors have claimed that the crisis resulted from a fall in the rate of return of industrial capital resulting from the slow growth of value-added per worker due to 'poor governance of both industrial and financial institutions.'[144] These authors, however, fail to explain why these institutions became an obstacle for productivity growth only through the 1990s when they had been present since at least the 1970s.

The period 1998-2001 was one of relatively low global growth. As credit supply slowed, the world economy began, in 1998, a process of deceleration that bottomed out during the 2001 recession. Global rates of economic growth began to accelerate only in 2002. The manifestation of this process in Korea, including its particularly severe acuteness, expressed the specificities of the form under which capital accumulates there. In other words, the general trend took a specific form. This has been different from the one taken in the industrially advanced economies of Western Europe and North America, where capital accumulates through the vanguard development of science and technology. It has also been different from the one taken in 'developing' economies, such as the Brazilian, where capital accumulates through the appropriation of a portion of land rent.

The 1997-98 financial-cum-economic crisis in Korea expressed and made evident some of the limitations and contradictions of a process of capitalist development based on the use of a *relatively* cheap and disciplined labour-force, which was particularly productive when performing certain 'simplified' and 'routinized' tasks but incapable of performing competitively the most knowledge-intensive, and thus higher value adding, industrial activities. First, as a result of this specificity, industrial capital in Korea has tended to concentrate in the production, for world markets, of standardised (i.e. 'commoditised') goods. The prices of this type of goods tend to be particularly sensitive to the movements of the business cycle, crucially to slowdowns in economic activity. Secondly, the continual process of workforce skill upgrading, itself resulting from the dynamics of this specific form of capitalist development, has unavoidably resulted in the increase of the local costs of labour-power. This process has hurt the profitability of those industries competing with industrial capital in other national spaces of accumulation with access to a much cheaper, equally disciplined and almost as productive labour-force, as those located in the ASEAN and China. In this sense, the

[144] See McKinsey (1998); Graham (2003).

Korean economy suffered during the second part of the 1990s what the Japanese did ten years earlier when Korea and Taiwan began to emerge as competitors in world markets of semiconductors, consumer electronics, cars and ships. During the 1993-1997, these weaknesses manifested themselves in the increased recourse to external loans to fund investment projects. Unlike in the second half of the 1980s, net surpluses available in the Korean industrial sector were no longer sufficient to sustain the rapid process of capital formation.

By early 1999, when the Korean economic crisis bottomed out after a negative grow of 9% during 1998, eleven of the largest 30 *chaebol*s had gone bankrupt, while 16 of the 30 existing merchant banks had been shut down. Many other financial institutions followed the same fate. There was further consolidation through 1999 and 2000, when the number of financial institutions fell again.[145] Unemployed and underemployed added up to 10% of the labour force.[146] Urban poverty increased to 24% of the population.[147] Average real wages in manufacturing fell 14% between 1997 and 2001/2 when the global recession ended and the external demand for Korean industrial goods began to speed up again.[148]

Despite the many reforms implemented in the aftermath of the 1997-98 economic crisis, the post-1999 growth of the Korean economy has been sustained on the same specific bases as the previous period. Yet, the reproduction of these bases has taken new forms that further express not only the potentialities of this process of capitalist development but also its limits and contradictions. First, though relatively fast during 1999-2002, despite the weak international environment, economic growth has been increasingly fragile thereafter, even when the global economy and thus the external demand for Korean industrial goods were accelerating. While exports grew 15% average per year between 2002 and 2005, GDP and industrial value-added growth averaged 2.4% and 4%, respectively.[149]

Secondly, this strong growth of industrial exports was, unlike in any previous period, partly supported by a strongly undervalued exchange rate and the accumulation

[145] See Graham (2003: 113-4).
[146] See Lim and Han (2004: 273). Apart from lay-off of workers, Korean firms encouraged their employees to accept early retirement deals. In Korea this was informally called 'honorary', rather than 'voluntary', retirement, further expressing the specificities of Korean industrial relations.
[147] See Noland (2000: 219).
[148] See graph 4.10 in Chapter 4.
[149] See table C.16 in Appendix C and graph 4.5 in Chapter 4.

of foreign assets by the country's monetary authority.[150] To fund purchases of foreign exchange earned by exporters above its value, the Korean government has borrowed resources from domestic economic agents, selling Exchange Stabilisation Bonds that engross the Foreign Exchange Stabilisation Fund (FESF), or from the Bank of Korea (BoK) that, in turn, has sterilised the expansion of the monetary base by issuing Monetary Stabilisation Bonds (MSBs).[151] The accumulated foreign exchange reserves have been subsequently used to buy foreign securities –i.e. lent to foreign governments and firms. Though it has helped the export-led recovery, this policy option is not free from problems. To sustain it the Korean government has had to find financial resources in the domestic markets. A portion of these has been made of pension savings. By mid-2000s, around 15% of MSBs issued by the BoK had been bought by the NPF.[152] The rest of the resources used to sustain the undervaluation of the exchange rate and the accumulation of foreign exchange reserves have been raised from private sources that have consequently needed to extend their own borrowing activities to fund their normal operations. Indeed, since this exchange rate policy was implemented, domestic credit increased substantially jumping from 60% to 110% of GDP.[153] This, however, is hardly a sustainable source of long-term economic growth; it cannot reproduce indefinitely. To begin with, as the financial cost of local resources used by the BoK to purchase foreign exchange has been higher than the interest earned on its foreign assets, this policy has an immediate negative fiscal impact. In addition, when BoK's interventions do not keep up with the inflow of foreign exchange and the Won appreciates, this strategy results in capital losses as the value in domestic currency of FESF's liabilities increase together with the dollar value of MNBs.[154] Effectively, if the BoK stops intervening in the foreign exchange market, artificially increasing the demand for foreign exchange, the Won would appreciate strongly, to reach its purchasing power parity, and BoK's and FESF's assets would be insufficient to cover their liabilities. Moreover, this exchange rate policy also forces the private sector to extend its borrowing activities to compensate for its financing of the government's exchange rate policy. Korean private capital has been lending resources to the state to fund the subsidies received from the government

[150] See Aizenman and Glick (2008)
[151] See Moon and Rhee (2009: 62-5).
[152] See National Pension Service (2008).
[153] See table C.36 in Appendix C.
[154] The accumulated capital losses of the FESF alone ascended, between 2000 and 2007, to around US$ 25 billion. In addition, the total amount of MSB outstanding by 2007 was around US$ 150 billion. See Moon and Rhee (2009: 63-5).

when exporting. Nevertheless, this exchange rate policy has helped reproduce two related fictions: it has artificially sustained the profitability of Korean exports and thus helped reduce their prices and increase their demand in global markets; it has artificially sustained the full purchase capacity of foreign buyers.

Thirdly, as a result of the reforms introduced in the labour market and the further weakening of inter-industry union solidarity, the process of wage growth differentiation among blue-collar workers, initiated in the early 1990s, accelerated after the 1997-98 economic crisis. Korea reinforced its Japanese-style 'dual' labour market structure. Historically, labour market segmentation had been based on gender characteristics. While male labourers worked in large companies in the heavy and durable-consumer goods industries, their female counterparts worked in smaller companies in the textile, garments and electronics sectors. From the early 1990s onwards, and notably after the 1997-98 economic crisis, the differentiation has taken new forms, no longer being mainly gender-based. Wages paid to 'irregular' (daily and temporary) workers fell from 60.7% of those paid to their 'regular' (permanent) colleagues in 1998 to 56.7% in 2004.[155] Working conditions have also been worse for the former, as discrimination and stigmatisation by their 'regular' colleagues - to the point of denying union membership - have reinforced the hierarchical structure of Korean labour relations.[156] In some case, temporary workers were simply ex-permanent employees who had been dismissed and re-contracted to perform the same job under worse payment conditions.[157] In other cases, they were new entrants to the labour market who perform marginal, more risky or less skilled jobs.[158] Moreover, while the *chaebol* were beginning to concentrate on their core activities, wage disparities between those working for small- and medium-size

[155] See Hwang (2006: 7). This implies a substantial widening of the absolute gap between them. See also Choi and Kim (2004: 224-30).

[156] "In fact, the 2000 Working Population Survey of the Labor Statistics Office demonstrates that the wages of nonstandard workers reach only about 54 percentage of the wages of regular workers, and that over 70 percentage of the nonstandard workforce is excluded from social security programs (e.g., national pension, medical insurance and unemployment insurance) and legal labor standards (e.g., paid leaves, extra working time allowances, severance pay and bonuses). Concerned about the rapid proliferation of the non-standard workforce and their poor employment conditions, the national centers of labor unions (the FKTU and the KCTU) pressured the government to reform the existing labor laws to protect these marginal workers and regulate employers' excessive use of nonstandard labor, and also launched their own organizing campaigns to unionize the unprotected workers. As a consequence, the special committee to discuss labor law reforms and government policies to protect and regulate the employment terms of nonstandard workers was established under the Tripartite Commission in July 2001. Some groups of those non-standard workers succeeded in unionizing themselves, which provoked intense conflicts with management and, sometimes, regular workers." Lee (2003: 281). See also Koo (2001: 205-9); Chang and Chae (2004: 443-4).

[157] See Chang and Chae (2004: 436).

[158] See Lee and Frenkel (2004) on the manifestations of these processes in the Korean auto industry.

companies and those employed by large firms increased sharply. In 1986, one year before the period of social unrest started, wages paid to workers in the former sector were 90% of those earned in the latter, falling to 70% during the 1987-90 labour upheaval, a figure around which they remained until 1998. Thereafter, wages paid in small and medium size companies fell continuously to reach 58% of those paid in large companies in 2004.[159] The payment system has also become more flexible. Between 1996 and early 2002, the number of firms employing more than 100 full-time workers that used an annual salary system increased from a mere 1.8% to 32.3% of the 4,998 companies surveyed by the Ministry of Labour. This system spread particularly rapidly among large companies. More than 45% of firms listed in the stock market had introduced merit pay systems by 2000. In addition to the annual salary system, an increasing number of firms have also introduced various forms of performance-based pay system, such as profit-sharing, team incentive and stock option systems.[160] Thanks to these transformations, average wages paid in the industrial sector remained practically stagnant between 1996 and 2003 and recovered only thereafter.[161] Moreover, employer contributions to social security fell from 42% of direct wages in 1999 to 20% in 2005, further reducing labour costs at the expense of labour's post-retirement consumption.[162]

Fourthly, the export-led recovery has been riding on the expansion of high value-added sectors, sub-sectors and productions. Although the post-1998 process of industrial deepening has manifested itself in a sharp increase in the levels of R&D expenditure and personnel, this process has taken a form different from the experiences of those countries where vanguard scientific and technological development tales place. The proportion of industrial sector workers employed in R&D activities has gone up from 3.7 out of 1000 in 1995 to 7.84 per 1000 in 2006. In this way, Korea has substantially narrowed the gap with the industrially advanced economies. In Japan and the USA, for instance, the proportion decreased slightly from 8.31 and 8.19 to 10.92 and 10.54, respectively. Korea's R&D expenditures increased from 2.39% of industrial sector GDP in 1995 to 3.63% in 2006, the same ratio as in Japan. However, like in Japan, and in contrast to other OECD members, most Korean R&D expenditures are privately undertaken, largely in the electronics industry. They have thus tended to be

[159] See Hwang (2006: 4).
[160] See Chang and Chae (2004: 436-7).
[161] See graph 4.10 in Chapter 4.
[162] See table C.5 in Appendix C.

concentrated in the development of applied technologies rather than in the generation of basic scientific knowledge, which is an essential condition for a national economy to be at the vanguard of the development of global society's productive forces and to thus have access to a permanent flow of those knowledge-based quasi-rents that are necessary to sustain the normal valorisation of capital in the long-run. In 2006, 78% of Korean researchers were employed in the private sector, which accounted for 77% of the expenditures. In Japan the corresponding figures were 68% and 77%, whereas in the EU they were 49% and 63%, respectively. Nevertheless, significant improvements have occurred in the field of basic scientific research in post-crisis Korea. Investments in activities increased from 0.30% to 0.49% of GDP between 1995 and 2006, while in Japan and the USA they went from 0.41% and 0.40% of GDP to 0.40% and 0.47%, respectively. Moreover, while only 134 (natural) scientific and technical journal articles were published by Koreans every one million of employed individuals in 1995, the figure was 535 in 2005; a massive catch-up with Japan where the numbers increased much more modestly, going from 541 to 625. Yet, in the USA, the UK and France, the three countries that are the world's vanguard in scientific development, the amount of this type of scientific publications per million of employed persons remained around 900-1000 throughout that period, presumably of higher quality.[163] Effectively, despite this impressive catching-up process occurred since 1997, it still remains to be seen whether or not the global process of capital accumulation will ever determine Korea as a producer of vanguard scientific knowledge and technology. The experience of the Japanese economy shows that the transformation of a process of capital accumulation based on the use of *relatively* cheap and disciplined labour-force into one that is based on the vanguard development of basic scientific knowledge is not a straightforward process. It requires not only massive investments in research equipment and the widespread and extensive upgrading of labour's skills. It also requires the transformation of other of the latter's underlying productive characteristics. Workers performing vanguard research in basic sciences and frontier technologies (e.g. microchips logic structures and software languages) need to perceive themselves as completely free individuals who are not closely tied to any hierarchy and who are able to express their entire unrestricted creative individuality in the labour process they

[163] See tables A4.9, A4.10 and A4.11 in the appendix to Chapter 4. It should be noted that this aggregates do not account for the different *quality* of scientific publications.

perform. These characteristics are in contradiction to the ones that made the Korean economic 'miracle' possible.[164]

End of chapter conclusions

During the 1990s and the first half of the 2000s, the developmental patterns of the Brazilian and Korean economies grew further apart. Following the evolution of the global economy, both national processes of capital accumulation recovered during 1993-1996/7, contracted during 1997/8-1998/9, and returned to a growth path thereafter.

Following a global trend, during the 1990s, both economies underwent a process of market liberalisation, including trade and capital accounts opening and SOEs privatisation. Behind these similarities, sharp differences were hidden. While market liberalisation reforms in Korea largely expressed the further increases in industrial sector international competitiveness, in Brazil they expressed the inability of land rent to sustain a diversified domestic-markets-oriented manufacturing base. In effect, while economic and industrial growth in Brazil during this period remained dependent on the expansion of land rent and its complementary sources of extraordinary social wealth, in Korea it resulted from the expansion of the possibilities for capital to produce increasingly complex industrial goods for global markets using the relatively cheap and disciplined labour-force available there. By the end of the decade, as global growth slowed, both national economies went into a new period of crisis.

Despite their superficial similarities, the 1997-99 Korean and Brazilian crises also expressed the specific contradictions and limitations of both processes of capitalist development. At this point, the Brazilian economy suffered the contraction of land rent and the decline of interest-bearing capital inflows, both of which had been supporting the local process of capital accumulation. The Korean economy, for its turn, suffered from the fall in global demand for its exports, partly due to the increased competition it faced from capital with access to new sources of cheap and disciplined labour-power in the region, and from the retraction of those inflows of interest-bearing capital that, since the early 1990s, had been co-funding the investment wave pursued to accelerate the process of industrial upgrading.

[164] See Iñigo Carrera (2008) for the general argument and Ernst (2005) for the experiences of microchip designers in the microelectronics industry.

After these crises subdued, growth returned to the Korean and Brazilian economies. Yet, both processes of capitalist development reproduced thereafter under the same unchanged specific bases as before. In Korea this has taken new forms of realisation which have further expressed the contradictions of the local process of economic development. On one hand, post-crisis growth has resulted in the increased differentiation of the wage structure and the recourse to a strongly undervalued currency, in order to improve industrial capital's international competitiveness. On the other hand, it has involved a leap forward in the process of industrial deepening that realised through substantial increases in R&D investments and skills upgrading. In Brazil, post-crisis growth has largely resulted from real wages compression during 2000-03 and from a strong expansion of land rent since 2004. The latter has been so strong that has given place to the reintroduction of some of the previously dismantled 'developmentalist' policies to mediate its appropriation by industrial capital and has also revitalised the 1970s dream of *Brasil potência*. Neither of these economies seems to have superseded recently the structural limitations for long-term development that arise from their respective specific forms of accumulation.

Summary and Conclusions of the Thesis

This thesis presented a study of the Brazilian and South Korean processes of industrialisation, economic growth and social development, and of the institutional transformations associated with them. This study demonstrates that these countries' distinctive integration into the global economy explains their different developmental patterns since the mid-1960s and their dissimilar growth performance since the late-1970s. The thesis shows that Brazil's and Korea's patterns of integration into the evolving international division of labour resulted not from national public policies and state institutions, as often argued, but from the interaction between global-economy processes and local-economy factors that particularly affect the conditions for the valorisation of capital in different branches of production. These patterns of integration determined the type of industrialisation, growth and developmental experience. The emergence and consolidation of the New International Division of Labour and the concomitant fragmentation of industrial labour-processes explain, together with the characteristics and costs of local labour, Korea's transformation in less than forty years from a poor agrarian society into a global industrial power. The existence of a large mass of land rent available for appropriation, creating the conditions for industrial capital to valorise through small-scale production for domestic markets, together with the absence of a sufficiently cheap and disciplined labour-force, explain Brazil's inability to undergo a similar structural transformation and, thus, its much weaker post-1980 growth record. State policies and institutions in these countries mediated the global integration of capitalism through the specific determination of the Brazilian and Korean processes of capitalist development.

In order to support these arguments, this thesis was divided in two parts, following the introductory chapter. The introduction critically reviewed mainstream debates on state policies/institutions and economic development in Korea/East Asia and Brazil/Latin America, presenting an alternative theoretical approach to the topic. This approach has two main tenets. First, the process of capitalist development is essentially global, and only national in its form of realisation. Secondly, state policies are forms of realisation of the autonomously regulated process of capital accumulation. This alternative theoretical approach framed the account of the comparative development of Korea and Brazil pursued throughout the rest of the thesis.

Chapter 1 of Part I offered a schematic analysis of the specific characteristics of the processes of capitalist development in Korea and Brazil and of the main transformations in their economic, political and ideological forms of realisation since the 1950s. In doing so, it advanced the main arguments developed in more detail throughout the thesis. First, that capital accumulation in Brazil revolved around the appropriation of land rent throughout the entire period studied. Secondly, that capital accumulated in Korea in a relative similar manner until the mid-1960s, though land rent was complemented extensively with foreign aid inflows. Thirdly, that after the mid-1960s, capital accumulation in Korea became centred on the production of industrial goods for world markets, taking advantage of the continual simplification and standardisation of productive activities, including relative complex ones, and the local availability of relative cheap, disciplined and increasingly skilled labour-power. The analysis pursued in Chapter 1 also furthered elements in support of one of the main underlying theoretical arguments advanced in the introduction, namely, that political, institutional and ideological developments in both countries realised the transformations in their specific economic formations and thus mediated the global integration and unity of capitalism.

Chapter 2 of Part I presented evidence in support of the main arguments advanced in the preceding chapter. It developed a model to measure the magnitude of intersectoral income transfers and to assess their relevance in supporting the process of capital accumulation in each of the countries studied. In doing so, the model also measured the evolution of capital profitability economy-wide and in the agrarian and industrial sectors as well as the total magnitude of land rent. The chapter also put forward some measurements of the size of aid and credit inflows, and assessed their importance in supporting the process of capital accumulation in each country both in absolute and relative terms. It was shown there that the land rent appropriated by social actors other than landowners helped sustained the process of capital accumulation in Brazil throughout the period studied and in Korea until the late-1960s. The chapter also showed that inflows of money-capital (i.e. foreign aid and loans) were also important in both countries. In Korea, foreign aid complemented the land rent until the mid-1960s while loans supplemented normal surpluses in funding a rapid process of capital formation thereafter. In Brazil, interest-bearing capital inflows, directly or indirectly, lent to the state complemented the land rent, as junior partner, in sustaining the process of capital valorisation and accumulation.

Chapter 3 of Part I summarised main trends in the post-1950s processes of technological development on a global scale and traced their impact upon the structure of skills required from the industrial workforce. The chapter also examined the specific cases of the global steel, automobile and semiconductors industries and followed their development in Korea and Brazil, analysing and comparing the specific bases for the valorisation of individual capitals there. This chapter provided support for some of the main arguments advanced in the thesis. First, the chapter identified technological changes related to the emergence and consolidation of world-market-oriented industrial sectors in Korea. It was shown that the continual development of skill-replacing technological changes associated with computerisation and electronics-based automation, together with the relatively low cost and specific characteristics of the local labour-force, was the main driving force behind the emergence and successful long-term consolidation of the industrial sectors analysed. Secondly, the chapter identified mechanisms by which industrial capital in Brazil accumulated through the appropriation of land rent and, also, the specific characteristics of this limited form of capital accumulation and industrial development. It was shown that Brazilian industrial capital has been unable to sustain world-market levels of productivity and thus remained dependent on the evolution of the land rent available to complement normal surplus-value and thus sustain its valorisation.

Chapter 4 of Part I presented a group of time-series expressing together the transformations in the processes of capitalist development in both countries throughout the period studied. These included time-series showing the evolution of the integration of the Brazilian and Korean industrial sectors in the global economy and others showing the evolution of the individual and collective characteristics of these countries' labour-forces. The chapter also included a brief discussion of the specific evolution of labour market institutions and of their role in mediating the transformation of the conditions of purchase, consumption and reproduction of these national labour-forces, and thus of the specific forms of capitalist development. Chapter 4 presented extra analytical and empirical economy-wide support for the conclusions reached in the previous chapter which permitted their generalisation.

In light of the findings presented in the first part, the second part of the thesis put forward a political-economy analysis of the historical development of social and political processes, and their role in shaping the evolution of economic, welfare and labour state policies and institutions. This part of the thesis showed the intrinsic unity of

these processes, revealing specific transformations in Korea and Brazil as part of the realisation of the globally integrated process of capitalist development. This historical analysis supported not only the main hypothesis about the Brazilian and Korean processes of capitalist development but also of the more general arguments presented in the introductory chapter about state-market relations and global-national integration. This second part of the thesis was divided in five chapters, each covering a period of approximately ten years.

Three appendices closed the thesis. Appendix A discussed the determination of land rent in capitalism. Appendix B presented the methodology followed to assemble and construct the time-series used throughout the thesis. Appendix C presented tables with these time-series.

The analysis of the Brazilian and Korean economies presented in this thesis not only offers an original explanation of the specific characteristics of these processes of capitalist development between the mid-1950s and the mid-2000s. It also provided support for the main theoretical claims advanced at the beginning of the thesis. First, through this analysis it was shown that developments and transformations of national processes of capital accumulation cannot be understood fully by focusing on the examination of nation-state policies and institutions. The long-term specific development of national capitalisms mediates and realises the reproduction of the essentially global process of capital accumulation. In other words, national markets/economies are integral parts of a single world market/economy. The analysis of the latter should therefore be the starting-point for the understanding of the former. Secondly, it was shown that in capitalism state policies and political/economic institutions are forms of realisation of the self-regulated process of 'resource' allocation through capital accumulation and therefore the specific determination of national capitalisms as form of realising the integration of the global economy. In this way, the thesis offered original insights on the contemporary process of globalisation and on the political economy of state-market relations.

Moreover, the study of the Brazilian and Korean processes of capitalist development presented in this thesis also sheds some extra light on the experiences of other Latin American and East Asian societies, and thus on the process of late-industrialisation in general. These two countries have been paradigmatic in their respective regions. Their developmental and growth experiences not only have been essentially similar to their neighbours'. Brazil and Korea have arguably enjoyed the

strongest and deepest processes of industrial development among Latin America's and East Asia's NICs, respectively. The analysis presented here thus provides a key insight on the potentialities and limitations of the specifically different processes of capital accumulation and industrialisation in both regions.

Finally, the arguments and evidence presented in this thesis can be used as a starting-point for the research on the historical genesis of these processes of capital accumulation in their respective and specifically different pre-WWII experiences, and to speculate on the future developmental and growth prospects of these nations/regions. In terms of latter point, this thesis raises serious doubts over recent claims about Brazil's and Korea's long-term growth prospects. The thesis not only challenges broadly accepted perceptions of Brazil's present role and weight in the global economy but also those related to the strength of its most recent growth and (re)industrialisation experience. As shown in graph 4.3 in Chapter 4, in 2005 the Brazilian economy was only around 6% of its US counterpart and half the size of the Korean. With respect to Korea, the thesis problematizes its alleged capacity finally to become a 'new Japan' as argued elsewhere, even though income per capita has been rapidly approaching US levels.

Appendix A

On the Nature and Magnitude of Land Rent in Capitalism[1]

The commercial value of primary goods is not, as that of industrial goods, regulated by normal conditions of production but by marginal ones. If at any given time, agrarian and mining lands of worse quality than those in use need to be brought into production to satisfy social demand for these goods, commercial prices would need to increase proportionally in order to allow marginal portions of capital to valorise at the general rate of profit. In these circumstances, the rate of profit would be potentially higher for individual capital operating on intra-marginal lands, where relatively favourable and irreproducible natural conditions particularly enhance labour productivity and thus lower production costs. Although extremely attractive for agrarian and mining individual capital, their competition for the use of lands in which the *differentially* favourable natural conditions prevail increases their rental prices, and therefore allows landowners to appropriate these surplus profits under the form of rent paid for the use of the land.[2] Moreover, if, existing lands of different quality, successive discrete applications of capital of equal magnitude, each yielding a different output, need to be undertaken on plots of land already under production to satisfy solvent demand for agrarian and mining products, intra-marginal portions of capital will also yield a surplus profit, even those applied to lands of worst quality.[3] Competition will also transform these surplus profits into rent.[4] Both the *extensive* and *intensive* type of differential rent spring from the monopoly by landowners over portions of the planet that yield differential output, and thus profits, for capitals of equal magnitude. Their existence is thus a concrete form of realisation of the equalisation of the rate of profit. Moreover, since owners of marginal lands also receive a rent as a condition to allow their productive use by capital, commercial prices of primary goods must be set further above their prices of production (i.e. above those that cover for normal costs and profits) to include this rent springing from the *absolute* monopoly by landowners of a means of production that cannot be produced by human labour. By charging for the use of land,

[1] The goal of this section is to clarify the definition of land rent used in this thesis. The section does not aim at providing an extensive discussion on alternative theories of rent or of different interpretations of these theories. For a discussion of that type see, for instance, Murray (1977, 1978).
[2] See Marx (1981: 779-811); Iñigo Carrera (2007: 11-3).
[3] See Marx (1981: 812-23).
[4] For different understanding of the second type of differential rent, see Fine (1979).

as a condition for not withdrawing it from the market, landowners are able to appropriate a portion of social production without contributing to its creation. In contrast to what occurs in the industrial sector, the conditions that allow landowners to appropriate surplus profits cannot be reproduced by capital and thus generalised. They become rent.

Unlike the *differential* part of the rent, the magnitude of the rent of *absolute* monopoly varies not according to soil quality but to landowner bargaining power *vis-à-vis* productive capital. With the exception of circumstances when the demand is particularly strong, the absolute rent tends to be small in agrarian lands *vis-à-vis* the differential rent. The characteristics of mining productions (i.e. the possibility of withdrawing land from the market without losing the scarce natural resource) give mining landowners a relatively stronger bargaining power. Consequently, the absolute rent is relatively larger in the mining than in the agrarian sector.[5]

Though integral parts of the land rent, the social wealth that constitutes the differential and absolute rents originates in different branches of production. The differential part of the rent is formed of surplus-value produced outside the primary sector. The portion of social wealth materialised in the differential rent is paid by those capitals directly or indirectly consuming primary goods, and through competitive, profit-rate-equalising forces, by social capital. Intra-marginal portion of agrarian and mining capital, and through them landowners, receive a portion of social wealth in which more socially necessary labour-time is materialised than what was involved in the production of their output. In other words, in order to be able to consume commodities produced in lowest quality lands, social capital is forced to pay individual capitals producing in intra-marginal lands in excess of their cost of production and normal profits. On the contrary, the absolute rent is formed of surplus-value produced in the primary sector. The absolute monopoly over an irreproducible means of production gives landowners the power to appropriate a portion (or the whole depending on their strength) of surplus-value produced in the primary sector in the cases when, due to the lower than average organic composition of capital (i.e. labour to non-wage-capital ratio) prevailing there, it would otherwise be appropriated in other sectors of the economy. Without a limiting monopoly, such as landed property, competition among individual capitals of equal magnitude forces surplus-value to be redistributed from branches of

[5] See Marx (1981: 882-907); Iñigo Carrera (2007: 13-4).

economic activity with lower than average organic composition of capital, and thus higher than average proportion of wealth-creating living labour, to individual capitals in the sectors of production with the opposite characteristics. Competitive pressures thus equalise the rate of profit among capitals in different industries despite producing different amounts of surplus-value per capital advanced for valorisation. This process of equalisation of rates of profit into a general rate constitutes social capital, rather than individual capitals, as the active *subject* of the process of valorisation. Moreover, if landowner bargaining power *vis-à-vis* capital is sufficiently strong, commercial prices of primary goods can be set further above their price of production, allowing them to appropriate another portion of social wealth produced in other sectors of the economy. That is the case of *simple* absolute monopoly rent ('genuine monopoly price'). Both parts of the land rent, that springing from the monopoly over portions of land that yield a differential output for applications of capital of equal magnitude and that coming from the absolute monopoly over portions of the planet, are materialised in the price of primary goods. Their existence rests directly or indirectly from the surpluses available for capital's valorisation and accumulation.[6]

The price of land is equal to the rent received by the landowner capitalised at the going rate of interest. The rent thus appears as an interest on capital invested in landed property. If the rent is circumstantially higher than its normal value, the price of land would also be so and vice versa. If state actions (e.g. taxes, regulations, exchange rate policy) affect the magnitude of land rent received by landowners, the price of land is proportionally affected too.[7] If the individual capitalist (i.e. the owner of the means of production and the 'wage fund') also owns the land used to produce primary goods, both forms of income (profit and rent) would be melted into one, even if they are qualitatively different. If the individual capitalist also works in the production of primary goods, both forms of income (profit and wages) would be merged into one. If their capital is not large enough to implement the normal production techniques, however, his profit rate would be, as any small productive capitalist, below the average one since his unitary costs would tend to be higher than the normal ones.

[6] See Marx (1981: 779-907); Iñigo Carrera (2007: 15-6)
[7] See Marx (1981: 908-16).

Appendix B

Methodological bases and sources

B.1) Consumer Price Indices (Table C.1)

Methodology and sources

Brazil

For two reasons, the Consumer Price Index (CPI) produced by the independent Getulio Vargas Foundation (FGV) is used in this thesis instead of the Augmented Consumer Price Index (IPCA) produced by the state-run Brazilian Institute of Geography and Statistics (IBGE). First, the former is the first CPI produced in Brazil and, for that reason, the only one that covers the entire period under study keeping methodological consistency. Its origins date back to the early 1940s, when it was calculated for the city of Rio de Janeiro. A correction, using the re-estimation available in Correa do Lago (1989: 248) and Abreu (2008a: 373), was made on the original time-series for 1973. That year, the inflation rate measured by the FGV was grossly underestimated, under pressure from the military who wanted to keep readings low for political and policy purposes. The original reading of 13.7% was changed for the subsequent re-estimation of 26.6%. Secondly, the IPCA, produced by the IBGE since 1980, suffered several, often spurious, manipulations and methodological changes with the purpose of reducing the official inflation readings, crucially in 1990-92, when the Collor Plan was implemented, and during July-August 1994, when the Plan Real was launched.

Korea

a) 1955-1960: The time-series was constructed using the CPI of Seoul.

b) 1961-2007: The time-series of the national CPI was obtained from various issues of the Economic Statistics Yearbook (ESY) produced by the Bank of Korea (BoK).

USA

a) 1950-2007: The time-series of US CPI was obtained from the IMF International Financial Statistics (IFS) database.

B.2) GDP Deflators (Table C.1)

Sources

Brazil

a) 1950-2007: This time-series is produced by the IBGE. It was obtained from Ipeadata, the database assembled by the Applied Economics Research Institute (IPEA) dependent on the Ministry of Planning.

USA

a) 1950-2007: The time-series was taken from the National Income and Product Accounts (NIPA) Tables produced by the Bureau of Economic Analysis (BEA).

B.3) Gross Fixed Capital Formation Deflators (Table C.2)

Methodology and sources

Brazil

They were computed dividing the time-series of gross fixed capital formation in current prices for those in constant prices. They were computed for total gross fixed capital formation, 'constructions' and 'machinery and equipment'.

a) 1950-2005: The time-series of gross fixed capital formation are estimated by the IBGE. They are available in Ipeadata.

Korea

A single time-series was constructed averaging price indices of 'equipment' and 'construction'.

a) 1950-1998: The base time-series were taken from various issues of the ESY.

B.4) GDP at current prices (Table C.3)

Sources

Brazil

a) 1955-2005: The time-series is estimated by the IBGE (available in Ipeadata).

Korea

a) 1955-2005: The time-series was taken from various issues of the Korea Statistical Yearbook (KSY) published by the Korea National Statistical Office.

USA

a) 1953-2005: The time-series was taken from NIPA Tables.

B.5) Industrial value-added at current prices (Table C.3)

Sources

Brazil

a) 1955-2005: The time-series was taken from Ipeadata.

Korea

a) 1955-2005: The time-series was taken from various issues of the KSY.

B.6) Agrarian value-added at current prices (Table C.3)

Sources

Brazil

a) 1955-2005: The time-series was taken from Ipeadata.

Korea

a) 1955-2005: The time-series was taken from various issues of the KSY.

B.7) Total labour costs – Industrial sector (Tables C.11 and C.14)

Methodology and sources

Brazil

The time-series of the total cost of industrial labour-power was constructed by adding-up the annual cost of the labour-force in formal employment contracts and the annual cost of those informally employed. The former was obtained by multiplying the average (direct) wage in the sector plus employer contributions to social security (i.e. indirect wages) by the total amount of the formally employed labour force. The latter was calculated multiplying the average wage by the quantity of informal workers, obtained by ducting the amount of formally employed industrial labour from the total industrial labour-force.

Korea

The time-series of the total cost of the industrial labour-force was computed by multiplying average wages (plus employer contributions) by the number of wage-earners and self-employed in the sector.

USA

a) 1955-2005: The time-series was obtained from the US Bureau of Labor Statistics (BLS) database.

B.8) Direct and indirect wages – Industrial sector (Tables C.4 and C.5)

Methodology and sources

Industrial wages were computed by dividing the wage mass with the number of workers employed during the relevant year. Indirect wages were calculated by multiplying direct wages with the rate of employer contribution to social security.

Wages

Brazil

a) 1955-1975: Base time-series were obtained from the Annual Industrial Survey (PIA) produced by the IBGE.

b) 1976-2008: Values were estimated using an index of nominal wages for industrial workers in the metropolitan area of São Paulo, Brazil's largest industrial district, produced by the Federation of São Paulo Industrial Companies (FIESP).

Korea

a) 1970-2007: Base time-series were obtained from the National Accounts available in Kosis.

b) 1955-1969: The rest of the time-series was estimated using the rate of growth of wages paid to manual workers with permanent employment contracts (see below).

Rate of employer contributions to social security

Brazil

a) 1954-1969: It was obtained from Bacha, et al. (1972: 165).

b) 1975: It was obtained from Conjuntura Econômica, June, 1975.

c) 1980: It was obtained from Conjuntura Econômica, April, 1980.

d) 1976-1979: It was estimated taking the weighted average of 1975 and 1980 values.

e) 1988-1990, 1992-1993 and 1997-2007: It was computed by dividing the value of total contributions by the value of total wages published in the PIA.

f) 1991: It was estimated taking the average of 1990 and 1992 values.

g) 1994-1995: It was estimated taking the average of 1993 and 1996 values.

Korea

a) 1975-2006: Values were obtained from the BLS database.

b) 1955-1974: The rate of 1975 was used as a proxy.

B.9) Industrial Employment (Table C.6)

Methodology and sources

Brazil

Total industrial labour force

a) 1955-2005: The time-series was taken obtained from the '10-sector' database produced by the Groningen Growth and Development Centre (GGDC). This information is compatible with that compiled in the Demographic Censuses and the National Household Sample Survey (PNAD).

Industrial workers with formal employment contracts

a) 1950-1985: It was taken from the PIA.

b) 1986-2005: It was taken from the Ministry of Labour RAIS database.

Korea

Total industrial employment

a) 1955-1958: It was obtained from the 1960 Mining and Industrial Census and Economic Planning Board (EPB) publications.

b) 1959-1979: The time-series was taken from Michell (1988).

c) 1980-2005: It was obtained from various issues of the ESY.

USA

a) 1950-2005: It was taken from the NIPA Tables.

B.10) Total labour costs – Rural sector (Tables C.10 and C.13)

Methodology and sources

Brazil

The total cost of the rural labour-force (employees, self-employed and family workers) was computed using available estimations of 'labour's share' in agrarian valued-added, and multiplying these values by the valued-added in the sector. Multiplying rural wages by rural workforce overestimates 'labour's share' as it does not account for large underemployment in the sector.

'Labour's share'

a) 1962-1963: It was taken from Chacel (1967) based on a FGV study.

b) 1970, 1975, 1980, 1985, and 1995/6: It was obtained from Prado Lima (2007) based on Rural Census data.

c) The rest of the time-series was estimated taking weighted averages of values available.

Korea

a) 1962-2005: The cost of the rural labour-force was computed multiplying the total annual number of hours worked in the agrarian sector by the average wage paid to hourly rural workers. The former was calculated by multiplying the number of hours

worked per household (by family members, paid workers or unpaid non-family workers) by the number of households. This value was used as a proxy for 'rural employment' in the calculation of total labour costs. The hourly wage rate was estimated by dividing the average daily rural wage by 8.

b) 1955-1961: They were estimated using the evolution of total rural employment and wages available in the ESY.

B.11) Daily rural worker wages (Tables C.4 and C.5)

Methodology and sources

Brazil

a) 1952-1971: The time-series were taken from the database of the São Paulo Agrarian Economy Institute (IEA). Daily wages in this time-series correspond to workers in the state of São Paulo and therefore overestimate the national average.

b) 1972-1990: It was generated using an index of rural wages available in Bacha and Greenhill (1992).

c) 1991-2008: It was generated using an index of rural wages produced by the FGV (available in Ipeadata).

Korea

a) 1950-1970: Wage rates for daily farm workers were obtained from in Lee (1979).

a) 1970-2005: The time-series was constructed using the index of farm wages published in various issues of the ESY.

B.12) Rural Employment (Table C.6)

Sources

Brazil

a) 1973-1995: The time-series was taken from Mendonça de Barros (1999). This author corrects Census data taking account for the participation of female and under-aged labour.

b) 1950-1972: The data was constructed using the rate of growth of the time-series estimated by the GGDC (10-sector database).

c) 1996-2005: The same criteria as for 1950-1972.

Korea

a) 1961-2005: Values of average hours worked per household and of the number of rural households were taken from several issues of the Statistical Yearbook of the Ministry of Agriculture, Fishery and Forestry.

B.13) Total Urban labour costs (Tables C.12 and C.15)

Methodology and sources

Brazil

a) 1952-1969: The time-series was taken from Langoni (1970). This author uses unpublished IBGE material.

b) 1970-1976: The time-series was generated using the evolution of non-rural employment estimated by the GGDC ('10-sector' database) and an index of average urban wages available in Bacha (1986: 111).

c) 1977-2005: The same methodology as the previous period, using the index of industrial wages in São Paulo mentioned above.

Korea

The urban labour-force was calculated by deducting the rural labour-force from the total labour-force. This total was multiplied by average labour costs in the industrial sector estimated above in order to estimate the total cost of the urban labour-force.

Urban employment

a) 1955-1969: The time-series of total employment was obtained from various issues of the ESY.

b) 1970-2005: The time-series of total employment was obtained from the Korean Statistical Information Service (Kosis).

B.14) Index of real industrial wages (Tables C.4 and C.5)

Methodology

Nominal wages were deflated using the relevant CPI. In the Brazilian case, two different methods were used for the periods 1950-1975 and 1976-2008. For the former period, annual average nominal wages in the industrial sector (see above) were deflated using the CPI produced by the FGV. For the latter period, a monthly index of nominal wages in the São Paulo manufacturing sector (produced by FIESP) was corrected using a monthly CPI. The increase in nominal wages between months *y-1* and *y* was deflated by the average of price index increases between months *y-1* and *y* and months *y* and *y+1*. It was assumed that half of worker wages were spent on rent payments at the

beginning of the month and the other half was spent uniformly throughout the month. This method fully captures the impact of high and volatile inflation rates on wages' purchasing power.

B.15) Stock of fixed capital – Industrial sector (Tables C.7 and C.8)

Methodology and sources

Different methodologies were used to estimate the stock of fixed capital in the Brazilian and Korean industrial sectors.

Brazil

Due to the lack of information on gross capital formation in the sector, the time-series of total fixed capital annually advanced for valorisation in the industrial sector was calculated by applying to the original value the rate of growth of different estimations available for different periods. The value for 1954 was estimated using the capital to output ratio calculated in CEPAL/BNDES (1956) for those industrial sectors directly or indirectly producing consumer goods in 1954.[1] An annual average depreciation rate of 3.7% of the net value of the capital stock estimated in Morandi and Reis (2004) was used to calculate the consumption of fixed capital.

a) 1955-2003: The time-series was generated using the rate of growth of the following estimations of the stock of fixed capital in the industrial sector:

a.1) Serra (1982) for the period 1955-1980

a.2) Fonseca and Mendes (2002) for the period 1970-1996

a.3) Alves and Mesa Silva (2008) for the period 1996-2003

b) 2003-2005: It was estimated using the rate of growth of total fixed capital stocks.

Korea

There is no official estimation of the stock of capital economy-wide and in the industrial sector. There are several independent estimations.[2] Two of the most widely used are Timmer and van Ark (2002) and Pyo (2003), covering most of the post-WWII period. Timmer and van Ark (2002) estimate the stock of fixed capital in the industrial sector and economy-wide using the perpetual inventory method and a depreciation rate that includes a correction for technical obsolesce. The problem with this approach is

[1] This study, conducted by the UN Commission of Latin America and the newly created Brazilian National Development Bank, was part of region-wide project coordinated by CEPAL/ECLA. This project developed for the first time a uniform methodology to undertake a wide and exhaustive study of Latin American economies' contemporary state and growth potentialities. In some sense, this project informed the subsequent wave of *developmentalist* policies across the region.

[2] See Choi (2001).

twofold. First, there are no time-series for gross fixed capital formation between 1940 and 1953. As a consequence, Timmer and van Ark (2002) are forced to put forward all sorts of assumptions about it and the impact of the Second World and Korean Wars on them. Secondly, the use of non-linear depreciation rates is also questionable for representing accurately the form in which the value of an instrument of production is transferred to the goods it is used to produce. Pyo (2003) generates the time-series using national wealth survey data for 1968, 1977, 1987 and 1997. He estimates pre-1968 and post-1987 values through the perpetual inventory method and inter-survey values using investments flows and a polynomial equation that generates non-linear depreciation rates. Besides the problematical use of non-lineal depreciation rates, this estimation, as Timmer and van Ark (2002) noticed for previous versions of Pyo's study, is plagued with short-run inconsistencies, such as negative depreciation rates, necessary to make all surveys compatible with the investments time-series available in the national accounts.

In this thesis, the stock of fixed capital in the Korean industrial sector is estimated by adding to an original value the flow of investments and deducting the flow of fixed capital consumption. The value for 1958 reported in the Manufacturing and mining census conducted by the Economic Planning Board was used as starting point for the time-series. The value of capital stocks during the precedent period (1955-57) was estimated by deducting investment flows and adding up depreciation costs. For the estimation of fixed capital consumption, the original stock was assumed to be in the middle of its useful life. The 25-years average useful life estimated by Timmer and van Ark (2002), based on OECD averages and the composition of fixed capital in Korea, for the manufacturing sector was used to calculate the consumption of fixed capital. The time-series of gross fixed capital formation was taken from various issues of the ESY. This information is produced by the Bank of Korea.

B.16) Stock of fixed capital – Agrarian sector (Tables C.7 and C.8)

Methodology and sources

Brazil

There is no official publication of the time-series of gross capital formation in the agrarian sector. Data specific to the agrarian sector is included in the aggregated 'private sector' gross capital formation account. There is no 'unofficial' estimation either. For this reason, the estimation of the annual stock of fixed capital in the sector (i.e.

machinery, buildings, plantations and livestock) had to be done following a different methodology than for the industrial sector.

The stocks of fixed capital in the form of machinery were estimated through the perpetual inventory method.[3] The apparent consumption of the different types of machinery (tractors, cultivators and harvesters) was used as a measure of investments flows. Due to the lack of information, only imported milking machines were computed as investments in this type of instrument of production. Data from ANFAVEA (2008) was used for domestic production of tractors, cultivators and harvesters. Data from FAOSTAT was used for the number of tractors imported between 1950 and 2005. Information from UN Comtrade database was used for imports in domestic currency of other types of agricultural machinery. Prices of agricultural machinery published by IEA for 2005 and an index of prices of rural tractors (see below) were used to generate the time-series for 1955-2005. For imports before 1960, data published in the Statistics on Foreign Trade by the IBGE was used. A 5% depreciation rate (i.e. 20 years of useful life) was used to calculate the annual consumption of this type of fixed capital.

The estimation of the stocks of fixed capital in the form of rural buildings was done adding the flow of investments and deducting the consumption (depreciation) of fixed capital to an original stock. Langoni's estimation of the total stocks of rural constructions for 1953 was used for the first value of the time-series. The estimation of annual investments in rural constructions for 1950-1969 was done by the IBGE (unpublished material) and reproduced in Langoni (1974). For 1970-2005, information on investments in rural commercial buildings is only available for the census years of 1970, 1975, 1980, 1985, and 1995/6. The rest of the time-series was estimated using the weighted averages of the sector's investments-to-value-added ratios. Only 63% of the original stock and investments in rural buildings were considered as part of the stock of fixed capital advanced for valorisations in the form of commercial buildings in the agrarian sector. The other 37% was considered to be residential buildings. The relationship between residential and non-residential constructions was published in the Agrarian Censuses. The 63% mentioned above is an average of the values of the different census years.

[3] This method consists of generating the first value of the time-series by adding the flow of investments on a specific instrument of production and deducting its annual consumption for a period of time equivalent to its useful life. See Timmer and van Ark (2002) for a detailed explanation of this methodology.

The annual value of the stock of fixed capital in the form of perennial plantations was estimated using the following methodology. The number of trees of coffee, cocoa, oranges and banana, the four main perennial plantations in Brazil, in existence every year between 1940 and 2005 was estimated using the information of the number of trees per harvested area presented in the different agrarian census and the information annual harvested area published by the IBGE. For the case of coffee, direct information produced by the Brazilian Coffee Institute (1976) was used for the period 1950-1970. In order to calculate the value of the trees in existence, the cost of implantation and the average remaining useful life of each tree had to be estimated. The former was done using information on costs of implantation for coffee in 2003, cocoa in 1987, oranges in 2003 and banana in 2005 presented in Rodrigues Vegro (2004), Santana Ferreira (1992), Ghilardi (2005) and Paiva Badiz Furlaneto (2005), respectively. The rest of the time-series was estimated using the prices implicit in fixed gross capital formation. The useful life of each tree was estimated using an iterative model that considers that if tree populations remain constant (i.e. new plantations only replace worn out ones), the average life of each tree is equal to the average of its useful life. Increases or decreases in the stock of trees is then factored in the equation, modifying the average age of each tree, downwards when new plantations exceed retirements and vice versa. The average remaining life of each tree is calculated by deducting the average age from the average useful life. The following useful life periods of full productive capacity were used: 15 years for coffee, banana and orange trees, and 40 years for cacao. These are used in the sources mentioned above.

Korea

Agrarian assets apart from land and buildings were considered part of the stock of fixed capital in the sector. Buildings were regarded as used for residential purposes. The time-series of fixed capital consumption was taken from the national accounts.

a) 1955-2005: The time-series of fixed agrarian capital and consumption of fixed capital were taken from various issues of the KYS.

B.17) Livestock capital (Table C.7)

Methodology and sources

Brazil

The annual value of the stock of animals was computed by multiplying the number of animals by their prices. As livestock reproduces itself indefinitely, a turnover speed

equal to infinity was used to represent the annual consumption of this type of fixed capital. In other words, livestock is always considered to be worth its full face value.

Stock of animals

a) 1950-2005: The number of animals for livestock production was gathered from FAOSTAT.

Prices

a) 1950-1990: Prices for the different types of animals were obtained from various issues of the SY produced by the IBGE.

b) 1991-2005: They were estimated using price indices constructed for each type of animal. This information was obtained from the database of the São Paulo IEA. When no specific information was available (i.e. birds and sheep) a composite index of animals prices was used instead.

Korea

It is included in the time-series of fixed capital stock published in the KSY.

B.18) Total stock of fixed capital (Tables C.7 and C.8)

Methodology and sources

As for the industrial sector, different methodologies were used to estimate the total stock of fixed capital in the Brazilian and Korean economies.

Brazil

a) 1950-2005: The time-series was obtained from Morandi and Reis (2004). Only breeding (store) animals are included in the stock of fixed capital estimated by the authors. For this reason, the annual value of the remaining stock of animals is computed by deducting the amount of breeding (store) animals from the total stock of animals estimated above. The former was estimated using the average relationship between breeding animals and total stocks presented in the 1960, 1970, 1980 and 1995/6 Agrarian Census. These are 37.3% for cattle, 20% for pigs and 55% sheep. The average annual depreciation rate of 3.7% of the net value of the stock of capital estimated in this source was used to calculate the consumption of fixed capital.

Korea

The evolution of the total stock of fixed capital was estimated using the same methodology as for the industrial sector. The value and composition of the stock of capital in 1955 was taken from Pyo (2003). Flows of investment and consumption of fixed capital were estimated for non-residential buildings and equipment (transport and

machinery). Both time-series were taken from various issues of the ESY. Useful lives of 45 and 17 years were used for buildings and equipment, respectively. These values were estimated in Timmer and van Ark (2002) based on OECD averages.

B.19) Agrarian circulating capital (excluding livestock) (Tables C.7 and C.8)

Methodology and sources

The value of circulating capital advanced for valorisation was calculated by dividing the annual value of wages and of non-wage expenditures (i.e. intermediate consumption) by the number of times that this type of capital turns over per year.

Brazil

Turnover speed

The average turnover speed of 2 times a year estimated in Iñigo Carrera (2007), using the model presented in the Appendix 3.1, for agrarian productions in Argentina is used here as a proxy of the rate of turnover of circulating capital in the Brazilian agrarian sector. This average includes almost all the most important agrarian productions undertaken in Brazil under relatively similar conditions.

Non-wage production costs

a) 1955-2005: Values were estimated using the relationship between intermediate consumption and value-added in the sector published in the input-output tables of 1959, 1970, 1985, 1995 and 1996. The rest of the information was generated using weighted averages of that relationship and the time-series of agrarian value-added.

Korea

Turnover speed

The rate of turnover of circulating capital in the agrarian sector was assumed to be equal to 1.5, the average number of annual harvests in Korea throughout the period.

Non-wage production costs

a) 1955-2005: Values were obtained from various issues of the KSY.

B.20) Industrial circulating capital (Tables C.7 and C.8)

Methodology and sources

Brazil

Turnover speed

The turnover speed of inventory stocks was used as a proxy for the turnover speed of circulating capital in the industrial sector. The data of the former for a sample of 665

medium and large size industrial companies during 1981-1987 was published in Conjuntura Econômica (1988). The average of those years, 6.18 times a year, was used for the entire period 1955-2005.

Non-wage production costs

a) 1955-2005: Values were estimated using the relationship between intermediate consumption and value-added published in the input-output tables of 1959, 1970, 1985, 1995 and 1996. The rest of the information was generated using weighted averages of that relationship and the time-series of the sector's value-added.

Korea

Turnover speed

a) 1955-1965 and 1980-2005: The rates of inventories turnover were taken from several issues of the SY.

b) 1966-1979: Values were estimated taking the weighted average of previous and subsequent periods.

Non-wage production costs

a) 1955-2005: The time-series of non-wage production costs were obtained from various issues of the ESY.

B.21) Total circulating capital (excluding livestock) (Tables C.7 and C.8)

Methodology and sources

Labour and non-labour costs were added up and divided by the number of times this type of capital turns over per year.

Brazil

Turnover speed

The turnover speed of circulating capital in the industrial sector was used for all non-agrarian productions.

Non-labour production costs

a) 1955-2005: Total annual consumption of raw and auxiliary materials (i.e. non-wage production costs) was calculated using the same methodology as in the case of industrial and agrarian circulating capital.

Labour costs

Rural and urban labour costs (see above) were added up.

Korea

Turnover speed

The average turnover speed of inventories in urban economic activities published in the ESY was used to calculate the amount circulating capital advanced.

Non-labour production costs

They were calculated by adding up rural and urban intermediate consumption.

a) 1955-1969: They were estimated through the input-output tables published in various issues of the ESY.

b) 1970-2005: They were taken from Kosis.

Labour costs

Rural and urban labour costs (see above) were added up.

B.22) Exports (Table C.16)

Sources

Brazil

Total exports

a) 1947-2005: The time-series was taken from Ipeadata (produced by the Central Bank).

Industrial exports

a) 1962-1973: The time-series was calculated using the ratio of manufactures exports to merchandise exports published in World Development Indicators.

b) 1974-2007: The time-series was taken from Ipeadata.

Primary and semi-industrialised exports

a) 1974-2007: The time-series was taken from Ipeadata.

Korea

Total exports

a) 1955-2007: The time-series was taken from the IFS database.

Industrial exports

a) 1962-2005: The time-series was calculated using the ratio of manufactures exports to merchandise exports published in the World Development Indicators.

Primary goods exports:

a) 1953-1975: The time-series of total, industrial and primary goods exports was taken from Krueger (1979).

b) 1976-1999: The data was obtained from various issues of the ESY.

B.23) Exchange rates (Table C.17)

Methodology and sources

Brazil

Exchange rates for exports and imports were calculated by dividing the value of exports in current US$ by the value of exports registered in national currency. Black market exchange rates were also included.

Exports exchange rates

a) 1955-2007: The values of exports in local and foreign currency were obtained from various issues of the Statistical Yearbook.

Black market exchange rates

a) 1948-2006: The time-series was taken from Ipeadata.

Korea

Exchange rates for exports were calculated by adding the 'export premium' to the official exchange rate. Export premiums were in place between 1958 and 1964.

Export premiums

a) 1958-1964: Values were taken from Krueger (1979).

Official exchange rates

a) 1955-2007: The time-series was taken from the IFS database.

B.24) Taxes on primary goods exports (Brazil) (Table C.18)

Methodology and sources

Brazil

Three types of taxes on primary goods exports were implemented during the period under study: the ICM on exports collected by regional states, federal export taxes and Contribution quotas on coffee and cocoa exports.

Rate of ICM on exports

a) 1966-1984: The rate of ICM levied on primary goods exports was taken from Brandão and Carvalho (1991).

b) 1985-1993: The rate of 13% from Cardoso de Melo et al. (1994) and Helfand (2000), who independently estimated it reaching the same value. This export tax was suspended in August 1997.

c) 1994-1996: From Kume and Piani (1997: 9-10).

Rate of export taxes

The tax rate was calculated dividing the amount of resources collected in the form of federal export taxes by the value of primary goods exports. Export taxes were exclusively levied on commodity exports.

a) 1978-1984: The value in local currency of export taxes was obtained from Brandão and Carvalho (1991).

Contribution quotas

a) 1960-1984: The value of resources collected in the form of contribution quotas levied on coffee and cocoa exports was obtained from Brandão and Carvalho (1991)

b) 1984-2005: The value of contribution quotas was taken from the Bulletin of the Central Bank of Brazil.

Korea

Export taxes were not applied to the international trade of primary goods during the period under study.

B.25) Rural credit subsidies (Brazil) (Table C.18)

Methodology and sources

Subsidies granted to the agrarian sector through the credit system were only considered for working capital.

Brazil

a) 1967-1990: The base data was taken from Helfand (1994).

B.26) Net income of the Brazilian Coffee Institute (Table C.18)

Methodology and sources

The net financial results of the Brazilian Coffee Institute (IBC) operations were obtained by deducting the monetary value of IBC annual purchases and expenditures from the resources raised through the sale of stocks. As mentioned in Chapter 2, the net losses of the state-run IBC were considered as a recovery of land rent by landowners.

a) 1952-1966: Values were obtained from Bacha (1972).

B.27) International Commodity Prices (Table C.20)

Methodology and sources

International prices were used for all commodities studied here. For the case of rice in Korea, import Border prices were used as a proxy for international prices.

a) 1950-2007: Time-series of international of commodity prices were constructed with data published in the IMF Primary Commodity Prices and UN Comtrade databases.

Korea

a) 1960-1984: Border prices presented in Moon and Kang (1989) were used.

b) 1985-2005: The time-series was constructed using the evolution of Thai FOB prices available in the IMF Commodity Prices database.

B.28 Domestic farm-gate prices received of agrarian goods (Table C.21)

Methodology and Sources

Farm-gate prices were used for the cases of cotton, rice and soybeans in Brazil and for barley in Korea. For rice in Korea, weighted averages, according to their participation in total supply, of marketed and state purchases were calculated.

Brazil

a) 1960-1984: Values were taken from Brandão and Carvalho (1991).

b) 1984-2007: The rest of the time-series was estimated using an index of Prices Paid to Producers published by the FGV (available in Ipeadata).

Korea

a) 1960-1984: Values were taken from Moon and Kang (1989).

b) 1984-2005: Values were estimated using the Index of Prices Received by Farmers published in various issues of the ESY.

B.29) Prices of sugar paid by the Sugar and Alcohol Institute (IAA) in Brazil (Table C.21)

Methodology and sources

The price paid by the IAA was estimated as the simple average of prices paid to sugar producers in the Northeast and Southeast of the country.

a) 1960-1984: Values were taken from Brandão and Carvalho (1991).

b) 1984-1990: The rest of the time-series was estimated using an index of Prices Paid to Producers published by the FGV (available in Ipeadata).

B.30) Free Alongside Ship (FAS) prices (Table C.22)

Methodology and sources

Theoretical FAS prices were constructed by adding the costs of transport (to ports) and administrative expenses (at ports) to the farm-gate price received by local agrarian

producers. They were computed for the cases of soybeans, rice and cotton in Brazil. Due to a lack of information, FAS prices were not estimated for Korea. Domestic prices were simply compared with Border (i.e. import) prices.

Brazil

a) 1967-1983: FAS prices were taken from Brandão and Carvalho (1991).

b) 1984-1989: They were estimated using the evolution of international and producer prices and the evolution of port and transport costs available in Helfand (1994).

B.31) Apparent consumption of primary goods (Tables C.23 and C.24)

Methodology and sources

Brazil

The time-series of domestic consumption of locally produced primary goods was calculated by deducting the quantities exported of each commodity from total productions. It was computed for the most widely consumed agrarian and mining productions: rice, corn, beans, manioc, sugar, cotton, soybeans, beef and iron ore.

Total production and exports

a) 1955-2007: The time-series were taken from Ipeadata (produced by the IBGE).

Korea

The time-series of primary goods domestic consumption was computed for rice and barley only. In the case of rice, it was only computed for the portion of national production that was marketed (i.e. consumed outside the rural sector). In the case of barley, it was assumed to be equal to total output. Only a small fraction of barley production was occasionally exported.

a) 1961-1970: The data on domestic consumption was obtained from Brown (1973).

b) 1955-1960: It was assumed equal to the value of 1961.

c) 1971-2005: The marketed portion was assumed to be equal to the production of each year minus the consumption in the rural sector in 1970. The data on domestic production of rice and barley was obtained from different issues of the ESY.

B.32) Apparent consumption of agrarian inputs (Table C.25)

Methodology and sources

It was computed by adding up imports and deducting exports from the values of local productions.

Brazil

It was computed for fertilizers, fuel-oil and tractors.

Fertilizers

a) 1966-2007: The time-series was taken from various issues of the Statistical Yearbook.

b) 1950-1965: It was estimated using information on the prices of different types of fertilizers available in Veiga (1974: 396).

Tractors

a) 1955-2007: The time-series was taken from ANFAVEA (2008).

Fuel-oil

Following Iñigo Carrera (2007: 168-69), an average consumption of 0.16 litres/hour per HP was estimated for tractors and harvesters. Based on the usual estimation of 12,000 hours of use during 20 years of useful life for agrarian machinery, an average of 600 hours of use per year was estimated for both types of agrarian equipment. An average of 50 HP was assumed for every tractor and harvester in use. The amount of diesel oil used per tractor and harvester was then multiplied by the amount of these means of production used per year, which was assumed to be equal to their stock. The annual stock of tractors and harvesters was obtained from the Statistical Database of the Food and Agriculture Organization of the United Nations.

Korea

It was computed only for fertilizers.

Fertilizers

a) 1955-2005: The time-series was taken from the SYs.

B.33) International prices of agrarian inputs (Table C.26)

Methodology and sources

Brazil

Fertilizers

a) 1955-1966: It was taken from Veiga (1974: 460-2).

b) 1967-2007: It was estimated using the 'Fertilizer price indexes' available in the US Department of Agriculture (USDA) database.

Fuel-oil

a) 1964-2005: The time-series was taken from Iñigo Carrera (2007: 253-4). The original time-series (Prices Paid Index: Fuel-oil) appeared in various issues of USDA's *Agricultural Prices Annual Summary*.

Tractors 60-80HP

a) For 1955-2005: The time-series was taken from Iñigo Carrera (2007: 259-60) based on USDA. This source estimates the price of 60-80HP tractors for 1993-2004 as an average of the price of 60-69HP and 70-79HP tractors, being the former itself an average of the prices of 50-59HP and 70-79HP tractors. The values for 1950-1993 were estimated using the Prices Paid Index: motor-vehicles (1950-1964); tractors and self-propelled (1965-1989); tractors (1990-1992). These indices appeared in various issues of the *Agricultural Prices Annual Summary*.

Korea

Fertilizers

a) 1963-2005: Import prices were obtained from the UN Comtrade database.

b) 1955-1962: Values were calculated using indexes of potash and phosphate prices from IMF Commodity Prices database.

B.34) Domestic Prices of agrarian inputs (Table C.27)

Sources

Brazil

Fertilizers

a) 1966-2007: The time-series was obtained from the IEA database.

b) 1955-1965: It was estimated using values presented in Veiga (1974: 395).

Fuel-oil

a) 1966-2007: The time-series was obtained from the IEA database.

Tractors

The price of 60-80HP tractors was estimated taking the average of the prices of 60-70HP and 70-80HP tractors.

a) 1990-2007: Prices were obtained from the IEA database.

b) 1970-1990: Values were estimated using the average price of tractors of different power available in Mendonça de Barros (1999).

c) 1955-1969: Values were estimated using the prices implicit in gross fixed capital formation in the form machinery.

Korea

Fertilizers

a) 1970-1984: The values were taken from Moon and Kang (1991).

b) 1955-1969; 1985-2007: They were calculated using the indexes of Prices Paid by Farmers published in various issues of the ESY.

B.35) Indices of labour productivity (Table C.28)

Methodology and sources

Two indices were constructed. The index of industrial labour productivity was constructed relating the evolution of physical output and production workers. For Korea, this index was corrected by the evolution of hours worked per year in the sector. In contrast to the Brazilian experience, the annual number of hours worked in Korea evolved differently from the USA. The index of general labour productivity was constructed relating the evolution of physical output and total employment in the economy.

Brazil

a) 1950-2007: Time-series of industrial output and production worker employment were obtained from the annual surveys undertaken by the IBGE. The time-series of GDP volume was taken from the IFS database. For total employment time-series see above.

Korea

a) 1955-2005: Time-series of physical output were taken from the various issues of the ESY. The number of industrial production workers was estimated multiplying the time-series of total industrial employment presented above by the proportion of production workers taken from International Labour Organisation (ILO) Laborsta. The proportion of production workers during 1955-1959 and 1961-1969 was estimated as a weighted average of preceding and subsequent values. The time-series of GDP volume was taken from the IFS database. For total employment time-series see above.

USA

Three indices were constructed using the different methodologies just explained.

a) 1950-2007: All time-series were taken from the NIPA Tables and the IFS database.

B.36) Industrial labour productivity relative to US levels (Table C.28)

Methodology

Brazilian and Korean industrial value-added per worker in 2000 were converted into US$ at the PPP exchange rates (see Chapter 2 for the methodology) and compared with the US value in order to obtain a measure of relative productivity. Both Brazilian and

Korean national accounts systems changed their bases in 2000. The time-series in constant and current prices are therefore equal that year. The figure of the current value-added per worker relative to US levels can thus be used as a measure of relative physical productive. The rest of the time-series was generated using the evolution of indices of labour productivity in the three countries. In order to assure computational consistency, values of "gross manufacturing value-added" and employment in 2000 for Brazil, Korea and USA were taken from the GGDC '10-Sector' Database. For Korea, it was also calculated for hourly value-added. For Brazil, it was also calculated for value-added per worker in the mainstream manufacturing sector (i.e. companies included in the *Pesquisa Industrial Anual Empresa* (Annual Industrial Survey) conducted by the IBGE.

B.37) Absolute gap with US level of industrial labour productivity (Table C.28)

Methodology

The values of output per worker in the Brazilian and Korean industrial sectors in US$ were estimated using 2000 values of value-added in US$ and generating the rest of the time-series with the respective indices of physical labour productivity. The absolute difference between US levels of output per worker and the estimated Brazilian and Korean values was then taken as a measure of the absolute productivity gap.

B.38) Hourly industrial wages and compensation costs in US$ (Table C.29)

Methodology and sources

Wages and compensation costs were calculated for manual workers and all employees in the industrial sector.

Brazil

1) 1996-2005: Values estimated by the US BLS were used.

2) 1955-1995: The rest of the time-series was estimated using the rate of growth of average industrial wages calculated above in US$ at market exchange rates.

Korea

Manual workers with permanent employment contract

1) 1955-2005: The base time-series of wages was taken from various issues of the ESY. The rate of employer contributions to social security and exchange rates was provided above.

All employees

1) 1970-2005: The time-series was constructed with the information on average industrial wages, employer contributions and exchange rates provided above.

USA

a) 1955-2005: All time-series were obtained from BLS database and the NIPA Tables.

B.39) Real purchasing power of industrial wages in PPP US$ (Table C.30)

Methodology

In order to obtain internationally comparable figures, the purchasing power of industrial wages in Brazil and Korea was expressed in US dollars of constant purchasing power. For that purpose, industrial wages in national currency were transformed into US$ using PPP exchange rates for private consumption calculated by the World Bank for 2005. The rest of the time-series were estimated using indices of real wage evolution. The conversion into US$ was done for 2005 because that was the last benchmark year for the calculation of PPP exchange rates by the Bank. Values estimated by the World Bank for the rest of the time-series were discarded due to the problems with the Brazilian official CPI mentioned above. World Bank's PPP exchange rates for non-benchmark years are calculated using the evolution of national CPIs.

B.40) Net inflows of foreign interest-bearing capital and aid (Tables C.31 and C.32)

Methodology and sources

The net inflow of foreign capital in the form of credit was computed in two different ways. The first method consisted of deducting the annual amortisation (principal and interest payments) of debt contracted in foreign currency from the inflow of new loans contracted in the relevant year. In the Korean case, aid inflows were also included. The second method deducted the value of interest payments from the net increase in the stock of external debts. For Brazil, net inflows were computed using both methods. For Korea, the first method was used for the period up to 1975 and the second one thereafter.

Brazil

a) 1950-2007: The time-series of inflows and outflows are registered by the Central Bank (available in Ipeadata).

Korea

a) 1955-1975: Aid inflows were taken from Frank et al. (1975). The data on net borrowing was obtained from Krueger (1979).

b) 1976-1981: Annual credit inflows minus principal payments were computed taking the difference between stock of external debts in the relevant year and the preceding one. The stock of foreign debt was taken from the IFS database. Interest payments were taken from World Bank (1986: 166). For 1976, they were assumed to be the same portion of the stock of external debt as in 1977.

c) 1982-1998: The same method as the previous period was used. Interest payments were taken from OECD Main Economic Indicators database.

B.41) External debt and foreign exchange reserves (Tables C.31 and C.32)

Sources

Brazil

a) 1947-2007: The times-series were obtained from Ipeadata (produced originally by the Central Bank).

Korea

a) 1955-2007: The times-series were obtained from the IFS database.

B.42) Rate of profit of US industrial capital (Table C.33)

Sources

a) 1950-2004: The values were taken from Iñigo Carrera (2007). The time-series in this source is based on the *Historical Statistics of the United States, Colonial Times to 1970* (for the period 1950-1970) and on several issues of the 'Quarterly Financial Report for Manufacturing, Mining and Trade Corporations' (for 1971-2004). Both publications were produced by the US Bureau of Census.

B.43) Nominal and real interest rates (Tables C.34 and C.35)

Methodology and sources

Nominal interest rates were deflated using national CPIs

Brazil

Money market and Treasury bills

a) 1948-2007: The times-series were obtained from the IFS database.

Korea

Investment, trade and 'curb' market loans

a) 1953-1995: The times-series were taken from Cheung (2004).

Corporate bonds

a) 1980-2007: The time-series was taken from the IFS database.

USA

Treasury bills, Fed funds and Prime loans

a) 1949-2007: The time-series was taken from the IFS database.

B.44) Total debts outstanding (Table C.36)

Methodology and sources

Claims in the domestic market against all types of public and private sector actors were considered

Brazil and Korea

a) 1950-2007: The times-series were obtained from the IFS database.

USA (includes external debts)

a) 1950-2007: The time-series was taken from the Federal Reserve Flow of Funds Account of the United Stated.

B.45) Capital inflows in the form of Foreign Direct Investments (Table C.37)

Sources

Brazil

a) 1950-2007: The time-series was taken from Ipeadata. This information is originally registered by the Central Bank of Brazil.

Korea

a) 1962-2004: The time-series was taken from Chung (2007: 275).

B.46) Trade and current account results (Table C.38)

Sources

Brazil

a) 1947-2007: The times-series were obtained from Ipeadata.

Korea

a) 1952-2007: The times-series were obtained from the IFS database.

B.47) Investment rates (Table C.39)

Sources

Brazil

a) 1950-2005: The times-series was obtained from Ipeadata.

Korea

a) 1953-1998: The time-series was taken from Cheung (2004)

b) 1999-2005: From Kosis

B.48) Price index of public utility prices in Brazil (Table C.40)

Methodology and sources

The index of public utility prices in Rio de Janeiro was used

a) 1950-2005: The time-series produced by the FGV was used (available in Ipeadata).

Appendix C
Statistical Tables

Table C.1

Price indices

	Consumer Price Indices						GDP Deflators		
	Brazil		Korea		USA		Brazil	Korea	USA
	Index	%	Index	%	Index	%	Index	Index	Index
1944	0.000000000000078				10.1		0.01065		
1945	0.000000000000091	16.8			10.3	2.3	0.01224		
1946	0.000000000000106	16.5			11.2	8.3	0.01403		
1947	0.000000000000129	21.9			12.8	14.4	0.01529		13.7
1948	0.000000000000133	3.4			13.8	8.1	0.01618		14.5
1949	0.000000000000139	4.2			14.2	2.4	0.01752		14.5
1950	0.000000000000152	9.4	0.03		14.0	-1.4	0.01911		14.6
1951	0.000000000000170	12.1	0.13	300.5	15.1	8.0	0.02257		15.7
1952	0.000000000000200	17.3	0.31	146.4	15.4	2.2	0.02473		16.0
1953	0.000000000000229	14.3	0.45	45.3	15.5	0.8	0.02818	0.2	16.2
1954	0.000000000000280	22.5	0.61	35.4	15.6	0.4	0.03586	0.3	16.3
1955	0.000000000000345	23.1	1.04	69.4	15.6	-0.3	0.03999	0.4	16.6
1956	0.000000000000417	21.0	1.27	22.5	15.8	1.5	0.04909	0.6	17.2
1957	0.000000000000484	16.0	1.56	23.1	16.3	3.4	0.05535	0.7	17.7
1958	0.000000000000556	14.8	1.51	-3.1	16.8	2.7	0.06217	0.7	18.1
1959	0.000000000000773	39.2	1.58	4.3	16.9	0.9	0.08446	0.7	18.3
1960	0.000000000001001	29.5	1.71	8.3	17.2	1.5	0.10591	0.8	18.6
1961	0.000000000001334	33.2	1.85	8.2	17.4	1.1	0.14259	0.9	18.8
1962	0.000000000001994	49.5	1.99	7.6	17.6	1.1	0.21425	1.1	19.1
1963	0.000000000003445	72.8	2.39	19.7	17.8	1.2	0.38225	1.4	19.3
1964	0.000000000006606	91.7	3.09	29.4	18.0	1.3	0.72450	1.8	19.6
1965	0.000000000010945	65.7	3.51	13.6	18.3	1.7	1.15147	1.9	19.9
1966	0.000000000015465	41.3	3.90	11.3	18.9	3.0	1.58829	2.2	20.5
1967	0.000000000020174	30.4	4.33	10.9	19.4	2.8	2.00964	2.5	21.1
1968	0.000000000024615	22.0	4.80	10.8	20.2	4.2	2.54636	2.9	22.0
1969	0.000000000030188	22.6	5.39	12.4	21.3	5.4	3.05694	3.4	23.1
1970	0.000000000036950	22.4	6.25	16.0	22.5	5.9	3.55385	3.9	24.3
1971	0.000000000044394	20.1	7.09	13.5	23.5	4.3	4.24275	4.5	25.5
1972	0.000000000051747	16.6	7.92	11.7	24.3	3.3	5.08567	5.3	26.6
1973	0.000000000065512	26.6	8.18	3.2	25.8	6.2	6.59002	6.1	28.1
1974	0.000000000083592	27.6	10.16	24.3	28.6	11.0	8.87056	8.1	30.7
1975	0.000000000107803	29.0	12.73	25.3	31.3	9.1	11.88029	10.3	33.6
1976	0.000000000152945	41.9	14.68	15.3	33.1	5.7	16.77540	12.7	35.5
1977	0.000000000219838	43.7	16.16	10.1	35.2	6.5	24.39111	14.9	37.7
1978	0.000000000304920	38.7	18.50	14.5	37.9	7.6	33.71524	18.4	40.4
1979	0.000000000465597	52.7	21.89	18.3	42.2	11.3	52.04486	22.0	43.8
1980	0.000000000851084	82.8	28.17	28.7	47.9	13.5	100.0000	27.2	47.8
1981	0.000000001749585	105.6	34.19	21.4	52.8	10.3	200.5289	32.1	52.2
1982	0.000000003463994	98.0	36.65	7.2	56.0	6.2	403.1320	34.4	55.4
1983	0.000000008382201	142.0	37.90	3.4	57.8	3.2	933.1863	36.4	57.6
1984	0.000000024873510	196.7	38.76	2.3	60.3	4.3	2,815.799	38.5	59.8
1985	0.000000081328234	227.0	39.72	2.5	62.5	3.6	9,814.289	40.2	61.6
1986	0.000000198228942	143.7	40.81	2.8	63.6	1.9	24,455.18	42.4	62.9
1987	0.000000657499341	231.7	42.05	3.0	66.0	3.7	74,883.88	44.7	64.8
1988	0.000005143624577	682.3	45.06	7.1	68.7	4.0	545,118.3	48.0	67.0
1989	0.000071341023633	1,287	47.63	5.7	72.0	4.8	7,655,774	50.4	69.5

Table C.1

Price indices

	Consumer Price Indices						GDP Deflators		
	Brazil		Korea		USA		Brazil	Korea	USA
	Index	%	Index	%	Index	%	Index	Index	Index
1990	0.002189	2,968	51.7	8.6	75.9	5.4	217,192,059	55.8	72.2
1991	0.011668	433	56.5	9.3	79.1	4.2	1,122,191,612	61.7	74.8
1992	0.128483	1,001	60.1	6.2	81.5	3.0	11,987,073,864	66.1	76.5
1993	2.83	2,105	62.9	4.8	83.9	3.0	251,890,159,911	73.7	78.2
1994	77.51	2,636	66.9	6.3	86.1	2.6	5,923,671,664,172	79.5	79.9
1995	141.23	82.2	69.9	4.5	88.5	2.8	11,463,682,575,285	85.4	81.5
1996	168.63	19.4	73.3	4.9	91.1	2.9	13,422,230,142,404	89.8	83.1
1997	181.96	7.9	76.6	4.4	93.2	2.3	14,448,293,114,198	93.9	84.6
1998	191.88	5.5	82.3	7.5	94.7	1.6	15,060,336,225,041	99.4	85.5
1999	202.46	5.5	83.0	0.8	96.7	2.2	16,337,180,587,900	99.3	86.8
2000	218.56	7.9	84.9	2.3	100.0	3.4	17,346,380,471,274	100.0	88.6
2001	233.71	6.9	88.3	4.1	102.8	2.8	18,902,019,700,363	103.5	90.6
2002	252.90	8.2	90.8	2.8	104.5	1.6	20,896,848,588,986	106.5	92.1
2003	290.30	14.8	93.9	3.5	106.8	2.3	23,765,279,782,835	109.4	94.1
2004	308.74	6.4	97.3	3.6	109.7	2.7	25,675,490,646,255	112.3	96.8
2005	327.37	6.0	100.0	2.8	113.4	3.4	27,526,578,398,693	112.1	100.0
2006	339.06	3.6	102.2	2.2	117.1	3.2	29,219,430,057,284	111.5	103.3
2007	350.70	3.4	104.8	2.5	120.4	2.9	30,934,190,117,257	112.9	106.3

Table C.2

Gross fixed capital formation deflators

	Brazil			Korea	
	Fixed Capital	Machinery	Construction	Equipment	Construction
1930	0.0039	0.0042			
1931	0.0049	0.0051			
1932	0.0045	0.0045			
1933	0.0047	0.0045			
1934	0.0051	0.0047			
1935	0.0059	0.0060			
1936	0.0063	0.0063			
1937	0.0064	0.0064			
1938	0.0067	0.0066			
1939	0.0068	0.0067			
1940	0.0083	0.0118			
1941	0.0079	0.0082			
1942	0.0092	0.0095			
1943	0.0102	0.0098			
1944	0.0102	0.0087			
1945	0.0111	0.0080			
1946	0.0112	0.0088			
1947	0.0125	0.0097	0.0138		
1948	0.0122	0.0104	0.0145		
1949	0.0131	0.0112	0.0154		
1950	0.0138	0.0119	0.0162		
1951	0.0164	0.0141	0.0179		
1952	0.0170	0.0145	0.0194		
1953	0.0218	0.0211	0.0214		
1954	0.0294	0.0266	0.0261		
1955	0.0315	0.0305	0.0306	4.7	2.0
1956	0.0387	0.0388	0.0370	5.8	2.5
1957	0.0419	0.0407	0.0439	7.0	2.8
1958	0.0543	0.0587	0.0497	7.5	2.9
1959	0.0746	0.0843	0.0666	7.7	3.4
1960	0.0909	0.0893	0.0782	8.2	3.9
1961	0.1292	0.1159	0.1124	8.3	4.2
1962	0.2123	0.1789	0.1598	8.7	4.6
1963	0.3884	0.3496	0.3009	10.0	4.9
1964	0.6870	0.6206	0.5483	12.8	6.5
1965	1.0018	1.0569	0.9312	14.5	7.7
1966	1.3337	1.3686	1.2718	15.8	8.7
1967	1.7352	1.6396	1.7925	16.7	8.9
1968	2.2401	2.1410	2.3691	18.8	9.7
1969	2.7535	2.6423	2.7919	18.9	10.1
1970	3.2835	3.3199	3.2585	21.2	11.6
1971	3.9783	3.9598	3.9196	22.5	11.7
1972	4.6589	4.6539	4.7216	25.0	12.8
1973	5.7441	5.5633	5.9129	26.1	14.5
1974	7.8923	7.3822	8.4934	31.7	20.2
1975	10.8577	10.1847	11.3709	37.2	24.8
1976	15.1364	14.1641	16.0118	38.9	26.7

Table C.2

Gross fixed capital formation deflators

	Brazil			Korea	
	Fixed Capital	Machinery	Construction	Equipment	Construction
1977	22.2414	21.6345	22.73	40.7	29.3
1978	32.1835	32.7030	31.75	42.8	31.4
1979	53.8723	51.3529	55.52	48.2	41.8
1980	100.14	99.36	100.61	57.5	61.0
1981	225.84	236.24	220.82	64.1	69.6
1982	462.40	495.84	447.15	70.1	73.0
1983	1,086.23	1,232.74	1,028	72.3	73.6
1984	3,275.89	3,502.00	3,180	74.1	74.5
1985	12,500	11,036	10,610	76.1	74.7
1986	30,612	22,244	28,075	78.4	74.8
1987	93,750	82,900	103,223	80.8	75.9
1988	771,739	806,037	759,349	83.9	80.3
1989	12,290,323	11,575,000	12,475,385	87.4	82.2
1990	287,518,072	454,545,455	344,827,586	89.3	86.4
1991	1,381,924,051	1,666,666,667	1,228,070,175	92.1	93.4
1992	16,176,095,890	18,823,529,412	14,905,660,377	94.7	95.9
1993	348,508,064,103	395,555,555,556	327,678,571,429	96.7	96.7
1994	8,140,818,202,247	8,419,600,000,000	7,948,813,559,322	98.4	95.5
1995	13,468,406,770,833	20,048,064,516,129	9,599,830,508,475	100.0	100.0
1996	14,678,538,762,887	20,200,000,000,000	10,992,063,492,064	100.0	102.6
1997	15,389,986,018,868	20,757,647,058,824	11,921,176,470,588	102.1	106.1
1998	15,826,100,571,429	20,620,909,090,909	12,554,347,826,087	123.9	125.4
1999	17,190,346,587,629	23,171,428,571,429	13,177,462,686,567		
2000	19,426,568,627,451	28,213,666,666,667	14,456,617,647,059		
2001	21,742,352,941,177	32,794,193,548,387	15,383,582,089,552		
2002	24,965,154,639,175	37,013,448,275,862	17,893,281,250,000		
2003	28,229,782,608,696	43,410,714,285,714	19,128,000,000,000		
2004	30,942,178,217,822	48,290,645,161,290	21,354,843,750,000		
2005	32,907,403,846,154	51,713,939,393,939	22,262,923,076,923		

Table C.3

GDP, industrial value-added and agrarian value-added

	Brazil			Korea			USA
	GDP	Industrial VA	Agrarian VA	GDP	Ind. VA	Agr. VA	GDP
			million R$			billion W$	bill. US$
1953	0.00000000018	0.000000000032	0.000000000039	48.3	3.8	-	379
1954	0.00000000024	0.000000000045	0.000000000054	66.8	6.9	-	380
1955	0.00000000030	0.000000000057	0.000000000065	115	11.7	-	415
1956	0.00000000037	0.000000000074	0.000000000073	153	15.7	71.9	437
1957	0.00000000045	0.000000000091	0.000000000086	199	19.0	89.7	461
1958	0.00000000057	0.000000000123	0.000000000095	207	22.3	84.2	467
1959	0.00000000084	0.000000000198	0.000000000131	220	26.4	74.2	507
1960	0.00000000116	0.000000000269	0.000000000187	248	29.3	91.1	526
1961	0.00000000169	0.000000000424	0.000000000266	297	36.8	116.1	545
1962	0.00000000271	0.000000000662	0.000000000440	359	43.4	132.9	586
1963	0.00000000486	0.000000001201	0.000000000722	509	66.4	221.4	618
1964	0.00000000953	0.000000002304	0.000000001433	724	104.8	340.2	664
1965	0.00000001551	0.000000003532	0.000000002246	813	138.5	309.6	719
1966	0.00000002283	0.000000005191	0.000000002885	1,042	173.4	364.1	788
1967	0.00000003010	0.000000006637	0.000000003726	1,282	208.7	394.4	833
1968	0.00000004188	0.000000009812	0.000000004348	1,660	270.6	477.8	910
1969	0.00000005505	0.000000013042	0.000000005494	2,169	356.0	607.9	985
1970	0.00000007066	0.000000017407	0.000000007330	2,775	444.7	735.9	1,039
1971	0.00000009393	0.000000023728	0.000000010436	3,435	549.5	926.1	1,127
1972	0.00000012603	0.000000032598	0.000000014042	4,241	749.9	1,120.8	1,238
1973	0.00000018612	0.000000053136	0.000000020311	5,499	1,114	1,347.0	1,383
1974	0.00000027096	0.000000080058	0.000000028895	7,845	1,526	1,890.5	1,500
1975	0.00000038164	0.000000113841	0.000000039036	10,478	2,023	2,551.9	1,638
1976	0.00000059417	0.000000174915	0.000000061259	14,411	3,030	3,292.1	1,825
1977	0.00000090654	0.000000256345	0.000000108918	18,502	3,856	4,000.9	2,031
1978	0.00000131536	0.000000385454	0.000000130233	24,945	5,256	4,944.0	2,295
1979	0.00000216772	0.000000644508	0.000000209573	32,049	6,838	5,924.1	2,563
1980	0.00000454829	0.000001386273	0.000000448036	39,110	8,340	5,553.3	2,790
1981	0.00000873301	0.000002595162	0.000000875097	49,306	10,749	7,311	3,128
1982	0.00001770208	0.000005443638	0.000001535945	56,677	12,349	7,841	3,255
1983	0.00003977685	0.000011727648	0.000004419659	66,685	15,099	8,390	3,537
1984	0.00012650401	0.000038684706	0.000015733337	76,524	18,356	9,100	3,933
1985	0.00047553404	0.000154414096	0.000054286874	85,699	20,343	10,129	4,220
1986	0.00127368393	0.000390722824	0.000136266177	100,254	25,273	10,489	4,463
1987	0.00403780574	0.001206571128	0.000391411715	117,938	30,963	11,072	4,739
1988	0.02937563025	0.008806393317	0.003000443213	140,525	37,491	13,167	5,104
1989	0.42559531039	0.124653188008	0.037696954942	158,620	40,253	13,828	5,484
1990	11.54879	2.63637	0.80419	191,383	45,363	14,845	5,803
1991	60.28600	13.16594	4.12435	231,428	55,511	16,002	5,996
1992	640.9588	149.3985	43.62424	263,993	61,452	17,743	6,338
1993	14,097.11	3,672.26	955.5179	298,762	69,903	17,951	6,657
1994	349,204.68	82,835.65	30,457.60	349,973	82,765	20,313	7,072
1995	705,640.89	114,685.73	35,554.58	409,654	98,530	22,392	7,398
1996	843,965.63	124,769.00	40,958.49	460,953	106,339	23,528	7,817
1997	939,146.62	138,459.00	44,823.84	506,314	114,363	23,450	8,304
1998	979,275.75	136,100.00	47,844.73	501,027	119,066	21,940	8,747

Table C.3

GDP, industrial value-added and agrarian value-added

	Brazil			Korea			USA
	GDP	Industrial VA	Agrarian VA	GDP	Ind. VA	Agr. VA	GDP
		million R$			billion W$		bill. US$
1999	1,064,999.71	149,554.00	50,782.03	549,005	132,143	24,393	9,268.4
2000	1,179,482.00	175,934.00	57,241.00	603,236	150,331	24,603	9,817.0
2001	1,302,136.00	191,646.00	66,819.00	651,415	150,870	24,374	10,128.0
2002	1,477,822.00	214,562.00	84,251.00	720,539	161,057	24,207	10,469.6
2003	1,699,948.00	264,955.00	108,619.00	767,114	168,246	23,725	10,960.8
2004	1,941,498.00	320,223.00	115,194.00	826,893	197,481	25,764	11,685.9
2005	2,147,239.00	333,296.00	105,163.00	865,241	203,681	24,111	12,421.9

Table C.4

Direct and indirect wages (Brazil)

	Brazil			Sao Paulo		Brazil		Brazil
		Manufacturing			Urban	Agriculture		MW
	Monthly wages		Contr.	Wages	Wages	Daily wages	LC/VA	Monthly
	R$	2004 R$	%	2006 = 100	1952 = 100	R$	%	2004 R$
1952	0.0000000000005	830	0.12		100	0.000000000000011	0.29	601
1953	0.0000000000006	824	0.12		103	0.000000000000012	0.29	526
1954	0.0000000000008	894	0.12		151	0.000000000000014	0.29	633
1955	0.0000000000010	888	0.11		199	0.000000000000017	0.29	698
1956	0.0000000000013	953	0.11		234	0.000000000000020	0.29	709
1957	0.0000000000016	1,028	0.16		334	0.000000000000023	0.29	785
1958	0.0000000000019	1,035	0.17		343	0.000000000000025	0.29	685
1959	0.0000000000025	1,011	0.18		475	0.000000000000032	0.29	785
1960	0.0000000000034	1,042	0.18		601	0.000000000000041	0.29	683
1961	0.0000000000045	1,044	0.18		779	0.000000000000054	0.29	790
1962	0.0000000000074	1,146	0.18		1,152	0.000000000000081	0.29	684
1963	0.0000000000143	1,276	0.23		1,862	0.000000000000132	0.29	629
1964	0.0000000000264	1,233	0.25		3,255	0.000000000000278	0.28	616
1965	0.0000000000410	1,154	0.27		5,455	0.000000000000498	0.27	565
1966	0.0000000000618	1,232	0.28		7,586	0.000000000000650	0.26	525
1967	0.0000000000788	1,204	0.36		10,897	0.000000000000906	0.25	503
1968	0.0000000001028	1,287	0.35		11,862	0.000000000001195	0.25	510
1969	0.0000000001344	1,372	0.34		14,897	0.000000000001444	0.24	487
1970	0.0000000001541	1,285	0.35		18,069	0.000000000001867	0.23	478
1971	0.0000000001969	1,367	0.36		21,862	0.000000000002344	0.23	479
1972	0.0000000002597	1,547	0.37		26,138	0.000000000003045	0.22	491
1973	0.0000000003001	1,412	0.38		32,345	0.000000000004124	0.22	510
1974	0.0000000004108	1,515	0.39		45,310	0.000000000005759	0.21	481
1975	0.0000000004884	1,396	0.40	0.00000000004	60,621	0.000000000007503	0.21	514
1976	0.0000000007613	1,532	0.40	0.00000000007	80,207	0.000000000010120	0.22	504
1977	0.0000000011429	1,601	0.40	0.00000000010	119,724	0.000000000016424	0.23	505
1978	0.0000000017678	1,784	0.40	0.00000000016		0.000000000019040	0.23	517
1979	0.0000000028590	1,897	0.40	0.00000000026		0.000000000026589	0.24	513
1980	0.0000000055554	2,002	0.41	0.00000000050		0.000000000048145	0.25	527
1981	0.0000000109702	1,931	0.41	0.00000000099		0.000000000098773	0.24	520
1982	0.0000000220800	1,956	0.41	0.00000000199		0.000000000208460	0.23	523
1983	0.0000000448008	1,674	0.41	0.00000000403		0.000000000443265	0.23	470
1984	0.0000001303091	1,589	0.41	0.00000001172		0.000000001190728	0.22	428
1985	0.0000004812331	1,794	0.41	0.00000004327		0.000000004504589	0.21	436
1986	0.0000013662193	2,121	0.41	0.00000012285		0.000000011935276	0.21	436
1987	0.0000041039383	1,974	0.41	0.00000036903		0.000000031159421	0.22	353
1988	0.0000309396776	1,821	0.42	0.00000278212		0.000000200885924	0.22	337
1989	0.0004684403587	1,876	0.45	0.00004212249		0.000003330089393	0.23	353
1990	0.0107656949979	1,563	0.49	0.00096805894		0.000068684321630	0.23	262
1991	0.0513178173580	1,326	0.49	0.00461453459		0.000383097896575	0.23	247
1992	0.5906284273312	1,382	0.49	0.05310972775		0.003452732528169	0.24	260
1993	12.627761261959	1,378	0.50	1.13549726311		0.070955246190611	0.24	270
1994	301.13258225462	1,247	0.51	27.0780557132		1.844107980339280	0.25	205
1995	532.03246057669	1,166	0.51	47.8407367972		4.670314723191010	0.25	196
1996	597.65663652086	1,095	0.52	53.7417093159		5.707887839639200	0.25	198

Table C.4

Direct and indirect wages (Brazil)

	Brazil			Sao Paulo	Brazil			Brazil
	Manufacturing				Urban	Agriculture		MW
	Monthly wages		Contr.	Wages	Wages	Daily wages	LC/VA	Monthly
	R$	2004 R$	%	2006 = 100	1952 = 100	R$	%	2004 R$
1998	644.026	1,093	0.51	57.911		6.108	0.25	199
1999	647.498	1,042	0.51	58.223		6.369	0.25	204
2000	615.103	939	0.49	55.310		6.577	0.25	204
2001	680.926	962	0.48	61.229		6.910	0.25	208
2002	686.563	908	0.49	61.736		7.173	0.25	228
2003	703.776	860	0.48	63.284		8.166	0.25	238
2004	747.339	795	0.49	67.201		9.318	0.25	244
2005	851.037	851	0.43	76.526		10.239	0.25	253
2006	953.750	900	0.43	85.762		11.690	0.25	270
2007	1,112.091	1,013	0.43	100.000		13.073	0.25	307
2008	1,205.586	1,062		108.407		14.268		328

Note: Contr. = employer contributions to social security; LC/VA = labour cost over value-added; MW = minimum wage

Table C.5

Direct and indirect wages (Korea)

	Manufacturing					Non-agriculture		Agriculture	
	MW (prod workers)		Average MW		Contr.	Monthly wages		Daily wages	
	W$	2004 W$	W$	2004 W$	%	W$	2004 W$	W$	2004 W$
1952	283	88,599			0.11				
1953	464	99,980			0.11				
1954	834	132,709			0.11				
1955	1,384	129,993			0.11				
1956	1,664	127,567			0.11				
1957	2,030	126,421			0.11				
1958	2,170	139,413			0.11				
1959	2,350	144,687			0.11				
1960	2,330	132,420			0.11				
1961	2,610	137,096			0.11				
1962	2,780	135,742			0.11				
1963	3,180	129,699			0.11			167	6,811
1964	3,880	122,283			0.11			199	6,272
1965	4,600	127,578			0.11			221	6,129
1966	5,420	135,111			0.11			256	6,382
1967	6,640	149,273			0.11			307	6,902
1968	8,400	170,488			0.11			381	7,733
1969	11,270	203,525			0.11	11,610	209,665	463	8,361
1970	14,150	220,368	16,163	251,717	0.11	17,830	277,679	579	9,017
1971	17,349	238,038	20,890	286,628	0.11	20,580	282,369	695	9,536
1972	20,104	246,973	22,081	271,256	0.11	21,180	260,192	803	9,865
1973	22,330	265,764	26,925	320,447	0.11	26,950	320,750	885	10,533
1974	30,209	289,250	32,526	311,438	0.11	35,540	340,294	1,141	10,925
1975	38,378	293,374	37,164	284,096	0.11	46,020	351,792	1,467	11,214
1976	51,685	342,595	48,733	323,028	0.11	62,187	412,208	1,905	12,628
1977	69,168	416,446	61,891	372,632	0.11	82,041	493,953	2,363	14,228
1978	92,907	488,688	82,093	431,806	0.11	110,977	583,738	3,452	18,156
1979	119,515	531,299	105,350	468,328	0.11	142,880	635,168	5,211	23,165
1980	146,684	506,683	141,356	488,277	0.11	176,350	609,158	6,605	22,815
1981	176,176	501,476	181,952	517,918	0.11	212,369	604,497	7,501	21,351
1982	202,117	536,714	194,628	516,828	0.11	246,013	653,279	8,364	22,210
1983	226,790	582,323	217,742	559,090	0.11	272,912	700,750	8,829	22,669
1984	245,261	615,747	249,185	625,598	0.11	296,992	745,621	9,194	23,081
1985	269,652	660,738	253,001	619,937	0.11	324,425	794,950	9,691	23,747
1986	294,485	702,261	293,621	700,201	0.11	350,716	836,355	10,123	24,140
1987	328,696	760,658	312,147	722,361	0.11	386,283	893,923	10,621	24,578
1988	393,056	848,936	379,327	819,283	0.10	446,536	964,444	12,280	26,523
1989	491,632	1,004,569	383,492	783,602	0.12	540,306	1,104,026	15,035	30,722
1990	590,760	1,111,809	436,031	820,610	0.14	642,799	1,209,746	18,487	34,792
1991	690,310	1,188,245	504,910	869,111	0.17	753,767	1,297,474	24,229	41,705
1992	798,548	1,294,166	577,330	935,650	0.20	869,961	1,409,902	28,344	45,936
1993	885,398	1,369,185	652,757	1,009,427	0.22	975,437	1,508,423	30,037	46,449
1994	1,022,496	1,487,967	759,453	1,105,179	0.19	1,098,894	1,599,144	31,066	45,208
1995	1,123,895	1,565,375	927,949	1,292,459	0.19	1,221,983	1,701,993	33,190	46,228
1996	1,261,168	1,674,126	1,048,414	1,391,708	0.21	1,367,893	1,815,797	36,409	48,331
1997	1,326,241	1,685,666	1,018,674	1,294,746	0.30	1,463,962	1,860,711	38,666	49,145

Table C.5

Direct and indirect wages (Korea)

	Manufacturing					Non-agriculture		Agriculture	
	MW (prod workers)		Average MW		Contr.	Monthly wages		Daily wages	
	W$	2004 W$	W$	2004 W$	%	W$	2004 W$	W$	2004 W$
1998	1,284,477	1,518,492	1,023,384	1,209,831	0.36	1,427,238	1,687,262	36,675	43,357
1999	1,475,500	1,730,256	1,039,687	1,219,196	0.42	1,598,250	1,874,199	41,207	48,321
2000	1,601,469	1,836,483	1,161,438	1,331,878	0.37	1,726,833	1,980,244	46,720	53,576
2001	1,702,350	1,875,887	1,046,899	1,153,620	0.35	1,825,583	2,011,683	49,523	54,571
2002	1,907,117	2,045,028	1,162,118	1,246,155	0.32	2,036,000	2,183,231	51,111	54,807
2003	2,073,992	2,148,478	1,275,471	1,321,278	0.28	2,228,000	2,308,017	55,269	57,254
2004	2,279,724	2,279,724	1,463,327	1,463,327	0.24	2,373,000	2,373,000	55,690	55,690
2005	2,458,022	2,392,147	1,637,955	1,594,057	0.20	2,524,917	2,457,249	57,605	56,062
2006	2,594,830	2,470,928	1,727,209	1,644,736	0.20	2,666,600	2,539,271	-	

Note: MW = monthly wage; Contr. = employer contributions to social security; prod workers = production workers

Table C.6

Employment

	Brazil				Korea			
	Industrial			Rural	Industrial	Rural		
	Formal	Informal	Total	Total	Total	Total	Households	
	Workers	Workers	Workers	Workers	Workers	Workers	H	Number
1952	1,332,028	907,351	2,239,379	8,504,251				
1953	1,453,891	852,910	2,306,801	8,658,768				
1954	1,504,421	871,832	2,376,253	8,816,093				
1955	1,540,056	907,739	2,447,796	8,976,276	335,668		2,116	
1956	1,541,749	979,744	2,521,492	9,139,369	362,443	6,131,247	2,116	2,200,549
1957	1,461,339	1,136,069	2,597,408	9,305,426	383,034	6,050,000	2,116	2,210,914
1958	1,582,125	1,093,485	2,675,609	9,474,500	384,366	6,184,356	2,116	2,218,323
1959	1,738,452	1,017,713	2,756,165	9,646,646	395,194	6,318,712	2,116	2,267,419
1960	1,791,694	1,047,452	2,839,146	9,821,920	417,694	6,128,654	2,116	2,349,506
1961	1,893,249	1,052,919	2,946,169	9,888,116	450,063	5,938,597	2,116	2,327,116
1962	1,994,804	1,062,421	3,057,226	9,954,758	462,173	5,748,539	2,116	2,469,453
1963	1,898,062	1,274,408	3,172,469	10,021,849	610,000	4,813,598	2,116	2,415,593
1964	2,012,267	1,279,790	3,292,057	10,089,392	637,000	4,825,000	2,116	2,450,308
1965	1,938,608	1,477,544	3,416,152	10,157,391	772,000	4,810,000	2,087	2,506,899
1966	1,927,896	1,617,029	3,544,926	10,225,848	833,000	4,876,000	2,064	2,540,274
1967	1,945,700	1,732,853	3,678,553	10,294,766	1,021,000	4,811,000	2,016	2,586,864
1968	2,072,348	1,744,870	3,817,218	10,364,148	1,170,000	4,801,000	1,883	2,578,526
1969	2,093,638	1,867,472	3,961,110	10,433,999	1,232,000	4,825,000	1,844	2,546,244
1970	2,146,539	1,963,887	4,110,425	10,504,320	1,268,000	4,916,000	1,810	2,483,318
1971	2,321,630	1,782,162	4,103,793	10,784,678	1,336,000	4,876,000	1,833	2,481,525
1972	2,525,073	1,572,087	4,097,160	11,065,037	1,445,000	5,346,000	1,767	2,451,844
1973	3,271,963	1,552,233	4,824,196	11,998,339	1,774,000	5,569,000	1,752	2,450,277
1974	3,473,926	1,604,058	5,077,984	11,819,751	2,012,000	5,584,000	1,433	2,381,200
1975	3,720,216	1,624,908	5,345,124	11,641,163	2,205,000	5,425,000	1,530	2,379,058
1976	3,871,399	1,754,917	5,626,317	11,462,575	2,678,000	5,601,000	1,603	2,335,856
1977	4,040,468	2,228,666	6,269,133	12,083,387	2,798,000	5,430,539	1,569	2,303,930
1978	4,297,787	1,941,059	6,238,846	11,563,849	3,016,000	5,176,953	1,585	2,223,807
1979	4,474,735	1,906,025	6,380,760	11,489,322	3,126,000	4,884,434	1,654	2,161,821
1980	4,755,991	962,113	5,718,104	10,128,814	2,972,000	4,664,519	1,654	2,155,073
1981	4,403,735	2,163,364	6,567,099	10,639,870	2,859,000	4,793,943	1,703	2,029,626
1982	4,537,111	2,231,906	6,769,016	11,311,566	3,033,000	4,539,304	1,630	1,995,769
1983	4,464,307	2,069,570	6,533,878	10,492,118	3,266,000	4,255,203	1,904	2,000,433
1984	4,657,673	2,214,074	6,871,747	11,979,553	3,348,000	3,925,856	1,898	1,973,539
1985	5,099,153	2,752,644	7,851,797	12,152,314	3,504,000	3,739,612	1,921	1,925,869
1986	5,711,285	2,936,566	8,647,851	11,464,504	3,826,000	3,662,000	1,900	1,905,984
1987	5,743,318	2,928,071	8,671,389	11,292,924	4,416,000	3,580,000	1,777	1,871,455
1988	5,813,792	3,169,566	8,983,358	11,386,646	4,667,000	3,483,000	1,778	1,826,344
1989	6,151,600	3,143,727	9,295,327	11,227,906	4,882,000	3,438,000	1,744	1,771,856
1990	5,464,400	3,625,100	9,089,500	11,344,415	4,911,000	3,237,000	1,535	1,767,033
1991	5,106,000	3,530,400	8,636,400	10,044,623	5,026,000	3,064,000	1,398	1,702,307
1992	4,713,300	3,534,400	8,247,700	11,960,671	4,860,000	2,998,000	1,367	1,640,853
1993	4,771,400	3,491,900	8,263,300	11,733,462	4,677,000	2,849,000	1,447	1,592,478
1994	5,056,600	3,269,900	8,326,500	11,315,373	4,714,000	2,731,000	1,439	1,557,989
1995	4,897,402	3,394,198	8,291,600	11,625,138	4,797,000	2,534,000	1,414	1,500,745
1996	4,797,283	3,196,917	7,994,200	13,935,935	4,692,000	2,429,000	1,316	1,479,602

Table C.6
Employment

	Brazil				Korea			
	Industrial			Rural	Industrial	Rural		
	Formal	Informal	Total	Total	Total	Total	Households	
	Workers	Workers	Workers	Workers	Workers	Workers	H	Number
1997	4,703,654	3,101,646	7,805,300	13,708,643	4,482,000	2,385,000	1,239	1,439,676
1998	4,476,967	3,152,533	7,629,500	13,321,707	3,898,000	2,480,000	1,241	1,413,017
1999	4,603,882	3,122,518	7,726,400	13,423,527	4,006,000	2,302,000	1,265	1,381,637
2000	4,885,361	3,576,939	8,462,300	13,525,347	4,293,000	2,243,000	1,266	1,383,468
2001	4,976,462	3,479,738	8,456,200	12,192,465	4,267,000	2,148,000	1,269	1,353,687
2002	5,209,774	3,332,026	8,541,800	12,535,507	4,241,000	2,069,000	1,196	1,280,462
2003	5,356,159	3,135,141	8,491,300	12,738,746	4,205,000	1,950,000	1,505	1,264,431
2004	5,926,857	3,225,048	9,151,905	13,635,001	4,290,000	1,825,000	1,530	1,240,406
2005	6,133,461	3,485,768	9,619,229	13,696,485	4,234,000	1,815,000	1,487	1,272,908

Note: H = annual hours worked per household

Table C.7

Capital advanced in Brazil in million R$

	Brazil									
	Social				Industrial			Agrarian		
	FK	CK	LS	T	FK	CK	T	FK*	CK	T
1953	2.00E-10	3.75E-11				1.12E-11	1.12E-11		8.99E-12	
1954	2.96E-10	5.06E-11				1.58E-11	1.58E-11		1.25E-11	
1955	3.40E-10	6.32E-11	4.70E-11	4.50E-10	9.51E-11	1.98E-11	1.15E-10	9.91E-11	1.49E-11	1.14E-10
1956	4.50E-10	7.95E-11	6.06E-11	5.90E-10	1.25E-10	2.60E-11	1.51E-10	1.24E-10	1.68E-11	1.40E-10
1957	5.32E-10	9.69E-11	6.82E-11	6.97E-10	1.46E-10	3.26E-11	1.79E-10	1.44E-10	1.98E-11	1.64E-10
1958	7.49E-10	1.16E-10	8.02E-11	9.45E-10	2.06E-10	4.28E-11	2.49E-10	1.70E-10	2.17E-11	1.92E-10
1959	1.13E-09	1.64E-10	1.16E-10	1.41E-09	3.14E-10	6.69E-11	3.81E-10	2.72E-10	3.01E-11	3.02E-10
1960	1.49E-09	2.32E-10	1.84E-10	1.91E-09	4.26E-10	9.01E-11	5.16E-10	3.63E-10	4.43E-11	4.08E-10
1961	2.24E-09	3.53E-10	2.95E-10	2.88E-09	6.70E-10	1.37E-10	8.07E-10	5.37E-10	6.51E-11	6.03E-10
1962	3.92E-09	5.72E-10	4.75E-10	4.96E-09	1.24E-09	2.16E-10	1.45E-09	8.95E-10	1.11E-10	1.01E-09
1963	7.65E-09	1.05E-09	7.90E-10	9.49E-09	2.48E-09	3.98E-10	2.88E-09	1.62E-09	1.88E-10	1.81E-09
1964	1.43E-08	2.06E-09	1.92E-09	1.83E-08	4.73E-09	7.59E-10	5.48E-09	3.57E-09	3.78E-10	3.95E-09
1965	2.22E-08	3.39E-09	2.67E-09	2.82E-08	7.41E-09	1.17E-09	8.57E-09	5.16E-09	6.00E-10	5.76E-09
1966	3.17E-08	4.79E-09	4.01E-09	4.05E-08	1.06E-08	1.73E-09	1.23E-08	7.11E-09	7.81E-10	7.89E-09
1967	4.41E-08	6.60E-09	4.53E-09	5.52E-08	1.47E-08	2.23E-09	1.70E-08	8.87E-09	1.02E-09	9.89E-09
1968	6.19E-08	9.09E-09	5.16E-09	7.61E-08	2.04E-08	3.18E-09	2.36E-08	1.07E-08	1.21E-09	1.19E-08
1969	8.28E-08	1.20E-08	6.32E-09	1.01E-07	2.71E-08	4.21E-09	3.13E-08	1.32E-08	1.55E-09	1.47E-08
1970	1.07E-07	9.11E-09	9.06E-09	1.25E-07	3.51E-08	5.38E-09	4.05E-08	1.68E-08	2.09E-09	1.89E-08
1971	1.42E-07	1.22E-08	1.30E-08	1.67E-07	4.66E-08	7.44E-09	5.40E-08	2.26E-08	3.05E-09	2.57E-08
1972	1.83E-07	1.61E-08	1.68E-08	2.16E-07	6.30E-08	1.04E-08	7.34E-08	2.91E-08	4.21E-09	3.33E-08
1973	2.52E-07	2.35E-08	2.51E-08	3.01E-07	9.03E-08	1.69E-08	1.07E-07	4.05E-08	6.24E-09	4.67E-08
1974	3.88E-07	3.45E-08	3.71E-08	4.60E-07	1.43E-07	2.59E-08	1.69E-07	5.99E-08	9.09E-09	6.90E-08
1975	5.96E-07	5.25E-08	4.14E-08	6.90E-07	2.20E-07	3.70E-08	2.57E-07	7.39E-08	1.26E-08	8.65E-08
1976	9.21E-07	7.34E-08	5.53E-08	1.05E-06	3.51E-07	5.89E-08	4.10E-07	1.01E-07	2.05E-08	1.22E-07
1977	1.48E-06	1.17E-07	8.00E-08	1.67E-06	5.79E-07	9.05E-08	6.70E-07	1.52E-07	3.80E-08	1.90E-07
1978	2.32E-06	1.71E-07	1.31E-07	2.62E-06	9.33E-07	1.40E-07	1.07E-06	2.35E-07	4.72E-08	2.83E-07
1979	4.18E-06	2.80E-07	2.69E-07	4.73E-06	1.73E-06	2.40E-07	1.97E-06	4.62E-07	7.87E-08	5.40E-07
1980	8.45E-06	6.01E-07	5.66E-07	9.61E-06	3.53E-06	5.12E-07	4.04E-06	9.47E-07	1.74E-07	1.12E-06
1981	2.02E-05	1.23E-06	8.61E-07	2.23E-05	7.73E-06	1.01E-06	8.73E-06	1.81E-06	3.45E-07	2.16E-06
1982	4.33E-05	2.51E-06	1.44E-06	4.73E-05	1.55E-05	2.15E-06	1.77E-05	3.45E-06	6.14E-07	4.07E-06
1983	1.05E-04	5.56E-06	4.18E-06	1.14E-04	3.87E-05	4.39E-06	4.31E-05	9.35E-06	1.70E-06	1.10E-05
1984	3.24E-04	1.72E-05	1.56E-05	3.57E-04	1.18E-04	1.55E-05	1.34E-04	3.12E-05	6.47E-06	3.76E-05
1985	1.28E-03	6.61E-05	4.58E-05	1.39E-03	4.72E-04	6.37E-05	5.35E-04	1.04E-04	2.26E-05	1.26E-04
1986	3.28E-03	1.85E-04	1.33E-04	3.59E-03	1.23E-03	1.67E-04	1.40E-03	2.77E-04	5.90E-05	3.36E-04
1987	1.05E-02	5.77E-04	3.75E-04	1.14E-02	3.88E-03	5.15E-04	4.40E-03	9.61E-04	1.76E-04	1.14E-03
1988	8.90E-02	4.35E-03	2.51E-03	9.58E-02	3.18E-02	3.81E-03	3.56E-02	7.16E-03	1.40E-03	8.56E-03
1989	1.46E+00	6.74E-02	3.50E-02	1.57E+00	4.94E-01	5.53E-02	5.49E-01	1.08E-01	1.82E-02	1.27E-01
1990	3.49E+01	1.60E+00	9.62E-01	3.75E+01	1.15E+01	1.19E+00	1.27E+01	2.80E+00	4.03E-01	3.21E+00
1991	1.71E+02	8.08E+00	4.86E+00	1.84E+02	5.37E+01	5.67E+00	5.94E+01	1.30E+01	2.01E+00	1.50E+01
1992	2.02E+03	8.93E+01	4.94E+01	2.16E+03	5.99E+02	6.24E+01	6.61E+02	1.54E+02	2.07E+01	1.74E+02
1993	4.41E+04	1.96E+03	1.17E+03	4.73E+04	1.25E+04	1.46E+03	1.40E+04	3.40E+03	4.40E+02	3.84E+03
1994	1.05E+06	4.87E+04	2.90E+04	1.13E+06	2.87E+05	3.26E+04	3.19E+05	7.04E+04	1.36E+04	8.41E+04
1995	1.79E+06	8.98E+04	3.99E+04	1.92E+06	4.71E+05	4.63E+04	5.17E+05	9.31E+04	1.54E+04	1.08E+05
1996	1.99E+06	1.05E+05	3.69E+04	2.13E+06	5.31E+05	5.33E+04	5.84E+05	9.59E+04	1.87E+04	1.15E+05
1997	2.15E+06	1.15E+05	4.12E+04	2.31E+06	5.64E+05	5.83E+04	6.22E+05	1.05E+05	2.05E+04	1.25E+05
1998	2.27E+06	1.20E+05	4.50E+04	2.43E+06	6.01E+05	5.73E+04	6.58E+05	1.13E+05	2.18E+04	1.35E+05

Table C.7

Capital advanced in Brazil in million R$

	Brazil									
	Social				Industrial			Agrarian		
	FK	CK	LS	T	FK	CK	T	FK*	CK	T
1999	2.51E+06	1.22E+05	5.38E+04	2.69E+06	6.37E+05	6.12E+04	6.98E+05	1.27E+05	2.32E+04	1.50E+05
2000	2.90E+06	1.38E+05	6.59E+04	3.10E+06	6.46E+05	7.23E+04	7.18E+05	1.48E+05	2.61E+04	1.74E+05
2001	3.31E+06	1.53E+05	7.50E+04	3.54E+06	6.81E+05	7.76E+04	7.59E+05	1.66E+05	3.05E+04	1.96E+05
2002	3.87E+06	1.75E+05	8.72E+04	4.13E+06	7.08E+05	8.58E+04	7.94E+05	1.94E+05	3.85E+04	2.33E+05
2003	4.43E+06	1.97E+05	1.08E+05	4.74E+06	7.36E+05	1.03E+05	8.39E+05	2.38E+05	4.96E+04	2.87E+05
2004	4.95E+06	2.25E+05	1.17E+05	5.29E+06	8.22E+05	1.25E+05	9.46E+05	2.71E+05	5.26E+04	3.23E+05
2005	5.37E+06	2.52E+05	1.14E+05	5.73E+06	8.90E+05	1.33E+05	1.02E+06	2.79E+05	4.80E+04	3.27E+05

Note: FK = fixed capital; CK = circulating capital; LS = livestock; T = total capital; FK* = fixed capital including livestock

Table C.8

Capital advanced in Korea in billion W$

	South Korea								
	Social			Industrial			Agrarian		
	FK	CK	TK	FK	CK	TK	FK	CK	TK
1955	113			12	6	17			
1956	134	93	228	16	7	23	42	51	93
1957	188	117	305	21	9	30	54	63	117
1958	215	123	338	31	11	42	59	67	126
1959	235	132	368	35	12	48	65	73	138
1960	244	135	379	40	12	52	71	76	147
1961	281	169	451	44	20	64	87	74	160
1962	327	200	527	50	21	71	103	102	205
1963	401	269	670	60	33	94	126	132	258
1964	573	362	936	87	53	140	166	169	335
1965	734	414	1,148	111	74	186	174	199	373
1966	844	508	1,352	139	99	238	209	239	448
1967	1,023	604	1,628	185	129	315	247	268	515
1968	1,374	737	2,110	251	181	433	335	301	636
1969	1,814	935	2,749	314	258	572	396	361	757
1970	2,468	1,169	3,637	424	350	773	448	450	897
1971	2,937	1,466	4,403	510	460	970	671	536	1,208
1972	3,784	1,680	5,464	682	573	1,255	947	575	1,522
1973	4,669	2,147	6,816	824	823	1,647	1,062	656	1,718
1974	6,658	3,023	9,680	1,342	1,287	2,629	1,316	796	2,112
1975	9,693	3,924	13,617	2,029	1,646	3,675	1,589	1,040	2,629
1976	12,839	5,180	18,019	2,759	2,302	5,061	2,110	1,345	3,455
1977	16,019	6,377	22,396	3,797	2,842	6,639	2,565	1,566	4,131
1978	19,734	8,724	28,458	5,365	3,827	9,192	2,953	2,172	5,124
1979	31,862	11,638	43,500	9,018	5,212	14,230	3,228	2,850	6,079
1980	51,933	15,732	67,664	15,099	7,064	22,163	3,531	3,643	7,174
1981	68,470	19,596	88,067	19,260	8,815	28,075	4,739	4,396	9,135
1982	78,557	21,562	100,119	22,573	9,709	32,282	6,105	4,520	10,625
1983	87,486	23,415	110,902	25,191	10,187	35,379	8,751	5,509	14,260
1984	101,361	25,064	126,425	28,031	11,026	39,057	8,832	5,887	14,719
1985	119,729	27,972	147,701	31,933	12,436	44,369	8,015	6,186	14,201
1986	134,848	31,365	166,213	36,790	14,386	51,176	7,279	6,634	13,912
1987	155,380	34,867	190,247	43,604	16,913	60,517	7,862	6,741	14,603
1988	180,892	41,107	221,998	54,669	19,885	74,554	9,564	7,487	17,051
1989	209,465	47,948	257,413	66,871	22,850	89,721	10,905	8,550	19,455
1990	231,779	54,127	285,905	81,514	25,132	106,646	12,629	9,192	21,821
1991	283,167	63,756	346,923	103,547	29,114	132,660	14,228	10,091	24,319
1992	347,612	74,976	422,588	125,293	33,822	159,115	15,366	10,991	26,356
1993	402,355	80,472	482,827	142,750	35,074	177,824	17,280	12,047	29,327
1994	475,034	90,153	565,186	157,655	39,176	196,830	19,063	12,650	31,713
1995	564,628	104,690	669,318	182,962	45,700	228,663	20,534	13,253	33,787
1996	665,900	123,090	788,989	212,296	52,869	265,165	21,995	13,949	35,944
1997	788,580	131,387	919,966	247,509	55,651	303,160	20,260	14,441	34,701
1998	1,018,560	128,981	1,147,542	338,388	55,006	393,395	21,295	15,409	36,703
1999	1,085,309	125,203	1,210,512	363,748	54,099	417,847	21,049	15,795	36,844
2000	1,172,411	125,148	1,297,558	381,846	54,013	435,859	22,305	16,659	38,963

Table C.8

Capital advanced in Korea in billion W$

	South Korea								
	Social			Industrial			Agrarian		
	FK	CK	TK	FK	CK	TK	FK	CK	TK
2001	1,296,840	134,500	1,431,340	400,997	56,009	457,006	22,034	17,841	39,875
2002	1,406,229	175,116	1,581,345	404,030	73,556	477,586	21,018	17,386	38,404
2003	1,537,663	189,290	1,726,953	420,040	78,508	498,548	37,514	20,137	57,651
2004	1,682,130	215,611	1,897,741	440,716	92,345	533,061	38,572	21,751	60,323
2005	1,821,491	234,592	2,056,083	489,699	101,310	591,009	42,397	22,905	65,302

Note: FK = fixed capital; CK = circulating capital; T = total capital

Table C.9

Composition of the stock of fixed agrarian capital in Brazil

	Machinery	Buildings	Plantations	Livestock
		million R$		
1950		5.385E-12	5.991E-12	
1951		6.647E-12	7.342E-12	
1952		7.961E-12	8.001E-12	
1953		9.617E-12	9.522E-12	
1954		1.270E-11	1.164E-11	
1955	2.169E-11	1.610E-11	1.425E-11	4.702E-11
1956	2.464E-11	2.082E-11	1.758E-11	6.060E-11
1957	2.809E-11	2.629E-11	2.169E-11	6.816E-11
1958	3.156E-11	3.161E-11	2.679E-11	8.016E-11
1959	7.529E-11	4.475E-11	3.615E-11	1.161E-10
1960	8.561E-11	5.528E-11	3.888E-11	1.837E-10
1961	1.055E-10	8.341E-11	5.395E-11	2.945E-10
1962	2.222E-10	1.240E-10	7.400E-11	4.746E-10
1963	4.581E-10	2.437E-10	1.308E-10	7.905E-10
1964	9.727E-10	4.622E-10	2.206E-10	1.919E-09
1965	1.341E-09	8.154E-10	3.310E-10	2.675E-09
1966	1.568E-09	1.154E-09	3.763E-10	4.011E-09
1967	2.157E-09	1.683E-09	4.988E-10	4.529E-09
1968	2.629E-09	2.298E-09	6.210E-10	5.158E-09
1969	3.276E-09	2.826E-09	7.554E-10	6.317E-09
1970	3.296E-09	3.481E-09	9.240E-10	9.062E-09
1971	3.926E-09	4.443E-09	1.242E-09	1.300E-08
1972	4.776E-09	5.763E-09	1.728E-09	1.684E-08
1973	5.212E-09	7.841E-09	2.359E-09	2.507E-08
1974	6.361E-09	1.239E-08	3.993E-09	3.713E-08
1975	9.035E-09	1.812E-08	5.394E-09	4.138E-08
1976	1.131E-08	2.778E-08	7.106E-09	5.528E-08
1977	1.870E-08	4.309E-08	9.902E-09	8.005E-08
1978	2.205E-08	6.689E-08	1.529E-08	1.312E-07
1979	3.768E-08	1.263E-07	2.909E-08	2.686E-07
1980	8.264E-08	2.436E-07	5.565E-08	5.656E-07
1981	2.530E-07	5.748E-07	1.228E-07	8.613E-07
1982	5.502E-07	1.228E-06	2.345E-07	1.441E-06
1983	1.699E-06	2.927E-06	5.367E-07	4.183E-06
1984	4.372E-06	9.501E-06	1.667E-06	1.562E-05
1985	1.823E-05	3.343E-05	6.174E-06	4.584E-05
1986	3.432E-05	9.290E-05	1.727E-05	1.328E-04
1987	0.000160	0.000355	0.000071	0.000375
1988	0.001412	0.002661	0.000579	0.002510
1989	0.019285	0.044491	0.009709	0.034978
1990	0.344957	1.232885	0.263212	0.961606
1991	2.9068	4.3551	0.8749	4.8551
1992	41.6180	52.9829	9.7028	49.4452
1993	876.642	1,159.259	195.447	1,170.139
1994	9,149.025	27,932.994	4,351.043	29,001.251
1995	14,247.585	33,767.287	5,175.681	39,877.315
1996	15,353.611	38,558.337	5,067.028	36,946.528

Table C.9

Composition of the stock of fixed agrarian Capital in Brazil

	Machinery	Buildings	Plantations	Livestock
		million R$		
1997	16,421.510	41,669.688	5,702.844	41,182.666
1998	17,831.921	43,697.848	6,320.538	44,956.593
1999	20,977.945	45,649.300	6,550.378	53,768.597
2000	24,499.192	49,812.246	8,104.490	65,915.262
2001	28,590.841	52,720.736	9,397.382	75,045.888
2002	34,427.610	61,148.779	11,610.335	87,226.325
2003	50,461.112	65,331.099	13,671.780	108,098.682
2004	63,762.638	73,456.314	16,250.301	117,185.078
2005	71,911.054	76,803.264	16,857.316	113,897.909

Table C.10

Valorisation of agrarian capital in Brazil

	VA	FKC	LC	P	RoP	NP	LR
		R$ millions			%	R$ millions	
1953	3.916E-11	1.326E-12	1.124E-11	2.660E-11			
1954	5.436E-11	3.183E-12	1.560E-11	3.558E-11			
1955	6.505E-11	2.538E-12	1.867E-11	4.385E-11	38.47		
1956	7.309E-11	3.057E-12	2.097E-11	4.906E-11	34.94	2.550E-11	2.356E-11
1957	8.615E-11	3.680E-12	2.472E-11	5.775E-11	35.21	2.802E-11	2.973E-11
1958	9.465E-11	4.372E-12	2.716E-11	6.313E-11	32.90	3.826E-11	2.486E-11
1959	1.313E-10	7.704E-12	3.766E-11	8.590E-11	28.40	7.402E-11	1.188E-11
1960	1.868E-10	8.770E-12	5.359E-11	1.244E-10	30.51	9.860E-11	2.581E-11
1961	2.659E-10	1.172E-11	7.628E-11	1.779E-10	29.52	1.646E-10	1.330E-11
1962	4.404E-10	2.050E-11	1.264E-10	2.936E-10	29.18	2.159E-10	7.763E-11
1963	7.221E-10	4.057E-11	2.072E-10	4.743E-10	26.19	3.093E-10	1.650E-10
1964	1.433E-09	8.083E-11	3.996E-10	9.530E-10	24.11	6.672E-10	2.858E-10
1965	2.246E-09	1.194E-10	6.079E-10	1.519E-09	26.35	8.870E-10	6.316E-10
1966	2.885E-09	1.461E-10	7.575E-10	1.982E-09	25.12	1.132E-09	8.503E-10
1967	3.726E-09	2.039E-10	9.477E-10	2.574E-09	26.03	1.139E-09	1.435E-09
1968	4.348E-09	2.598E-10	1.071E-09	3.018E-09	25.33	1.742E-09	1.276E-09
1969	5.494E-09	3.235E-10	1.308E-09	3.862E-09	26.24	2.115E-09	1.748E-09
1970	7.330E-09	3.334E-10	1.686E-09	5.311E-09	28.17	3.314E-09	1.997E-09
1971	1.044E-08	4.194E-10	2.358E-09	7.658E-09	29.85	4.913E-09	2.744E-09
1972	1.404E-08	5.400E-10	3.117E-09	1.038E-08	31.17	6.628E-09	3.757E-09
1973	2.031E-08	6.743E-10	4.428E-09	1.521E-08	32.55	1.220E-08	3.012E-09
1974	2.889E-08	9.882E-10	6.184E-09	2.172E-08	31.50	1.759E-08	4.129E-09
1975	3.904E-08	1.408E-09	8.198E-09	2.943E-08	34.02	2.213E-08	7.301E-09
1976	6.126E-08	1.962E-09	1.335E-08	4.594E-08	37.65	2.871E-08	1.723E-08
1977	1.089E-07	3.068E-09	2.462E-08	8.123E-08	42.81	3.592E-08	4.531E-08
1978	1.302E-07	4.356E-09	3.047E-08	9.540E-08	33.75	4.789E-08	4.751E-08
1979	2.096E-07	8.033E-09	5.072E-08	1.508E-07	27.91	8.235E-08	6.848E-08
1980	4.480E-07	1.617E-08	1.120E-07	3.199E-07	28.51	2.071E-07	1.127E-07
1981	8.751E-07	4.057E-08	2.118E-07	6.228E-07	28.87	2.979E-07	3.249E-07
1982	1.536E-06	8.536E-08	3.594E-07	1.091E-06	26.83	5.929E-07	4.983E-07
1983	4.420E-06	2.250E-07	9.988E-07	3.196E-06	28.93	1.485E-06	1.711E-06
1984	1.573E-05	6.712E-07	3.430E-06	1.163E-05	30.91	5.775E-06	5.857E-06
1985	5.429E-05	2.544E-06	1.140E-05	4.034E-05	31.95	1.875E-05	2.160E-05
1986	1.363E-04	6.233E-06	2.916E-05	1.009E-04	30.00	3.958E-05	6.129E-05
1987	3.914E-04	2.568E-05	8.533E-05	2.804E-04	24.65	1.343E-04	1.461E-04
1988	3.000E-03	2.087E-04	6.661E-04	2.126E-03	24.82	8.162E-04	1.310E-03
1989	3.770E-02	3.278E-03	8.520E-03	2.590E-02	20.44	8.920E-03	1.698E-02
1990	8.042E-01	8.124E-02	1.850E-01	5.380E-01	16.78	1.737E-01	3.642E-01
1991	4.124E+00	3.764E-01	9.651E-01	2.783E+00	18.55	1.088E+00	1.695E+00
1992	4.362E+01	4.867E+00	1.038E+01	2.838E+01	16.27	1.382E+01	1.456E+01
1993	9.555E+02	1.043E+02	2.312E+02	6.200E+02	16.14	4.400E+02	1.799E+02
1994	3.046E+04	1.885E+03	7.493E+03	2.108E+04	25.08	8.657E+03	1.242E+04
1995	3.555E+04	2.459E+03	8.889E+03	2.421E+04	22.31	5.979E+03	1.823E+04
1996	4.096E+04	2.729E+03	1.024E+04	2.799E+04	24.42	5.881E+03	2.211E+04
1997	4.482E+04	2.985E+03	1.121E+04	3.063E+04	24.42	7.846E+03	2.279E+04
1998	4.784E+04	3.217E+03	1.196E+04	3.267E+04	24.26	7.523E+03	2.514E+04
1999	5.078E+04	3.515E+03	1.270E+04	3.457E+04	23.03	1.124E+04	2.333E+04

Table C.10
Valorisation of agrarian capital in Brazil

	VA	FKC	LC	P	RoP	NP	LR
		R$ millions			%	R$ millions	
2000	5.724E+04	4.023E+03	1.431E+04	3.891E+04	22.30	1.544E+04	2.347E+04
2001	6.682E+04	4.499E+03	1.670E+04	4.562E+04	23.24	1.985E+04	2.577E+04
2002	8.425E+04	5.383E+03	2.106E+04	5.781E+04	24.82	2.786E+04	2.995E+04
2003	1.086E+05	6.617E+03	2.715E+04	7.485E+04	26.07	4.727E+04	2.757E+04
2004	1.152E+05	7.904E+03	2.880E+04	7.849E+04	24.28	5.825E+04	2.024E+04
2005	1.052E+05	8.570E+03	2.629E+04	7.030E+04	21.47	5.117E+04	1.913E+04

Note: VA = value-added; FKC = fixed capital consumption; LC = labour costs; P = profits; RoP = rate of profit; NP = normal profits; LR = land rent

Table C.11
Valorisation of industrial capital in Brazil

	VA	FKC	LC	P	RoP
		R$ millions			%
1953	3.167E-11		1.820E-11	1.347E-11	
1954	4.524E-11		2.492E-11	2.031E-11	
1955	5.658E-11	3.517E-12	3.119E-11	2.187E-11	19.04
1956	7.378E-11	4.635E-12	4.167E-11	2.748E-11	18.16
1957	9.084E-11	5.413E-12	5.486E-11	3.056E-11	17.09
1958	1.231E-10	7.619E-12	6.591E-11	4.960E-11	19.94
1959	1.984E-10	1.163E-11	9.345E-11	9.329E-11	24.48
1960	2.689E-10	1.577E-11	1.284E-10	1.248E-10	24.18
1961	4.235E-10	2.481E-11	1.783E-10	2.204E-10	27.31
1962	6.620E-10	4.581E-11	3.041E-10	3.121E-10	21.47
1963	1.201E-09	9.181E-11	6.176E-10	4.918E-10	17.08
1964	2.304E-09	1.748E-10	1.204E-09	9.258E-10	16.88
1965	3.532E-09	2.741E-10	1.938E-09	1.320E-09	15.39
1966	5.191E-09	3.924E-10	3.029E-09	1.769E-09	14.34
1967	6.637E-09	5.446E-10	4.141E-09	1.951E-09	11.51
1968	9.812E-09	7.562E-10	5.603E-09	3.453E-09	14.62
1969	1.304E-08	1.003E-09	7.538E-09	4.500E-09	14.37
1970	1.741E-08	1.300E-09	8.985E-09	7.122E-09	17.58
1971	2.373E-08	1.723E-09	1.166E-08	1.034E-08	19.15
1972	3.260E-08	2.330E-09	1.566E-08	1.461E-08	19.90
1973	5.314E-08	3.342E-09	2.181E-08	2.798E-08	26.11
1974	8.006E-08	5.296E-09	3.164E-08	4.312E-08	25.51
1975	1.138E-07	8.143E-09	3.994E-08	6.576E-08	25.58
1976	1.749E-07	1.299E-08	6.544E-08	9.648E-08	23.53
1977	2.563E-07	2.143E-08	1.081E-07	1.268E-07	18.93
1978	3.855E-07	3.454E-08	1.690E-07	1.820E-07	16.94
1979	6.445E-07	6.390E-08	2.809E-07	2.997E-07	15.24
1980	1.386E-06	1.305E-07	5.099E-07	7.458E-07	18.46
1981	2.595E-06	2.859E-07	1.103E-06	1.206E-06	13.81
1982	5.444E-06	5.752E-07	2.289E-06	2.580E-06	14.58
1983	1.173E-05	1.432E-06	4.502E-06	5.793E-06	13.44
1984	3.868E-05	4.381E-06	1.375E-05	2.056E-05	15.35
1985	1.544E-04	1.745E-05	5.748E-05	7.948E-05	14.84
1986	3.907E-04	4.560E-05	1.804E-04	1.648E-04	11.77
1987	1.207E-03	1.437E-04	5.436E-04	5.193E-04	11.81
1988	8.806E-03	1.176E-03	4.238E-03	3.392E-03	9.53
1989	1.247E-01	1.828E-02	6.770E-02	3.867E-02	7.04
1990	2.636E+00	4.254E-01	1.524E+00	6.874E-01	5.42
1991	1.317E+01	1.988E+00	6.869E+00	4.308E+00	7.25
1992	1.494E+02	2.215E+01	7.488E+01	5.236E+01	7.92
1993	3.672E+03	4.625E+02	1.611E+03	1.599E+03	11.45
1994	8.284E+04	1.060E+04	3.936E+04	3.287E+04	10.30
1995	1.147E+05	1.742E+04	6.876E+04	2.850E+04	5.51
1996	1.248E+05	1.964E+04	7.517E+04	2.996E+04	5.13
1997	1.385E+05	2.086E+04	7.868E+04	3.892E+04	6.25
1998	1.361E+05	2.222E+04	7.712E+04	3.676E+04	5.59
1999	1.496E+05	2.356E+04	7.375E+04	5.224E+04	7.49

Table C.11

Valorisation of industrial capital in Brazil

	VA	FKC	LC	P	RoP
		R$ millions			%
2000	1.759E+05	2.390E+04	8.848E+04	6.356E+04	8.85
2001	1.916E+05	2.520E+04	8.972E+04	7.673E+04	10.11
2002	2.146E+05	2.620E+04	9.338E+04	9.498E+04	11.96
2003	2.650E+05	2.722E+04	9.960E+04	1.381E+05	16.46
2004	3.202E+05	3.040E+04	1.193E+05	1.705E+05	18.02
2005	3.333E+05	3.295E+04	1.405E+05	1.599E+05	15.63

Note: VA = value-added; FKC = fixed capital consumption; LC = labour costs; P = profits; RoP = rate of profit; NP = normal profits

Table C.12

Valorisation of total capital in Brazil

	VA	FKC	LC	LC	P	RoP
			Urban	Rural		
			R$ millions			%
1953	1.780E-10	7.407E-12	6.033E-11	1.124E-11	9.903E-11	
1954	2.441E-10	1.093E-11	8.106E-11	1.560E-11	1.365E-10	
1955	2.963E-10	1.259E-11	1.054E-10	1.867E-11	1.596E-10	35.42
1956	3.742E-10	1.666E-11	1.438E-10	2.097E-11	1.928E-10	32.66
1957	4.544E-10	1.967E-11	1.819E-10	2.472E-11	2.281E-10	32.75
1958	5.655E-10	2.770E-11	2.111E-10	2.716E-11	2.995E-10	31.70
1959	8.435E-10	4.178E-11	2.772E-10	3.766E-11	4.868E-10	34.55
1960	1.157E-09	5.515E-11	4.009E-10	5.359E-11	6.475E-10	33.97
1961	1.692E-09	8.275E-11	6.374E-10	7.628E-11	8.955E-10	31.05
1962	2.710E-09	1.449E-10	1.003E-09	1.264E-10	1.436E-09	28.92
1963	4.864E-09	2.830E-10	1.923E-09	2.072E-10	2.451E-09	25.84
1964	9.532E-09	5.295E-10	3.612E-09	3.996E-10	4.991E-09	27.29
1965	1.551E-08	8.198E-10	5.794E-09	6.079E-10	8.292E-09	29.38
1966	2.283E-08	1.173E-09	8.289E-09	7.575E-10	1.261E-08	31.14
1967	3.010E-08	1.630E-09	1.181E-08	9.477E-10	1.571E-08	28.47
1968	4.188E-08	2.290E-09	1.603E-08	1.071E-09	2.249E-08	29.53
1969	5.505E-08	3.065E-09	2.076E-08	1.308E-09	2.993E-08	29.60
1970	7.066E-08	3.966E-09	2.255E-08	1.686E-09	4.246E-08	33.87
1971	9.393E-08	5.252E-09	2.928E-08	2.358E-09	5.704E-08	34.12
1972	1.260E-07	6.778E-09	3.739E-08	3.117E-09	7.874E-08	36.43
1973	1.861E-07	9.342E-09	5.367E-08	4.428E-09	1.187E-07	39.42
1974	2.710E-07	1.437E-08	7.936E-08	6.184E-09	1.710E-07	37.19
1975	3.816E-07	2.205E-08	1.343E-07	8.198E-09	2.171E-07	31.47
1976	5.942E-07	3.407E-08	1.569E-07	1.335E-08	3.898E-07	37.14
1977	9.065E-07	5.458E-08	2.576E-07	2.462E-08	5.697E-07	34.06
1978	1.315E-06	8.569E-08	4.240E-07	3.047E-08	7.752E-07	29.60
1979	2.168E-06	1.547E-07	6.869E-07	5.072E-08	1.275E-06	26.96
1980	4.548E-06	3.125E-07	1.538E-06	1.120E-07	2.586E-06	26.90
1981	8.733E-06	7.474E-07	3.417E-06	2.118E-07	4.357E-06	19.54
1982	1.770E-05	1.603E-06	7.195E-06	3.594E-07	8.545E-06	18.07
1983	3.978E-05	3.874E-06	1.516E-05	9.988E-07	1.974E-05	17.25
1984	1.265E-04	1.200E-05	4.435E-05	3.430E-06	6.672E-05	18.68
1985	4.755E-04	4.727E-05	1.747E-04	1.140E-05	2.421E-04	17.43
1986	1.274E-03	1.212E-04	5.393E-04	2.916E-05	5.840E-04	16.25
1987	4.038E-03	3.869E-04	1.700E-03	8.533E-05	1.866E-03	16.35
1988	2.938E-02	3.292E-03	1.339E-02	6.661E-04	1.203E-02	12.55
1989	4.256E-01	5.412E-02	2.240E-01	8.520E-03	1.389E-01	8.88
1990	1.155E+01	1.293E+00	5.097E+00	1.850E-01	4.974E+00	13.26
1991	6.029E+01	6.317E+00	2.434E+01	9.651E-01	2.866E+01	15.61
1992	6.410E+02	7.477E+01	2.790E+02	1.038E+01	2.769E+02	12.82
1993	1.410E+04	1.633E+03	6.036E+03	2.312E+02	6.197E+03	13.11
1994	3.492E+05	3.897E+04	1.476E+05	7.493E+03	1.552E+05	13.72
1995	7.056E+05	6.608E+04	2.664E+05	8.889E+03	3.643E+05	19.02
1996	8.440E+05	7.374E+04	2.990E+05	1.024E+04	4.610E+05	21.60
1997	9.391E+05	7.958E+04	3.248E+05	1.121E+04	5.235E+05	22.69
1998	9.793E+05	8.400E+04	3.348E+05	1.196E+04	5.485E+05	22.53

Table C.12

Valorisation of total capital in Brazil

	VA	FKC	LC	LC	P	RoP
			Urban	Rural		
			R$ millions			%
1999	1.065E+06	9.293E+04	3.205E+05	1.270E+04	6.389E+05	23.77
2000	1.179E+06	1.072E+05	3.787E+05	1.431E+04	6.793E+05	21.91
2001	1.302E+06	1.225E+05	4.317E+05	1.670E+04	7.313E+05	20.67
2002	1.478E+06	1.430E+05	4.887E+05	2.106E+04	8.251E+05	19.99
2003	1.700E+06	1.640E+05	5.279E+05	2.715E+04	9.809E+05	20.70
2004	1.941E+06	1.832E+05	6.164E+05	2.880E+04	1.113E+06	21.03
2005	2.147E+06	1.985E+05	7.175E+05	2.629E+04	1.205E+06	21.02

Note: VA = value-added; FKC = fixed capital consumption; LC = labour costs; P = profits; RoP = rate of profit; NP = normal profits

Table C.13

Valorisation of agrarian capital in Korea

	VA	FKC	LC	P	RoP	NP	LR
		W$ billions			%	W$ billions	
1956	71.9	0.9	58.4	12.6	13.6	23.4	-10.8
1957	89.7	1.0	71.6	17.0	14.6	23.4	-6.4
1958	84.2	1.1	76.8	6.3	5.0	25.2	-18.9
1959	74.2	1.1	85.1	-12.0	-8.7	31.6	-43.5
1960	91.1	1.3	86.9	2.8	1.9	35.7	-32.9
1961	116.1	1.4	96.3	18.3	11.4	42.7	-24.4
1962	132.9	2.1	110.7	20.2	9.8	62.3	-42.1
1963	221.4	2.0	144.1	75.2	29.2	93.9	-18.7
1964	340.2	4.3	178.0	157.9	47.1	150.2	7.7
1965	309.6	4.4	190.2	114.9	30.8	158.9	-44.0
1966	364.1	6.0	222.2	135.9	30.4	184.5	-48.6
1967	394.4	7.4	253.5	133.5	25.9	158.1	-24.5
1968	477.8	9.8	281.7	186.3	29.3	160.1	26.2
1969	607.9	12.5	325.9	269.5	35.6	171.2	98.3
1970	735.9	16.2	409.0	310.7	34.6	175.4	135.4
1971	926.1	22.2	492.7	411.2	34.1	195.4	215.8
1972	1,120.8	25.1	513.9	581.8	38.2	359.4	222.4
1973	1,347.0	38.2	551.9	756.9	44.0	461.1	295.8
1974	1,890.5	48.8	543.7	1,298.0	61.5	478.7	819.4
1975	2,551.9	60.0	717.2	1,774.7	67.5	601.9	1,172.7
1976	3,292.1	74.5	895.6	2,322.0	67.2	797.9	1,524.2
1977	4,000.9	115.5	1,088.9	2,796.5	67.7	858.2	1,938.3
1978	4,944.0	143.0	1,523.8	3,277.2	64.0	958.1	2,319.1
1979	5,924.1	179.1	2,357.5	3,387.5	55.7	875.0	2,512.5
1980	5,553.3	192.6	3,048.4	2,312.3	32.2	667.6	1,644.7
1981	7,310.6	249.4	3,405.6	3,655.6	40.0	954.1	2,701.5
1982	7,841.1	289.3	3,374.5	4,177.3	39.3	1,125.5	3,051.8
1983	8,390.3	450.5	4,093.9	3,845.9	27.0	1,777.4	2,068.4
1984	9,100.3	487.3	4,209.8	4,403.2	29.9	2,209.4	2,193.8
1985	10,128.8	547.1	4,355.7	5,226.0	36.8	2,225.4	3,000.6
1986	10,489.1	604.1	4,550.9	5,334.1	38.3	2,298.7	3,035.4
1987	11,071.6	658.9	4,266.2	6,146.5	42.1	2,494.0	3,652.5
1988	13,166.8	782.6	4,790.7	7,593.5	44.5	2,569.2	5,024.3
1989	13,828.0	854.9	5,693.2	7,279.9	37.4	2,510.8	4,769.1
1990	14,845.3	937.4	6,251.0	7,656.9	35.1	2,437.6	5,219.4
1991	16,002.2	1,078.3	7,231.3	7,692.6	31.6	2,661.7	5,030.9
1992	17,742.9	1,201.8	8,038.0	8,503.1	32.3	2,431.8	6,071.3
1993	17,951.4	1,520.5	8,773.5	7,657.4	26.1	2,972.3	4,685.1
1994	20,312.7	1,773.6	8,834.1	9,705.0	30.6	3,775.8	5,929.2
1995	22,391.7	1,904.0	8,881.2	11,606.5	34.4	3,758.9	7,847.6
1996	23,528.2	2,155.4	8,965.7	12,407.1	34.5	3,216.7	9,190.4
1997	23,450.1	2,463.8	8,907.7	12,078.6	34.8	3,441.2	8,637.4
1998	21,939.7	2,869.9	8,617.2	10,452.6	28.5	3,382.1	7,070.6
1999	24,393.0	2,951.2	9,619.4	11,822.4	32.1	3,841.6	7,980.8
2000	24,602.9	3,106.9	10,839.9	10,656.1	27.3	4,492.6	6,163.4
2001	24,374.2	3,100.9	11,324.2	9,949.1	25.0	3,915.8	6,033.3
2002	24,207.4	3,264.1	10,587.3	10,356.0	27.0	3,877.5	6,478.5
2003	23,725.2	3,550.1	14,409.0	5,766.1	10.0	5,761.9	4.2
2004	25,763.7	3,808.8	14,723.3	7,231.6	12.0	7,358.1	-126.5
2005	24,110.5	4,126.1	15,454.9	4,529.5	6.9	6,961.9	-2,432.4

Note: VA = value-added; FKC = fixed capital consumption; LC = labour costs; P = profits; RoP = rate of profit; NP = normal profits; LR = land rent

Table C.14

Valorisation of industrial capital in Korea

	VA	FKC	LC	P	RoP
		W$ billions			%
1955	11.69	0.55	7.06	4.08	23.84
1956	15.69	0.69	9.16	5.83	25.29
1957	18.98	1.05	11.82	6.12	20.10
1958	22.30	1.25	12.67	8.38	20.04
1959	26.43	1.46	14.11	10.85	22.82
1960	29.28	1.74	14.79	12.75	24.30
1961	36.83	1.96	17.85	17.02	26.63
1962	43.38	2.28	19.52	21.57	30.30
1963	66.43	2.85	29.48	34.11	36.45
1964	104.76	4.20	37.56	63.00	44.86
1965	138.53	5.45	53.97	79.11	42.63
1966	173.43	6.91	68.61	97.91	41.22
1967	208.68	9.11	103.02	96.54	30.67
1968	270.59	12.34	149.35	108.90	25.17
1969	355.97	15.41	211.00	129.57	22.63
1970	444.70	20.87	272.66	151.18	19.55
1971	549.50	21.26	371.30	156.94	16.18
1972	749.90	29.16	424.48	296.27	23.61
1973	1,113.50	36.21	635.44	441.85	26.83
1974	1,526.20	59.70	870.64	595.86	22.67
1975	2,022.90	91.21	1,090.21	841.48	22.90
1976	3,029.70	124.84	1,736.23	1,168.62	23.09
1977	3,855.80	172.71	2,303.82	1,379.27	20.77
1978	5,256.40	243.96	3,293.91	1,718.53	18.70
1979	6,837.70	408.18	4,381.24	2,048.28	14.39
1980	8,339.50	687.96	5,589.03	2,062.52	9.31
1981	10,749.20	896.22	6,920.65	2,932.33	10.44
1982	12,348.70	1,075.97	7,853.32	3,419.41	10.59
1983	15,098.80	1,227.97	9,460.91	4,409.92	12.46
1984	18,355.60	1,393.85	11,098.96	5,862.79	15.01
1985	20,342.70	1,608.85	11,780.93	6,952.92	15.67
1986	25,272.80	1,871.83	14,945.37	8,455.59	16.52
1987	30,962.70	2,227.74	18,399.68	10,335.28	17.08
1988	37,491.00	2,783.63	23,473.82	11,233.55	15.07
1989	40,252.50	3,401.81	25,271.63	11,579.06	12.91
1990	45,363.40	4,149.83	29,300.12	11,913.46	11.17
1991	55,511.10	5,249.16	35,741.91	14,520.03	10.95
1992	61,451.80	6,351.01	40,420.05	14,680.74	9.23
1993	69,902.50	7,311.71	44,568.52	18,022.28	10.13
1994	82,764.70	8,186.46	51,143.70	23,434.54	11.91
1995	98,530.00	9,574.78	63,515.42	25,439.80	11.13
1996	106,339.10	11,143.90	71,464.77	23,730.44	8.95
1997	114,362.50	13,052.50	71,246.27	30,063.73	9.92
1998	119,065.60	17,598.25	65,217.70	36,249.65	9.21
1999	132,143.40	17,682.74	70,893.35	43,567.30	10.43
2000	150,331.00	17,999.64	82,074.96	50,256.40	11.53
2001	150,869.70	18,615.73	87,375.08	44,878.89	9.82

Table C.14

Valorisation of industrial capital in Korea

	VA	FKC	LC	P	RoP
		W$ billions			%
2002	161,056.80	18,975.79	93,860.11	48,220.90	10.10
2003	168,246.00	19,408.60	99,010.02	49,827.38	9.99
2004	197,480.60	19,737.37	112,721.60	65,021.62	12.20
2005	203,680.50	19,896.54	120,775.56	63,008.40	10.66

Note: VA = value-added; FKC = fixed capital consumption; LC = labour costs; P = profits; RoP = rate of profit; NP = normal profits

Table C.15

Valorisation of total capital in Korea

	VA	FKC	LC	LC	P	RoP
			Urban	Rural		
			W$ billions			%
1956	152.8	5.2	34.9	58.4	54.3	23.87
1957	199.3	7.5	45.0	71.6	75.1	24.62
1958	207.0	8.8	48.3	76.8	73.1	21.64
1959	220.0	10.0	53.7	85.1	71.2	19.37
1960	247.6	10.7	56.3	86.9	93.7	24.71
1961	296.7	12.9	68.0	96.3	119.6	26.54
1962	358.9	15.8	91.3	110.7	141.1	26.79
1963	508.7	20.2	132.9	144.1	211.6	31.59
1964	724.1	22.8	169.4	178.0	353.9	37.82
1965	812.7	30.8	230.8	190.2	360.9	31.45
1966	1,042.4	40.0	284.1	222.2	496.1	36.69
1967	1,282.4	51.4	384.7	253.5	592.8	36.42
1968	1,659.6	72.9	543.8	281.7	761.2	36.07
1969	2,169.2	98.8	763.8	325.9	980.7	35.67
1970	2,775.1	132.0	1,010.8	409.0	1,223.3	33.64
1971	3,434.5	158.6	1,409.1	492.7	1,374.2	31.21
1972	4,241.1	204.6	1,478.5	513.9	2,044.1	37.41
1973	5,499.0	264.9	1,924.6	551.9	2,757.6	40.46
1974	7,845.4	391.9	2,525.8	543.7	4,384.0	45.29
1975	10,477.8	571.7	3,098.1	717.2	6,090.8	44.73
1976	14,410.8	769.6	4,415.8	895.6	8,329.8	46.23
1977	18,502.0	988.2	6,077.8	1,088.9	10,347.1	46.20
1978	24,944.7	1,261.0	8,993.9	1,523.8	13,166.1	46.26
1979	32,049.4	1,962.7	12,218.1	2,357.5	15,511.1	35.66
1980	39,109.6	3,010.2	16,959.8	3,048.4	16,091.2	23.78
1981	49,305.7	3,907.2	22,340.4	3,405.6	19,652.6	22.32
1982	56,676.8	4,500.8	25,477.8	3,374.5	23,323.7	23.30
1983	66,685.1	5,083.4	29,691.5	4,093.9	27,816.3	25.08
1984	76,523.5	5,918.3	34,819.0	4,209.8	31,576.5	24.98
1985	85,699.1	7,046.0	37,758.1	4,355.7	36,539.2	24.74
1986	100,254.1	8,106.7	46,261.9	4,550.9	41,334.6	24.87
1987	117,938.2	9,594.4	53,224.1	4,266.2	50,853.6	26.73
1988	140,524.8	11,345.6	67,328.2	4,790.7	57,060.3	25.70
1989	158,620.1	13,332.1	73,102.4	5,693.2	66,492.4	25.83
1990	191,382.8	15,137.6	88,586.5	6,251.0	81,407.8	28.47
1991	231,428.2	18,382.8	110,831.2	7,231.3	94,982.9	27.38
1992	263,993.2	21,929.5	133,161.6	8,038.0	100,864.0	23.87
1993	298,761.6	25,055.1	156,137.5	8,773.5	108,795.5	22.53
1994	349,972.6	29,650.8	185,707.8	8,834.1	125,779.8	22.25
1995	409,653.6	35,155.8	236,742.9	8,881.2	128,873.7	19.25
1996	460,952.6	41,140.4	280,619.5	8,965.7	130,226.9	16.51
1997	506,313.6	47,829.5	299,307.5	8,907.7	150,268.9	16.33
1998	501,027.2	58,822.5	292,091.0	8,617.2	141,496.6	12.33
1999	549,005.0	63,399.6	318,347.6	9,619.4	157,638.4	13.02
2000	603,236.0	69,446.3	361,584.8	10,839.9	161,364.9	12.44
2001	651,415.3	76,921.1	397,744.0	11,324.2	165,426.0	11.56

Table C.15

Valorisation of total capital in Korea

	VA	FKC	LC	LC	P	RoP
			Urban	Rural		
			W$ billions			%
2002	720,539.0	84,021.5	444,845.1	10,587.3	181,085.1	11.5
2003	767,113.7	92,153.8	475,365.8	14,409.0	185,185.1	10.7
2004	826,892.7	100,759.9	544,742.3	14,723.3	166,667.2	8.8
2005	865,240.9	108,804.9	600,198.0	15,454.9	140,783.1	6.8

Note: VA = value-added; FKC = fixed capital consumption; LC = labour costs; P = profits; RoP = rate of profit

Table C.16

Exports in million US$

	Brazil					Korea			
	Primary	S-I	Industrial	Total	Total*	Primary	Industrial	Total	Total*
1947	1,095			1,152	9,871				
1948	1,121			1,180	9,357				
1949	1,042			1,096	8,487				
1950	1,288			1,355	10,642				
1951	1,681			1,769	12,860				
1952	1,347			1,418	10,086				
1953	1,462			1,539	10,866	34			
1954	1,484			1,562	10,978	19			
1955	1,352			1,423	10,036	13		18	127
1956	1,408			1,482	10,296	20		25	174
1957	1,322			1,392	9,348	17		23	154
1958	1,181			1,243	8,128	11		14	92
1959	1,218			1,282	8,305	14		20	130
1960	1,205			1,269	8,098	21		32	204
1961	1,333			1,403	8,859	23		41	259
1962	1,153		37	1,214	7,582	29	10	56	350
1963	1,336		42	1,406	8,678	27	39	87	537
1964	1,221	115	205	1,430	8,708	33	55	118	719
1965	1,301	154	284	1,595	9,557	41	103	173	1,036
1966	1,445	141	293	1,741	10,129	57	152	251	1,460
1967	1,302	147	343	1,654	9,360	61	214	321	1,817
1968	1,492	178	381	1,881	10,216	72	338	457	2,482
1969	1,796	211	495	2,311	11,905	85	475	624	3,214
1970	2,049	249	665	2,739	13,323	101	641	836	4,067
1971	1,989	241	822	2,904	13,550	100	872	1,067	4,978
1972	2,725	399	1,222	3,991	18,025	113	1,360	1,625	7,339
1973	4,097	574	1,942	6,199	26,358	169	2,706	3,221	13,696
1974	4,577	917	2,263	7,951	30,448	244	3,777	4,462	17,087
1975	5,027	849	2,585	8,670	30,423	92	4,025	4,945	17,352
1976	6,129	842	2,776	10,128	33,611	130	6,747	7,716	25,606
1977	6,957	1,044	3,840	12,119	37,769	222	8,525	10,048	31,314
1978	5,977	1,421	5,083	12,658	36,646	249	11,229	12,722	36,831
1979	6,553	1,887	6,645	15,244	39,664	268	13,385	15,057	39,177
1980	8,488	2,349	9,028	20,132	46,148	240	15,684	17,512	40,142
1981	8,920	2,116	11,884	23,293	48,401	196	19,146	21,268	44,193
1982	8,238	1,433	10,253	20,175	39,489	181	19,920	21,853	42,774
1983	8,535	1,782	11,276	21,899	41,530	186	22,222	24,446	46,360
1984	8,706	2,872	15,132	27,005	49,093	246	26,678	29,245	53,165
1985	8,538	2,758	14,063	25,639	45,007	233	27,651	30,282	53,157
1986	7,280	2,491	12,404	22,349	38,516	253	31,909	34,715	59,827
1987	8,022	3,175	14,839	26,224	43,564	355	43,664	47,281	78,545
1988	9,411	4,892	19,188	33,789	53,968	577	56,494	60,696	96,944
1989	9,549	5,807	18,634	34,383	52,388	749	57,964	62,377	95,041
1990	8,746	5,108	17,011	31,414	45,413	826	60,805	65,016	93,989
1991	8,737	4,691	17,757	31,620	43,853	841	66,719	71,870	99,676
1992	8,830	5,750	20,754	35,793	48,182	920	71,141	76,632	103,155
1993	9,366	5,445	23,437	38,555	50,412	1,012	76,593	82,236	107,525

Table C.16

Exports in million US$

	Brazil					Korea			
	Primary	S-I	Industrial	Total	Total*	Primary	Industrial	Total	Total*
1994	11,058	6,893	24,959	43,545	55,489	1,267	89,617	96,013	122,349
1995	10,969	9,146	25,565	46,506	57,645	1,651	116,703	125,058	155,012
1996	11,900	8,613	26,411	47,747	57,498	1,505	119,832	129,715	156,206
1997	14,474	8,478	29,192	52,986	62,350	1,661	123,883	136,164	160,226
1998	12,977	8,120	29,380	51,120	59,234	1,469	120,835	132,313	153,315
1999	11,828	7,982	27,331	48,013	54,443	1,437	131,414	143,685	162,927
2000	12,561	8,499	32,559	55,119	60,459		156,331	172,268	188,957
2001	15,342	8,244	32,959	58,287	62,177		136,470	150,439	160,478
2002	16,951	8,964	33,069	60,439	63,465		149,733	162,471	170,607
2003	21,178	10,945	39,764	73,203	75,163		179,623	193,817	199,006
2004	28,517	13,433	53,137	96,678	96,678		233,989	253,845	253,845
2005	34,721	15,963	65,353	118,530	114,639		258,365	284,419	275,085
2006	40,272	19,523	75,018	137,808	129,120			325,465	304,948
2007	51,596	21,800	83,943	160,649	146,346			371,489	338,415

Note: S-I. = semi-industrialised goods; * = in 2004 US$

Table C.17
Exchange rates

	Brazil				Korea		
	Exports	Imports	Black market	PPP	Exports	Official	PPP
	R$ per US$				W$ per US$		
1945	7.091E-15	7.000E-15					
1946	7.058E-15	6.895E-15					
1947	6.807E-15	6.684E-15		2.047E-14			
1948	6.807E-15	6.684E-15	9.868E-15	1.822E-14			
1949	6.807E-15	6.684E-15	1.071E-14	1.870E-14			
1950	6.807E-15	6.684E-15	1.178E-14	2.069E-14			
1951	6.807E-15	6.684E-15	1.097E-14	2.085E-14			
1952	6.807E-15	6.684E-15	1.247E-14	2.326E-14			
1953	7.571E-15	1.398E-14	1.551E-14	2.535E-14		10	
1954	1.000E-14	2.117E-14	2.222E-14	3.068E-14		18	
1955	1.393E-14	2.535E-14	2.577E-14	3.693E-14	88	50	155
1956	1.459E-14	2.487E-14	2.558E-14	4.161E-14	107	50	212
1957	1.585E-14	2.630E-14	2.772E-14	4.367E-14	112	50	247
1958	1.865E-14	4.534E-14	4.718E-14	4.311E-14	114	50	237
1959	3.105E-14	5.379E-14	5.558E-14	6.017E-14	135	50	221
1960	4.217E-14	6.630E-14	6.794E-14	7.362E-14	147	63	220
1961	6.354E-14	9.550E-14	1.075E-13	9.225E-14	139	125	232
1962	9.198E-14	1.358E-13	1.902E-13	1.387E-13	130	130	251
1963	1.421E-13	2.024E-13	3.245E-13	2.527E-13	170	130	270
1964	2.995E-13	4.399E-13	5.568E-13	4.876E-13	254	214	316
1965	5.048E-13	6.816E-13	7.003E-13	8.585E-13	266	266	372
1966	7.963E-13	8.000E-13	8.081E-13	1.028E-12	271	271	373
1967	9.685E-13	9.630E-13	1.047E-12	1.312E-12	271	271	411
1968	1.235E-12	1.227E-12	1.214E-12	1.429E-12	277	277	430
1969	1.482E-12	1.473E-12	1.614E-12	1.571E-12	288	288	434
1970	1.670E-12	1.660E-12	1.821E-12	1.655E-12	311	311	449
1971	1.923E-12	1.911E-12	2.136E-12	1.924E-12	347	347	486
1972	2.158E-12	2.146E-12	2.389E-12	2.175E-12	393	393	561
1973	2.228E-12	2.213E-12	2.411E-12	2.729E-12	398	398	541
1974	2.462E-12	2.448E-12	2.711E-12	3.345E-12	404	404	621
1975	2.955E-12	2.938E-12	3.409E-12	4.056E-12	484	484	697
1976	3.881E-12	3.859E-12	4.918E-12	5.301E-12	484	484	779
1977	5.143E-12	5.115E-12	6.152E-12	7.423E-12	484	484	774
1978	6.571E-12	6.535E-12	7.897E-12	9.285E-12	484	484	826
1979	9.798E-12	9.747E-12	1.217E-11	1.210E-11	484	484	853
1980	1.917E-11	1.909E-11	2.185E-11	1.875E-11	607	607	992
1981	3.386E-11	3.370E-11	4.095E-11	3.646E-11	681	681	1067
1982	6.528E-11	6.495E-11	1.010E-10	6.690E-11	731	731	1071
1983	2.098E-10	2.088E-10	3.394E-10	1.625E-10	776	776	976
1984	6.720E-10	6.687E-10	8.106E-10	4.438E-10	806	806	902
1985	2.255E-09	2.245E-09	3.080E-09	1.427E-09	870	870	882
1986	4.965E-09	4.940E-09	8.206E-09	3.570E-09	881	881	843
1987	1.427E-08	1.420E-08	1.934E-08	1.177E-08	823	823	837
1988	9.541E-08	9.494E-08	1.638E-07	9.058E-08	731	731	820
1989	1.031E-06	1.025E-06	2.463E-06	1.194E-06	671	671	800
1990	2.484E-05	2.469E-05	3.434E-05	3.741E-05	708	708	782

Table C.17

Exchange rates

	Brazil				Korea		
	Exports	Imports	Black market	PPP	Exports	Official	PPP
	R$ per US$				W$ per US$		
1991	1.479E-04	1.476E-04	1.813E-04	1.800E-04	733	733	765
1992	1.641E-03	1.641E-03	1.997E-03	1.964E-03	781	781	762
1993	3.216E-02	3.216E-02	3.799E-02	3.936E-02	803	803	745
1994	6.393E-01	6.376E-01	6.800E-01	1.013E+00	803	803	743
1995	9.176E-01	9.159E-01	9.237E-01	1.781E+00	771	771	720
1996	1.005E+00	1.004E+00	1.039E+00	1.877E+00	804	804	709
1997	1.078E+00	1.077E+00	1.143E+00	1.878E+00	951	951	698
1998	1.161E+00	1.160E+00	1.234E+00	1.904E+00	1,401	1,401	728
1999	1.815E+00	1.814E+00	1.902E+00	1.938E+00	1,189	1,189	678
2000	1.830E+00	1.829E+00	1.962E+00	1.994E+00	1,131	1,131	667
2001	2.350E+00	2.350E+00	2.490E+00	2.103E+00	1,291	1,291	669
2002	2.921E+00	2.920E+00	3.023E+00	2.402E+00	1,251	1,251	644
2003	3.078E+00	3.077E+00	3.143E+00	2.794E+00	1,192	1,192	637
2004	2.926E+00	2.925E+00	3.086E+00	2.947E+00	1,145	1,145	622
2005	2.435E+00	2.434E+00	2.678E+00	3.200E+00	1,024	1,024	603
2006	2.176E+00	2.175E+00	2.353E+00	3.380E+00	955	955	574
2007	1.948E+00	1.947E+00		3.488E+00	929	929	572

Table C.18

Land rent appropriated by others than landowners (Brazil)

	ER	ICM	ET	CQ	MC	RC	AI	IBC	MT
					millions of R$				
1947	4.28E-11	0	0	0	0	0	0	0	0
1948	2.70E-11	0	0	0	0	0	0	0	0
1949	3.31E-11	0	0	0	0	0	0	0	0
1950	4.64E-11	0	0	0	0	0	0	0	0
1951	5.33E-11	0	0	0	0	0	-1.46E-14	0	0
1952	5.81E-11	0	0	0	0	0	-2.76E-14	-3.06E-14	0
1953	6.88E-11	0	0	0	0	0	-4.59E-14	-3.70E-14	0
1954	6.77E-11	0	0	0	0	0	-7.42E-14	-1.04E-12	0
1955	7.35E-11	0	0	0	0	0	-8.83E-14	-1.81E-12	0
1956	8.03E-11	0	0	0	0	0	-5.71E-14	-2.91E-13	0
1957	8.71E-11	0	0	0	0	0	-2.13E-13	-2.82E-12	0
1958	6.13E-11	0	0	0	0	0	-2.61E-13	-6.63E-12	0
1959	7.96E-11	0	0	0	0	0	-1.66E-13	-1.39E-11	0
1960	8.06E-11	0	0	0	0	0	-1.10E-12	-1.19E-11	0
1961	6.20E-11	0	0	3.16E-11	0	0	-1.46E-13	-3.92E-12	0
1962	8.97E-11	0	0	4.27E-11	0	0	5.97E-13	-2.91E-11	0
1963	3.36E-10	0	0	8.13E-11	0	0	1.82E-13	-1.09E-11	0
1964	5.15E-10	0	0	1.51E-10	0	0	-6.04E-12	1.15E-11	0
1965	1.25E-09	0	0	4.30E-10	2.20E-10	0	-1.23E-11	-1.98E-10	0
1966	1.35E-09	5.24E-10	0	6.96E-10	3.80E-10	0	-1.31E-11	-8.97E-12	0
1967	2.32E-09	6.39E-10	0	9.72E-10	4.45E-10	0	-2.56E-11	0	0
1968	1.43E-09	9.51E-10	0	1.29E-09	7.31E-10	0	-1.72E-11	0	0
1969	7.12E-10	1.19E-09	0	1.79E-09	6.35E-10	-1.02E-11	-1.20E-11	0	0
1970	7.32E-10	1.23E-09	0	2.24E-09	3.99E-10	-3.62E-11	3.84E-11	0	0
1971	3.12E-11	1.84E-09	0	2.62E-09	2.45E-10	-3.31E-11	5.28E-11	0	0
1972	2.82E-10	2.53E-09	0	3.16E-09	4.71E-10	-5.58E-11	1.02E-10	0	0
1973	6.45E-09	4.33E-09	0	4.13E-09	5.74E-09	-5.91E-10	9.72E-12	0	0
1974	1.65E-08	7.16E-09	0	4.55E-09	1.53E-08	-1.09E-09	1.80E-11	0	0
1975	2.04E-08	8.40E-09	0	4.93E-09	1.07E-08	-2.63E-09	-5.49E-10	0	0
1976	2.60E-08	1.16E-08	0	5.26E-09	3.53E-09	-4.82E-09	-8.63E-10	0	0
1977	4.29E-08	1.62E-08	0	8.65E-09	1.59E-09	-5.64E-09	-1.59E-09	0	0
1978	4.80E-08	1.76E-08	1.16E-10	1.17E-08	4.06E-09	-9.11E-09	-5.78E-10	0	0
1979	5.06E-08	3.13E-08	1.27E-10	5.89E-09	6.95E-09	-2.90E-08	9.00E-10	0	0
1980	-2.48E-08	6.63E-08	1.72E-08	2.68E-09	9.24E-08	-5.76E-08	6.64E-09	0	0
1981	7.18E-08	1.16E-07	1.09E-08	2.70E-09	1.05E-07	-6.92E-08	1.62E-08	0	0
1982	4.04E-08	1.84E-07	8.16E-08	7.80E-09	-2.92E-08	-1.67E-07	4.76E-08	0	0
1983	-1.21E-06	4.79E-07	4.45E-07	1.77E-07	1.63E-07	-2.24E-07	1.26E-07	0	0
1984	-6.85E-06	1.38E-06	1.14E-06	5.26E-07	1.50E-06	-4.39E-08	6.48E-07	0	0
1985	-2.18E-05	4.13E-06	1.47E-06	0	1.31E-06	-5.71E-07	1.75E-06	0	0
1986	-3.48E-05	8.51E-06	7.77E-07	0	6.16E-06	-1.57E-05	2.14E-06	0	0
1987	-6.09E-05	3.14E-05	1.13E-05	4.33E-06	1.93E-05	-1.64E-05	1.27E-05	0	0
1988	- 0.00041	0.00033	0.00015	5.56E-05	0.000315	-0.00015	0.000141	0	0
1989	0.00562	0.00427	0.00055	1.56E-04	0.004369	-0.00016	0.002068	0	0.0002
1990	0.36315	0.11961	0.00347	4.91E-05	0	-0.00279	0.003177	0	0.0054
1991	0.88029	0.57170	0.00398	0	0	0	- 0.00363	0	0.0330
1992	8.97799	5.16052	0.15023	0	0	0	0.84582	0	0.3202
1993	202.919	107.163	0.00074	0	0	0	20.834	0	5.8501

Table C.18

Land rent appropriated by others than landowners (Brazil)

	ER	ICM	ET	CQ	MC	RC	AI	IBC	MT
					millions of R$				
1994	14,084	2,103	0.6	0	0	0	145.3	0	107.1
1995	38,587	3,533	338.4	0	0	0	- 772.5	0	178.0
1996	37,689	2,489	4.0	0	0	0	- 574.7	0	189.6
1997	34,876	0	29.0	0	0	0	10.0	0	215.6
1998	29,982	0	2.6	0	0	0	49.6	0	258.9
1999	3,144	0	1.6	0	0	0	1,079.4	0	344.3
2000	4,811	0	3.7	0	0	0	1,273.9	0	390.5
2001	- 11,836	0	1,074.2	0	0	0	1,842.2	0	495.0
2002	- 24,848	0	1,029.3	0	0	0	3,097.5	0	592.2
2003	- 18,683	0	642.1	0	0	0	4,836.5	0	714.7
2004	- 1,950	0	901.6	0	0	0	5,540.9	0	871.0
2005	54,953	0	-	0	0	0	2,453.4	0	1,335.9
2006	106,512	0	-	0	0	0	950.0	0	1,526.8
2007	171,611	0	-	0	0	0	832.2	0	1,600.6

Note: ER = through exchange rate over/undervaluation; ICM = through ICM (state government export taxes); ET = through export taxes; CQ = through contribution quotas; through monopoly controls; RC = through subsidised rural credit; AI = through agrarian input prices; IBC = through IBC activities; MT = through mining taxes

Table C.19

Land rent appropriated by others than landowners (Korea)

	ER	Max/Min prices	Fertilizers
			billion W$
1955	15.2	-0.7	-5.1
1956	20.1	-4.9	-1.9
1957	28.3	-3.9	-1.2
1958	27.3	-2.5	-0.6
1959	22.3	-4.8	0.9
1960	19.7	-5.8	1.9
1961	11.4	-3.7	1.1
1962	21.4	-2.4	0.1
1963	25.4	-15.4	0.8
1964	29.4	-6.4	-6.4
1965	42.2	10.2	-0.6
1966	40.8	7.3	-14.0
1967	68.6	11.3	-8.5
1968	69.1	-4.6	1.5
1969	62.4	-14.1	10.7
1970	71.6	-29.5	6.5
1971	54.1	-79.3	-3.0
1972	58.3	-119.9	-8.3
1973	90.6	-46.8	-18.9
1974	260.6	-1.2	-114.9
1975	252.8	-64.1	-283.7
1976	292.2	-448.0	31.8
1977	313.3	-692.4	25.2
1978	485.8	-780.7	32.9
1979	439.6	-994.7	27.0
1980	247.3	-479.5	-22.6
1981	527.6	-1,038.1	29.5
1982	491.2	-1,081.8	94.4
1983	324.6	-1,014.8	155.5
1984	160.4	-1,000.4	173.5
1985	-5.4	-1,311.4	229.0
1986	-111.8	-1,635.5	245.6
1987	-31.7	-1,664.4	331.7
1988	161.5	-1,987.7	136.8
1989	282.3	-2,017.5	167.6
1990	67.4	-2,205.2	157.4
1991	-32.4	-2,019.8	133.1
1992	-211.0	-2,152.4	175.2
1993	-373.6	-2,017.9	194.2
1994	-441.1	-2,180.8	203.6
1995	-543.5	-2,033.3	187.2
1996	-731.7	-2,981.3	179.0
1997	-1,141.9	-3,064.9	232.5
1998	-2,559.7	-2,164.7	399.1
1999	-1,834.5	-3,447.5	521.4
2000	-1,622.5	-4,182.4	595.6
2001	-1,760.2	-4,374.7	562.2

Table C.19

Land rent appropriated by others than landowners (Korea)

	ER	Max/Min prices	Fertilizers
		billion W$	
2002	-1,681.4	-3,396.0	646.3
2003	-1,535.7	-3,003.8	665.8
2004	-1,773.9	-3,454.2	684.3
2005	-1,670.0	-2,639.7	708.0

Note: ER = through exchange rate over/undervaluation; Max/Min prices = through maximum and minimum prices; Fertilizers = through fertilizer prices

Table C.20

International commodity prices in US$ per ton

	Coffee	Cacao	Corn	Beans	Soy	Cotton	Manioc
1953	1,166	692	56	197	-	931	49
1954	1,447	1,121	55	117	-	827	48
1955	1,027	746	46	150	112	752	40
1956	1,021	534	48	222	99	747	42
1957	984	635	45	143	101	748	39
1958	890	865	45	152	88	601	39
1959	701	747	43	186	87	668	38
1960	706	551	41	199	85	616	35
1961	698	441	43	203	103	458	38
1962	654	438	48	207	93	478	42
1963	639	510	51	212	102	533	45
1964	847	466	52	233	102	519	46
1965	873	301	52	202	109	515	45
1966	756	451	56	142	117	499	49
1967	702	517	47	186	104	488	41
1968	699	608	46	149	98	471	40
1969	725	882	51	175	95	480	44
1970	976	649	55	209	109	528	48
1971	747	518	55	227	117	446	48
1972	942	579	53	220	130	450	46
1973	1,161	1,069	92	471	270	605	80
1974	1,264	1,617	124	544	257	664	108
1975	1,093	1,248	112	556	203	771	98
1976	2,698	1,698	106	414	219	1,093	92
1977	4,487	4,046	89	411	264	912	78
1978	3,133	3,385	95	423	245	1,247	82
1979	3,420	3,102	108	498	267	1,177	94
1980	3,169	2,360	118	770	268	1,185	103
1981	1,839	1,929	123	872	264	1,359	107
1982	2,080	1,505	103	654	224	1,298	89
1983	2,226	1,832	128	531	262	1,371	111
1984	2,485	2,322	128	568	260	1,094	111
1985	2,292	2,094	105	537	205	1,046	92
1986	4,197	2,029	84	466	191	1,288	73
1987	1,984	1,851	81	365	198	887	71
1988	2,221	1,602	100	581	283	460	88
1989	1,644	1,253	104	868	250	920	91
1990	1,269	1,082	94	582	223	901	105
1991	1,177	1,048	93	456	222	904	122
1992	985	991	89	360	216	1,177	114
1993	1,172	981	89	450	225	1,212	101
1994	2,536	1,233	93	460	244	931	102
1995	2,750	1,339	107	481	221	855	128
1996	2,243	1,399	134	595	279	1,445	131
1997	3,170	1,600	100	584	294	1,787	90
1998	2,342	1,661	86	705	235	1,560	83
1999	1,754	1,214	82	346	179	1,269	77
2000	1,613	1,055	81	310	190	1,368	60

Table C.20

International commodity prices in US$ per ton

	Coffee	Cacao	Corn	Beans	Soy	Cotton	Manioc
2001	964	1,157	88	402	174	1,192	56
2002	770	1,950	97	203	190	1,122	66
2003	951	1,660	105	317	216	1,047	69
2004	1,240	1,687	112	319	280	856	74
2005	1,861	1,677	98	271	238	1,075	27
2006	1,985	1,819	122	258	227	1,227	108
2007	2,270	2,379	163	322	283	1,091	122

Table C.20

International commodity prices in US$ per ton

	Orange	Beef	Sugar*	Rice*	Rice**	Rice***	Barley	Iron ore
1953	-	64		175		203		20
1954	-	61		158		184		17
1955	-	73		142		165	89	18
1956	-	125		137		159	89	21
1957	-	110		137		160	80	22
1958	-	117		145		169	82	21
1959	-	130		132		154	85	17
1960	-	132	123	125		145	84	17
1961	-	122	130	137		131	52	18
1962	-	128	136	153		150	107	17
1963	-	120	201	143		150	99	16
1964	-	151	202	138		177	111	16
1965	-	158	104	136		171	81	16
1966	-	183	81	166		171	137	15
1967	-	187	80	221		193	144	14
1968	-	195	99	205		189	114	13
1969	-	219	105	185	159	205	105	12
1970	-	234	112	143	109	203	130	15
1971	-	241	123	130	106	160	102	13
1972	-	266	153	150	139	148	100	13
1973	-	361	193	297	237	270	165	17
1974	-	284	555	542	378	458	256	19
1975	228	238	623	363	433	434	297	17
1976	216	284	254	254	383	282	222	23
1977	254	270	180	272	367	236	182	23
1978	300	384	168	369	378	353	186	21
1979	398	517	192	334	411	309	199	24
1980	400	495	450	434	444	393	262	28
1981	406	443	371	483	437	452	294	28
1982	385	429	213	293	388	458	227	33
1983	373	438	211	277	376	494	211	29
1984	352	408	193	252	361	529	291	26
1985	398	386	145	217	316	456	-	27
1986	394	376	158	196	292	410	-	26
1987	456	428	149	214	332	450	-	25
1988	453	452	196	277	435	581	-	24
1989	445	461	292	300	475	628	-	28
1990	531	420	343	271		568	-	33
1991	521	582	270	294		616	-	35
1992	489	612	249	268		561	-	33
1993	432	561	258	237		497	-	29
1994	411	701	290	269		565	-	26
1995	531	992	309	321		673	-	28
1996	492	857	301	338		709	-	30
1997	459	770	279	302		634	-	30
1998	442	704	233	305		640	-	31
1999	438	606	159	249		522	-	28
2000	363	549	185	204		427	-	29

Table C.20

International commodity prices in US$ per ton

	Orange	Beef	Sugar*	Rice*	Rice**	Rice***	Barley	Iron ore
2001	595	413	205	173		362	-	30
2002	565	371	157	192		402	-	29
2003	683	383	166	199		418	-	32
2004	855	437	168	246		515	-	38
2005	842	458	217	288		603	-	65
2006	825	526	328	304		636	-	77
2007	958	558		332		-	-	85

Note: Rice * = FOB Thai; Rice** = CIF Brazil; Rice *** = Korea Border Price; Sugar * = Brazil Exporting Price

Table C.21

Domestic farm-gate prices (1000 lcu per ton)

	Corn	Soybeans	Cotton	Sugar (IAA)	Rice*	Rice**	Barley
			R$			W$	
1955						9.1	4.5
1956						15.3	7.5
1957						12.8	12.3
1958						11.4	10.2
1959						13.3	9.0
1960						16.2	10.6
1961						20.3	14.5
1962						21.5	16.2
1963						33.8	28.3
1964						42.5	37.0
1965						40.1	27.9
1966	0.000000032	-	0.000000086	-	-	42.2	26.5
1967	0.000000041	0.000000078	0.000000123	-	0.000000094	46.4	30.6
1968	0.000000042	0.000000101	0.000000166	-	0.000000105	54.7	33.5
1969	0.000000060	0.000000124	0.000000185	0.000000127	0.000000113	67.8	38.9
1970	0.000000070	0.000000121	0.000000238	0.000000139	0.000000129	77.2	42.4
1971	0.000000089	0.000000166	0.000000330	0.000000158	0.000000194	97.1	58.8
1972	0.000000118	0.000000188	0.000000379	0.000000179	0.000000243	122.0	75.2
1973	0.000000156	0.000000387	0.000000528	0.000000208	0.000000264	129.4	77.0
1974	0.000000204	0.000000403	0.000000810	0.000000271	0.000000417	185.8	97.3
1975	0.000000274	0.000000452	0.000000834	0.000000365	0.000000660	234.9	136.4
1976	0.000000380	0.000000617	0.000001880	0.000000681	0.000000606	279.8	138.9
1977	0.000000441	0.000000945	0.000002153	0.000001017	0.000000606	290.6	188.7
1978	0.000000740	0.000001190	0.000002581	0.000001369	0.000001247	381.0	214.6
1979	0.000001222	0.000002005	0.000003959	0.000001974	0.000002154	435.5	247.6
1980	0.000002486	0.000003396	0.000007902	0.000003707	0.000004189	566.0	317.7
1981	0.000004722	0.000006058	0.000015162	0.000009030	0.000006797	656.2	368.3
1982	0.000007199	0.000011040	0.000024925	0.000017570	0.000014977	685.2	417.7
1983	0.000027151	0.000042555	0.000086034	0.000040067	0.000039221	689.4	430.2
1984	0.000071487	0.000130525	0.000277945	0.000116080	0.000092250	704.5	443.6
1985	0.000212348	0.000348826	0.000663115	0.000343822	0.000349518	767.1	483.0
1986	0.000539947	0.000758145	0.001732526	0.000661597	0.000856247	826.1	520.2
1987	0.001160909	0.002271818	0.005268788	0.002232575	0.001460305	858.3	540.4
1988	0.010682121	0.022296364	0.028693030	0.014282033	0.010904317	926.2	583.2
1989	0.107272727	0.174242424	0.383030303	0.165080757	0.106415583	951.3	599.0
1990	3.400000000	3.820000000	9.103030303	4.819566450	3.983330833	1,028.1	647.4
1991	17.28787879	24.04545455	46.07515152	25.01290464	25.37641667	1,063.9	669.9
1992	174.4363636	278.5484848	480.6818182	280.9553060	154.6571667	1,101.5	693.5
1993	3,993.84848	6,022.57576	10,603.2424	5,814.79670	3,916.66667	1,156.9	728.4
1994	79,975.7576	121,557.273	286,063.636	144,331.204	112,416.667	1,187.3	747.6
1995	112,500.000	161,666.667	421,666.667	221,292.584	178,333.333	1,298.1	817.4
1996	144,166.667	231,666.667	488,333.333	268,418.480	203,333.333	1,491.3	939.0
1997	125,000.000	268,333.333	570,000.000	295,514.026	227,500.000	1,514.5	953.6
1998	143,333.333	225,000.000	503,333.333	299,466.996	281,666.667	1,616.4	1,017.8
1999	170,000.000	263,333.333	575,000.000	266,471.494	289,166.667	1,705.8	1,074.1
2000	201,666.667	285,833.333	636,666.667	330,559.762	252,500.000	1,788.1	1,125.9
2001	162,500.000	354,166.667	608,333.333	446,759.387	284,166.667	1,743.4	1,097.7

Table C.21

Domestic farm-gate prices (1000 lcu per ton)

	Corn	Soybeans	Cotton	Sugar (IAA)	Rice*	Rice**	Barley
			R$			W$	
2002	260,833.333	501,666.667	700,833.3	462,822.016	376,666.667	1,698.7	1,069.6
2003	316,666.667	616,666.667	1,107,500.0	532,161.244	570,000.000	1,768.4	1,113.5
2004	302,500.000	660,833.333	1,250,000.0	503,679.209	644,166.667	1,775.6	1,118.0
2005	288,333.333	484,166.667	990,833.333	560,864.528	-	1,602.1	1,008.8
2006	262,500.000	420,000.000	939,166.667	694,041.276	-	1,580.7	995.3
2007	334,166.667	507,500.000	-	655,912.813	-	-	-

Table C.22

Free Alongside Ship (FAS) prices ('free market' equivalents)

	Corn	Soybeans	Cotton	Rice
	R$ per tn.	R$ per tn.	R$ per tn.	R$ per tn.
1966	0.000000000041		0.00000000010	
1967	0.000000000052	0.00000000009	0.00000000014	
1968	0.000000000055	0.00000000011	0.00000000019	
1969	0.000000000076	0.00000000014	0.00000000021	0.00000000023
1970	0.000000000091	0.00000000014	0.00000000027	0.00000000027
1971	0.000000000115	0.00000000019	0.00000000038	0.00000000036
1972	0.000000000149	0.00000000022	0.00000000044	0.00000000046
1973	0.000000000193	0.00000000042	0.00000000060	0.00000000054
1974	0.000000000251	0.00000000044	0.00000000091	0.00000000080
1975	0.000000000338	0.00000000051	0.00000000094	0.00000000118
1976	0.000000000464	0.00000000069	0.00000000205	0.00000000127
1977	0.000000000549	0.00000000104	0.00000000238	0.00000000147
1978	0.000000000905	0.00000000133	0.00000000288	0.00000000238
1979	0.000000001483	0.00000000225	0.00000000450	0.00000000403
1980	0.000000003123	0.00000000381	0.00000000878	0.00000000786
1981	0.000000005876	0.00000000688	0.00000001707	0.00000001296
1982	0.000000009553	0.00000001278	0.00000002819	0.00000002585
1983	0.000000033840	0.00000004612	0.00000009440	0.00000006951
1984	0.000000090131	0.00000014045	0.00000030153	0.00000019556
1985	0.000000277477	0.00000038274	0.00000073633	0.00000066581
1986	0.000000704659	0.00000084321	0.00000189168	0.00000066621
1987	0.000001681171	0.00000255294	0.00000589012	0.00000222218
1988	0.000013769622	0.00002379287	0.00003391662	0.00001625621
1989	0.000166708675	0.00020354098	0.00044764166	0.00019274509

Table C.23

Apparent consumption of primary goods in million tons (Brazil)

	Corn			Rice			Cotton			Beans			Manioc		
	C	P	X	C	P	X	C	P	X	C	P	X	C	P	X
1950	6.01	6.02	0.01	3.14	3.22	0.08	0.26	0.39	0.13	1.25	1.25	0.00	12.53	12.53	0.00
1951	5.92	6.22	0.30	3.06	3.18	0.12	0.21	0.35	0.14	1.24	1.24	0.00	11.92	11.92	0.00
1952	5.88	5.91	0.03	2.77	2.93	0.16	0.49	0.52	0.03	1.15	1.15	0.00	12.81	12.81	0.00
1953	5.98	5.98	0.00	3.07	3.07	0.00	0.24	0.37	0.14	1.39	1.39	0.00	13.44	13.44	0.00
1954	6.78	6.79	0.01	3.37	3.37	0.00	0.09	0.40	0.31	1.54	1.54	0.00	14.49	14.49	0.00
1955	6.61	6.69	0.08	3.73	3.74	0.00	0.25	0.43	0.18	1.47	1.47	0.00	14.86	14.86	0.00
1956	7.00	7.00	0.00	3.39	3.49	0.10	0.26	0.40	0.14	1.38	1.38	0.00	15.32	15.32	0.00
1957	7.76	7.76	0.00	4.07	4.07	0.00	0.33	0.40	0.07	1.58	1.58	0.00	15.44	15.44	0.00
1958	7.37	7.37	0.00	3.78	3.83	0.05	0.35	0.39	0.04	1.45	1.45	0.00	15.35	15.35	0.00
1959	7.79	7.79	0.00	4.09	4.10	0.01	0.39	0.47	0.08	1.55	1.55	0.00	16.58	16.58	0.00
1960	8.66	8.67	0.01	4.79	4.79	0.00	0.33	0.42	0.10	1.73	1.73	0.00	17.61	17.61	0.00
1961	9.04	9.04	0.00	5.24	5.39	0.15	0.34	0.55	0.21	1.74	1.74	0.00	18.06	18.06	0.00
1962	9.59	9.59	0.00	5.51	5.56	0.04	0.28	0.50	0.22	1.71	1.71	0.00	19.84	19.84	0.00
1963	9.72	10.42	0.70	5.74	5.74	0.00	0.28	0.50	0.22	1.94	1.94	0.00	22.25	22.25	0.00
1964	9.35	9.41	0.06	6.33	6.34	0.01	0.24	0.46	0.22	1.95	1.95	0.00	24.36	24.36	0.00
1965	11.55	12.11	0.56	7.34	7.58	0.24	0.35	0.54	0.20	2.29	2.29	0.00	24.99	24.99	0.00
1966	10.75	11.37	0.62	5.51	5.80	0.29	0.19	0.43	0.24	2.15	2.15	0.00	24.71	24.71	0.00
1967	12.39	12.82	0.43	6.76	6.79	0.03	0.39	0.58	0.19	2.55	2.55	0.00	27.27	27.27	0.00
1968	11.58	12.81	1.24	6.49	6.65	0.16	0.47	0.72	0.25	2.42	2.42	0.00	29.20	29.20	0.00
1969	12.04	12.69	0.65	6.28	6.39	0.11	0.14	0.58	0.44	2.20	2.20	0.00	30.07	30.07	0.00
1970	12.75	14.22	1.47	7.46	7.55	0.10	0.25	0.60	0.34	2.21	2.21	0.00	29.46	29.46	0.00
1971	12.85	14.13	1.28	6.44	6.59	0.15	0.45	0.68	0.23	2.69	2.69	0.00	30.23	30.23	0.00
1972	14.72	14.89	0.17	7.82	7.82	0.00	0.37	0.65	0.28	2.68	2.68	0.00	29.83	29.83	0.00
1973	14.14	14.19	0.04	7.13	7.16	0.03	0.25	0.54	0.28	2.23	2.23	0.00	26.53	26.53	0.00
1974	15.16	16.27	1.11	6.71	6.76	0.06	0.45	0.53	0.08	2.24	2.24	0.00	24.80	24.80	0.00
1975	15.19	16.33	1.15	7.78	7.78	0.00	0.29	0.40	0.11	2.28	2.28	0.00	26.12	26.12	0.00
1976	16.38	17.75	1.37	9.68	9.76	0.08	0.58	0.59	0.01	1.84	1.84	0.00	25.44	25.44	0.00
1977	17.84	19.26	1.42	8.58	8.99	0.41	0.45	0.49	0.03	2.29	2.29	0.00	25.93	25.93	0.00
1978	13.55	13.57	0.01	7.11	7.30	0.18	0.50	0.54	0.04	2.19	2.19	0.00	25.46	25.46	0.00
1979	16.30	16.31	0.01	7.59	7.60	0.00	0.57	0.57	0.00	2.19	2.19	0.00	24.96	24.96	0.00
1980	20.37	20.37	0.01	9.77	9.78	0.00	0.59	0.59	0.01	1.97	1.97	0.00	23.47	23.47	0.00
1981	21.11	21.12	0.01	8.18	8.23	0.05	0.65	0.68	0.03	2.34	2.34	0.00	24.52	24.52	0.00
1982	21.30	21.84	0.54	9.72	9.73	0.01	0.53	0.59	0.06	2.90	2.90	0.00	24.07	24.07	0.00
1983	17.97	18.73	0.77	7.73	7.74	0.01	0.49	0.67	0.18	1.58	1.58	0.00	21.85	21.85	0.00
1984	20.99	21.16	0.18	9.03	9.03	0.00	0.94	0.97	0.03	2.63	2.63	0.00	21.47	21.47	0.00
1985	22.02	22.02	0.00	9.02	9.02	0.00	0.71	0.79	0.09	2.55	2.55	0.00	23.12	23.12	0.00
1986	20.53	20.53	0.00	10.37	10.37	0.00	0.60	0.63	0.04	2.21	2.21	0.00	25.62	25.62	0.00
1987	26.80	26.80	0.00	10.42	10.42	0.00	0.69	0.86	0.17	2.01	2.01	0.00	23.46	23.46	0.00
1988	24.75	24.75	0.00	11.79	11.81	0.02	0.67	0.71	0.03	2.81	2.81	0.00	21.67	21.67	0.00
1989	26.57	26.57	0.00	11.04	11.04	0.01	0.49	0.67	0.17	2.31	2.31	0.00	23.67	23.67	0.00
1990	21.35	21.35	0.00	7.42	7.42	0.00	0.61	0.72	0.11	2.23	2.23	0.00	24.32	24.32	0.00
1991	23.74	23.74	0.00	9.49	9.50	0.00	0.55	0.67	0.12	2.74	2.74	0.00	24.54	24.54	0.00
1992	30.51	30.51	0.00	10.00	10.01	0.00	0.39	0.42	0.03	2.80	2.80	0.00	21.92	21.92	0.00
1993	30.05	30.06	0.00	10.10	10.11	0.00	0.48	0.48	0.00	2.48	2.48	0.00	21.86	21.86	0.00
1994	32.48	32.49	0.00	10.54	10.54	0.00	0.53	0.54	0.00	3.37	3.37	0.00	24.46	24.46	0.00
1995	36.26	36.27	0.01	11.21	11.23	0.02	0.36	0.41	0.05	2.95	2.95	0.00	25.42	25.42	0.00
1996	29.24	29.59	0.35	8.62	8.64	0.02	0.30	0.31	0.00	2.45	2.45	0.00	17.74	17.74	0.00

Table C.23

Apparent consumption of primary goods in million tons (Brazil)

	Corn			Rice			Cotton			Beans			Manioc		
	C	P	X	C	P	X	C	P	X	C	P	X	C	P	X
1997	32.59	32.95	0.36	8.34	8.35	0.01	0.41	0.41	0.00	2.84	2.84	0.00	19.90	19.90	0.00
1998	29.59	29.60	0.01	7.71	7.72	0.01	0.52	0.52	0.00	2.19	2.19	0.00	19.50	19.50	0.00
1999	32.23	32.24	0.01	11.66	11.71	0.05	0.70	0.70	0.00	2.83	2.83	0.00	20.86	20.86	0.00
2000	32.31	32.32	0.01	11.11	11.13	0.03	0.91	0.94	0.03	3.06	3.06	0.00	23.04	23.04	0.00
2001	36.33	41.96	5.63	10.16	10.18	0.02	0.62	0.77	0.15	2.45	2.45	0.00	22.58	22.58	0.00
2002	33.19	35.94	2.75	10.44	10.47	0.03	0.74	0.85	0.11	3.06	3.06	0.00	23.15	23.15	0.00
2003	44.76	48.33	3.57	10.32	10.33	0.02	1.05	1.23	0.18	3.30	3.30	0.00	21.96	21.96	0.00
2004	36.76	41.79	5.03	13.24	13.28	0.04	1.79	2.12	0.33	2.97	2.97	0.00	23.93	23.93	0.00
2005	34.04	35.11	1.07	13.19	13.19	0.00	1.66	2.05	0.39	3.02	3.02	0.00	25.87	25.87	0.00
2006	38.72	42.66	3.94	11.53	11.53	0.00	1.32	1.62	0.30	3.46	3.46	0.00	26.64	26.64	0.00
2007	41.18	52.11	10.93	11.06	11.06	0.00	1.88	2.30	0.42	3.17	3.17	0.00	26.54	26.54	0.00

Table C.23

Apparent consumption of primary goods in tons (Brazil)

	Soybeans			Beef			Sugar			Iron ore		
	C	P	X	C	P	X	C	P	X	C	P	X
1950				1.08	1.10	0.01	1.84	1.86	0.02	1.10	2.0	0.9
1951				1.15	1.15	0.01	1.90	1.92	0.02	1.09	2.4	1.3
1952	0.08	0.08	0.00	1.12	1.12	0.00	2.01	2.05	0.04	1.60	3.2	1.6
1953	0.06	0.09	0.03	1.13	1.13	0.00	1.93	2.18	0.26	2.04	3.6	1.6
1954	0.09	0.12	0.03	1.15	1.15	0.00	2.13	2.30	0.16	1.39	3.1	1.7
1955	0.06	0.11	0.05	1.14	1.14	0.00	1.86	2.33	0.47	0.82	3.4	2.6
1956	0.07	0.11	0.04	1.23	1.24	0.01	2.49	2.50	0.02	1.33	4.1	2.7
1957	0.10	0.12	0.02	1.30	1.33	0.03	2.29	2.72	0.42	1.43	5.0	3.6
1958	0.10	0.13	0.03	1.44	1.47	0.04	2.09	2.85	0.76	2.35	5.2	2.8
1959	0.16	0.21	0.04	1.42	1.45	0.03	2.43	3.05	0.62	4.92	8.9	4.0
1960	0.27	0.27	0.00	1.37	1.37	0.01	2.46	3.23	0.77	4.18	9.3	5.2
1961	0.27	0.34	0.07	1.35	1.37	0.02	2.65	3.44	0.78	3.98	10.2	6.2
1962	0.23	0.32	0.10	1.34	1.36	0.01	3.12	3.57	0.45	3.09	10.7	7.6
1963	0.27	0.30	0.03	1.35	1.36	0.01	2.88	3.40	0.52	2.95	11.2	8.3
1964	0.52	0.52	0.00	1.42	1.44	0.02	3.75	4.00	0.25	7.23	17.0	9.7
1965	0.52	0.60	0.08	1.46	1.50	0.04	3.44	4.20	0.76	8.02	20.8	12.7
1966	0.59	0.72	0.12	1.43	1.45	0.02	3.36	4.36	1.00	10.34	23.3	12.9
1967	0.35	0.65	0.30	1.49	1.51	0.01	3.46	4.46	1.00	8.02	22.3	14.3
1968	0.99	1.06	0.07	1.66	1.69	0.04	3.33	4.36	1.03	10.07	25.1	15.0
1969	1.20	1.51	0.31	1.75	1.83	0.08	3.49	4.59	1.10	5.68	27.2	21.5
1970	1.79	2.08	0.29	1.75	1.85	0.10	-2.61	5.12	7.73	8.32	36.4	28.1
1971	3.45	3.67	0.21	1.71	1.79	0.09	4.39	5.65	1.26	6.47	37.5	31.0
1972	3.97	5.01	1.04	1.94	2.10	0.16	3.63	6.16	2.53	15.96	46.5	30.5
1973	6.09	7.88	1.79	2.10	2.20	0.10	4.12	6.94	2.82	10.06	55.0	45.0
1974	7.16	9.89	2.73	2.01	2.03	0.02	4.63	6.99	2.36	32.05	91.5	59.4
1975	7.89	11.23	3.33	2.15	2.16	0.01	4.45	6.18	1.73	35.64	108.2	72.5
1976	8.87	12.51	3.64	2.36	2.37	0.01	6.43	7.60	1.17	40.31	107.4	67.1
1977	6.95	9.54	2.59	2.42	2.45	0.02	6.30	8.76	2.45	42.28	100.8	58.5
1978	9.58	10.24	0.66	2.56	2.57	0.01	-0.19	7.77	7.96	37.53	103.9	66.4
1979	14.52	15.16	0.64	2.65	2.65	0.00	5.20	7.03	1.83	41.91	117.5	75.6
1980	13.61	15.16	1.55	2.84	2.85	0.01	5.97	8.55	2.57	60.74	139.7	79.0
1981	13.56	15.01	1.45	2.95	3.00	0.05	5.69	8.39	2.70	36.91	122.7	85.8
1982	12.34	12.84	0.50	2.96	3.05	0.09	6.59	9.30	2.71	39.01	119.9	80.9
1983	13.29	14.58	1.30	3.13	3.25	0.12	7.06	9.56	2.50	39.99	114.2	74.2
1984	13.98	15.54	1.56	3.30	3.42	0.12	6.26	9.32	3.06	53.55	143.8	90.3
1985	14.79	18.28	3.49	3.34	3.48	0.14	5.72	8.27	2.55	73.90	168.1	94.2
1986	12.13	13.33	1.20	3.52	3.60	0.08	6.22	8.65	2.43	49.92	129.4	79.5
1987	13.95	16.97	3.02	3.62	3.69	0.07	6.26	8.46	2.20	40.00	134.5	20.0
1988	15.42	18.02	2.60	3.88	4.05	0.17	6.82	8.58	1.77	40.00	146.0	22.4
1989	19.91	24.07	4.17	4.16	4.23	0.06	6.74	7.79	1.05	35.27	153.7	118.4
1990	15.82	19.90	4.08	4.07	4.12	0.05	6.36	7.90	1.54	40.80	154.3	113.5
1991	12.92	14.94	2.02	4.45	4.51	0.06	7.72	9.20	1.48	41.00	154.3	113.3
1992	15.49	19.21	3.73	4.62	4.72	0.10	7.39	9.80	2.41	37.82	146.0	108.2
1993	18.41	22.59	4.18	4.71	4.81	0.10	6.87	9.93	3.06	44.27	159.4	115.1
1994	19.53	24.93	5.40	5.06	5.14	0.08	9.07	12.50	3.43	42.80	165.6	122.8
1995	22.19	25.68	3.49	5.67	5.71	0.04	7.46	13.70	6.24	53.62	183.8	130.2
1996	19.51	23.16	3.65	6.14	6.19	0.05	9.27	14.65	5.38	45.11	174.1	129.0

Table C.23

Apparent consumption of primary goods in million tons (Brazil)

	Soybeans			Beef			Sugar			Iron ore		
	C	P	X	C	P	X	C	P	X	C	P	X
1997	18.05	26.39	8.34	5.87	5.92	0.05	9.32	15.70	6.38	53.81	187.9	134.1
1998	22.03	31.31	9.27	5.71	5.79	0.08	9.93	18.30	8.37	56.87	207.0	150.1
1999	22.07	30.99	8.92	6.26	6.41	0.15	8.00	20.10	12.10	50.50	202.2	139.8
2000	21.30	32.82	11.52	6.39	6.58	0.19	10.60	17.10	6.50	53.21	225.2	156.9
2001	22.21	37.88	15.68	6.46	6.82	0.37	9.23	20.40	11.17	54.25	219.2	155.7
2002	26.06	42.03	15.97	6.71	7.14	0.43	10.46	23.81	13.35	53.47	219.4	166.5
2003	32.03	51.92	19.89	6.61	7.23	0.62	12.62	25.53	12.91	61.07	235.9	174.8
2004	30.30	49.55	19.25	6.85	7.77	0.93	11.79	27.55	15.76	43.28	261.8	218.5
2005	28.75	51.18	22.44	6.69	7.77	1.09	9.92	28.06	18.15	66.70	290.9	224.2
2006	27.51	52.46	24.96	6.55	7.77	1.23	12.81	31.68	18.87	80.18	322.7	242.5
2007	34.12	57.86	23.73	0.00	0.00	0.00	17.12	36.47	19.36	96.38	365.8	269.4

Note: C = consumption; P = production; X = exports

Table C.24

Apparent consumption of primary goods (Korea)

	Rice	Barley		Rice	Barley
	million tons			million tons	
1950	2.79		**1978**	5.80	1.44
1951	2.17		**1979**	5.57	1.39
1952	1.77		**1980**	3.55	1.70
1953	2.70		**1981**	5.06	1.76
1954	2.87		**1982**	5.18	0.81
1955	2.96	1.03	**1983**	5.40	1.35
1956	2.44	0.61	**1984**	5.68	1.51
1957	3.02	0.85	**1985**	5.63	1.06
1958	3.17	0.98	**1986**	5.61	0.84
1959	3.17	1.24	**1987**	5.49	0.96
1960	3.05	1.04	**1988**	6.05	1.04
1961	3.46	1.09	**1989**	5.90	0.96
1962	3.02	0.95	**1990**	5.61	0.77
1963	3.76	1.18	**1991**	5.38	0.63
1964	3.95	1.36	**1992**	5.33	0.58
1965	3.50	1.37	**1993**	4.75	0.59
1966	3.92	1.48	**1994**	5.06	0.43
1967	3.60	1.38	**1995**	4.69	0.52
1968	3.20	0.92	**1996**	5.32	0.54
1969	4.09	1.51	**1997**	5.45	0.35
1970	3.94	1.81	**1998**	5.10	0.34
1971	4.00	2.02	**1999**	5.26	0.44
1972	3.96	1.92	**2000**	5.29	0.30
1973	4.21	1.68	**2001**	5.51	0.51
1974	4.45	1.67	**2002**	4.93	0.41
1975	4.67	1.59	**2003**	4.45	0.33
1976	5.22	1.51	**2004**	5.00	0.37
1977	6.01	1.60	**2005**	4.77	0.38

Table C.25

Apparent consumption of agrarian inputs

	Brazil					Korea
		Fertilizers		Fuel-oil	Tractors	Fertilizers
	Nitrogenised	Phosphate	Potasic			All types
	tons	tons	tons	1000 litres	units	metric tons
1951	18,647	89,636	27,814			
1952	10,654	57,171	14,868			
1953	20,674	78,972	30,252			
1954	17,844	94,290	27,464			
1955	23,063	107,919	47,978		719	991,758
1956	30,378	113,992	40,333		392	1,205,815
1957	28,690	144,610	58,312		1,793	814,255
1958	41,582	174,656	63,052		7,135	725,126
1959	44,993	151,087	55,634		4,597	772,204
1960	67,069	160,330	102,835		12,702	949,340
1961	55,064	144,213	70,727	427,200	8,141	886,545
1962	50,284	137,631	68,167	480,000	4,702	1,299,852
1963	62,061	143,571	91,750	537,600	9,999	1,141,215
1964	50,808	127,279	69,564	590,400	11,691	984,924
1965	70,569	108,577	99,732	648,000	12,956	1,251,837
1966	71,134	111,588	93,337	700,800	10,880	1,211,155
1967	106,082	204,605	136,937	756,000	10,903	1,143,240
1968	144,320	273,090	184,295	811,200	9,817	1,577,197
1969	164,430	265,666	200,288	865,920	11,990	1,362,838
1970	278,604	417,479	305,852	920,976	13,977	1,195,096
1971	278,281	493,828	350,608	1,010,400	18,453	1,098,273
1972	402,470	777,254	456,412	1,099,200	26,924	1,225,780
1973	348,891	802,076	528,532	1,188,000	33,544	1,532,083
1974	389,183	914,151	521,303	1,276,800	45,044	1,809,834
1975	406,234	1,013,848	557,614	1,699,742	52,426	2,176,656
1976	498,272	1,308,329	721,540	1,833,600	60,143	1,742,680
1977	700,480	1,545,476	962,938	1,934,400	65,100	1,811,438
1978	704,143	1,534,492	989,151	2,217,600	49,315	2,008,556
1979	780,253	1,691,812	1,103,374	2,496,000	41,967	2,107,037
1980	906,760	1,991,086	1,306,573	2,789,784	49,963	1,379,637
1981	668,640	1,322,200	766,646	2,908,800	50,865	1,703,082
1982	643,600	1,210,508	876,381	3,028,800	28,054	1,762,199
1983	637,196	1,053,861	728,118	3,148,800	24,668	1,490,798
1984	823,012	1,570,024	1,076,038	3,268,800	22,566	1,774,676
1985	827,839	1,312,788	1,067,604	3,395,083	41,660	2,076,738
1986	989,611	1,648,788	1,290,520	3,465,600	40,761	1,982,642
1987	963,848	1,651,693	1,538,308	3,518,400	45,307	2,571,547
1988	876,868	1,524,000	1,368,267	3,571,200	38,875	1,404,943
1989	868,999	1,315,904	1,238,816	3,624,000	29,936	2,593,113
1990	917,102	1,205,198	1,202,034	3,676,800	26,344	2,382,334
1991	936,288	1,296,008	1,279,257	3,729,600	21,331	2,491,351
1992	951,453	1,372,613	1,337,420	3,782,400	13,578	2,718,766
1993	1,184,400	1,660,148	1,729,502	3,835,200	12,281	2,579,108
1994	1,262,417	1,949,783	1,871,975	3,984,000	21,396	2,708,618
1995	1,221,596	1,602,700	1,775,268	4,036,800	38,491	2,889,578

Table C.25

Apparent consumption of agrarian inputs

	Brazil					Korea
		Fertilizers		Fuel-oil	Tractors	Fertilizers
	Nitrogenised	Phosphate	Potasic			All types
	tons	tons	tons	1000 litres	units	metric tons
1996	1,273,548	1,750,921	2,079,243	4,107,562	17,584	2,535,864
1997	1,494,957	2,056,740	2,416,239	4,104,830	10,291	2,598,282
1998	1,574,880	2,060,394	2,301,057	4,102,099	15,731	2,329,668
1999	1,690,844	1,978,908	2,266,108	4,094,568	18,158	2,751,468
2000	2,034,341	2,615,832	2,919,721	4,087,037	18,788	2,985,394
2001	1,738,099	2,596,287	2,883,816	4,079,510	24,291	2,600,604
2002	1,928,140	2,777,425	3,068,443	4,071,979	28,090	2,750,049
2003	2,299,556	3,312,438	3,659,514	4,064,448	33,186	2,790,524
2004	2,296,656	3,308,261	3,654,900	4,056,917	29,405	2,825,673
2005	2,037,131	2,934,423	3,241,891	4,049,386	28,636	3,182,371
2006	2,116,519	3,048,780	3,368,230	4,041,854	17,729	-
2007	2,482,417	3,575,844	3,950,520	-	20,141	-

Table C.26

International prices of agrarian inputs

	Fertilizers			Fuel-oil	Tractors	Fertilizers
	Nitrogenised	Phosfatic	Potasic			All types*
	US$ per ton	US$ per ton	US$ per ton	US$ per litre	US$ per unit	US$ per ton
1950	78	28	75			
1951	82	33	81			
1952	99	41	74			
1953	70	41	62			
1954	91	39	69			
1955	71	38	60		3,410	54
1956	64	39	59		3,496	54
1957	56	42	57		3,763	48
1958	55	40	53		3,924	47
1959	50	37	46		4,048	45
1960	45	39	45		4,000	46
1961	44	35	54		3,972	48
1962	43	36	50		4,124	54
1963	43	31	50		4,257	49
1964	47	38	49	0.048	4,324	75
1965	53	38	52	0.052	4,419	67
1966	47	40	45	0.052	4,628	97
1967	48	42	41	0.053	4,819	70
1968	43	43	37	0.053	5,047	48
1969	35	38	29	0.054	5,360	35
1970	33	33	41	0.055	5,607	41
1971	34	33	42	0.056	5,883	53
1972	34	31	42	0.057	6,187	52
1973	36	31	44	0.061	6,605	68
1974	61	49	55	0.083	7,755	153
1975	86	98	69	0.093	9,409	260
1976	73	78	69	0.098	10,473	97
1977	75	74	64	0.106	11,452	94
1978	74	75	68	0.111	12,498	89
1979	76	85	81	0.145	13,933	93
1980	92	112	98	0.199	15,587	141
1981	104	121	113	0.226	17,402	151
1982	102	121	111	0.222	18,837	131
1983	94	113	102	0.214	19,959	94
1984	101	113	111	0.213	20,709	121
1985	98	111	95	0.213	20,358	109
1986	81	109	87	0.171	19,911	91
1987	81	115	99	0.171	19,940	81
1988	95	125	125	0.174	20,671	99
1989	97	128	126	0.187	22,049	122
1990	94	117	121	0.225	23,199	127
1991	101	118	121	0.234	23,924	147
1992	97	112	117	0.216	25,133	141
1993	101	100	115	0.217	26,099	132
1994	114	115	115	0.207	26,749	133
1995	131	132	123	0.202	27,942	159

Table C.26

International prices of agrarian inputs

	Fertilizers			Fuel-oil	Tractors	Fertilizers
	Nitrogenised	Phosfatic	Potasic			All types*
	US$ per ton	US$ per ton	US$ per ton	US$ per litre	US$ per unit	US$ per ton
1996	133	140	122	0.243	28,233	154
1997	134	133	121	0.231	29,055	144
1998	110	136	130	0.196	29,949	134
1999	97	135	134	0.192	29,621	130
2000	120	117	131	0.285	30,594	134
2001	145	115	135	0.285	31,012	139
2002	108	121	130	0.255	31,197	135
2003	149	132	131	0.327	30,375	155
2004	172	146	144	0.346	30,649	189
2005	200	155	195	-	-	250
2006	207	163	217	-	-	258
2007	236	223	223	-	-	-

Note: * = Korean import price

Table C.27

Domestic prices of agrarian inputs

	Brazil					Korea
		Fertilizers		Fuel-oil	Tractors	Fertilizers
	Nitrogenised	Phosfatic	Potasic			All types
	R$ per ton	R$ per ton	R$ per ton	R$ per litre	R$ per unit	W$ per ton
1950	2.475E-12	4.873E-13	7.927E-13	1.589E-16		
1951	2.511E-12	6.000E-13	9.018E-13	1.865E-16		
1952	2.595E-12	6.400E-13	9.018E-13	2.694E-16		
1953	2.410E-12	5.709E-13	8.327E-13	3.627E-16		
1954	2.992E-12	6.691E-13	1.102E-12	3.662E-16		
1955	4.118E-12	9.273E-13	1.516E-12	4.836E-16	6.627E-11	3,280
1956	4.506E-12	1.065E-12	1.753E-12	5.423E-16	8.423E-11	9,826
1957	4.377E-12	1.153E-12	1.658E-12	1.233E-15	8.835E-11	10,292
1958	5.152E-12	1.287E-12	1.764E-12	1.327E-15	1.275E-10	10,292
1959	8.142E-12	1.585E-12	1.855E-12	2.200E-15	1.832E-10	11,066
1960	7.488E-12	1.665E-12	2.967E-12	2.280E-15	1.941E-10	12,146
1961	1.265E-11	4.364E-12	5.891E-12	4.484E-15	2.518E-10	12,342
1962	2.373E-11	6.400E-12	1.105E-11	5.876E-15	3.888E-10	13,642
1963	4.224E-11	1.168E-11	1.855E-11	1.038E-14	7.598E-10	13,986
1964	4.224E-11	2.164E-11	3.240E-11	2.115E-14	1.349E-09	17,151
1965	6.996E-11	3.915E-11	7.121E-11	4.140E-14	2.297E-09	24,536
1966	7.131E-11	4.393E-11	7.267E-11	5.309E-14	2.974E-09	24,536
1967	7.498E-11	4.578E-11	6.837E-11	6.936E-14	3.564E-09	21,396
1968	7.547E-11	5.927E-11	7.407E-11	8.455E-14	4.653E-09	21,396
1969	8.766E-11	7.267E-11	8.591E-11	1.128E-13	5.743E-09	22,942
1970	8.747E-11	7.625E-11	1.019E-10	1.347E-13	7.216E-09	23,700
1971	1.065E-10	8.439E-11	1.428E-10	1.685E-13	8.606E-09	22,900
1972	1.377E-10	1.182E-10	1.586E-10	2.131E-13	1.011E-08	22,300
1973	1.840E-10	1.494E-10	2.016E-10	2.382E-13	1.209E-08	24,700
1974	6.178E-10	4.107E-10	4.085E-10	3.311E-13	1.378E-08	31,600
1975	6.687E-10	4.544E-10	4.990E-10	4.537E-13	1.942E-08	51,100
1976	5.295E-10	4.978E-10	5.663E-10	6.942E-13	3.065E-08	93,800
1977	7.009E-10	5.738E-10	7.232E-10	9.618E-13	4.989E-08	87,000
1978	9.836E-10	7.006E-10	1.024E-09	1.530E-12	7.020E-08	89,900
1979	1.524E-09	1.141E-09	1.788E-09	2.564E-12	1.055E-07	92,300
1980	3.592E-09	2.655E-09	4.899E-09	5.312E-12	2.023E-07	123,100
1981	7.907E-09	5.525E-09	1.005E-08	1.350E-11	4.822E-07	178,200
1982	1.347E-08	1.164E-08	1.479E-08	2.603E-11	1.222E-06	193,600
1983	3.634E-08	2.610E-08	4.094E-08	6.590E-11	2.781E-06	195,800
1984	1.259E-07	8.417E-08	1.483E-07	2.164E-10	1.028E-05	206,600
1985	4.147E-07	2.797E-07	4.376E-07	6.216E-10	2.827E-05	206,600
1986	7.091E-07	6.209E-07	8.604E-07	1.116E-09	4.404E-05	200,318
1987	2.696E-06	1.883E-06	2.550E-06	3.260E-09	3.162E-04	197,087
1988	1.513E-05	1.145E-05	1.626E-05	2.358E-08	4.479E-03	178,419
1989	0.0003030	0.0002595	0.0002770	0.0000002	0.0807631	162,264
1990	0.0060051	0.0055018	0.0081801	0.0000072	0.8616279	165,136
1991	0.027014	0.024592	0.040256	0.000037	7.794801	165,495
1992	0.291998	0.214250	0.445661	0.000537	114.7019	171,778
1993	6.033750	4.226958	7.609040	0.011734	2,984.601	173,932
1994	143.7651	112.7297	176.6378	0.237242	25,033.63	173,932
1995	215.6933	161.1358	275.9333	0.350000	25,033.63	179,496

Table C.27

Domestic prices of agrarian inputs

	Brazil					Korea
		Fertilizers		Fuel-oil	Tractors	Fertilizers
	Nitrogenised	Phosfatic	Potasic			All types
	R$ per ton	R$ per ton	R$ per ton	R$ per litre	R$ per unit	W$ per ton
1996	264.457	193.244	327.427	0.381	26,523.487	180,035
1997	300.688	221.939	359.137	0.411	27,523.250	189,907
1998	269.517	219.429	352.805	0.416	28,564.747	268,706
1999	327.357	316.962	515.688	0.514	32,218.418	277,364
2000	361.165	336.852	554.708	0.657	36,432.411	288,620
2001	463.943	397.678	638.364	0.798	41,124.755	308,824
2002	559.516	466.264	766.994	0.993	47,543.068	322,100
2003	648.883	564.407	903.373	1.456	66,924.667	337,397
2004	907.926	678.325	1,072.244	1.494	81,432.321	359,621
2005	859.398	623.079	1,134.624	1.743	90,778.938	372,898
2006	735.137	558.503	996.789	1.923		373,763
2007	832.790	677.443	1,083.674	1.927		382,133

Table C.28

Labour productivity

	Industrial sector										Total economy			
	B	U	K*	U*	B/U	B**/U	K/U	K*/U	B	K*	B	K*	U	U*
	1947=100		1955=100		Relative to USA (in %)				AG in 2000 US$		1955=100			
1947	100	100			7	13								
1948	112	104			8	14								
1949	115	108			8	14								
1950	119	112			8	14								
1951	123	112			8	15								
1952	134	118			8	15								
1953	144	122			9	16								
1954	149	125			9	16								
1955	162	133	100	100	9	16	7	6	18,001	19,378	100	100	100	100
1956	171	133	112	100	9	17	8	7	17,894	19,140	100	112	99	103
1957	187	136	119	103	10	18	8	7	18,146	19,716	105	119	101	105
1958	217	139	131	107	11	21	9	7	18,332	20,271	113	131	102	105
1959	222	144	142	110	11	21	9	8	19,039	20,738	121	142	106	106
1960	236	147	141	113	12	21	9	8	19,313	21,442	128	141	107	109
1961	258	153	138	117	12	23	9	7	19,925	22,386	136	138	109	110
1962	264	159	158	121	12	22	9	8	20,783	22,835	142	158	114	111
1963	257	165	135	125	11	21	8	7	21,762	24,090	140	135	118	113
1964	262	172	137	130	11	20	8	6	22,724	25,067	141	137	122	115
1965	250	177	128	133	10	19	7	6	23,637	25,806	141	128	126	117
1966	290	179	147	134	12	22	8	7	23,513	25,770	146	147	131	120
1967	297	184	159	140	12	22	8	7	24,216	26,814	149	159	132	123
1968	331	191	188	146	13	23	9	8	24,839	27,592	159	188	135	126
1969	354	193	221	148	13	25	11	9	24,920	27,598	169	221	136	130
1970	389	193	249	152	15	27	12	10	24,545	27,893	182	249	135	134
1971	411	206	287	161	15	27	13	11	26,211	29,366	193	287	138	136
1972	431	217	308	167	15	27	13	11	27,548	30,182	206	308	140	141
1973	415	220	349	169	14	25	15	12	28,169	29,998	208	349	143	146
1974	385	217	409	170	13	24	17	14	28,118	29,359	220	409	140	152
1975	398	230	439	183	13	23	17	15	29,952	31,492	225	439	141	153
1976	426	240	458	189	13	24	18	15	31,136	32,502	242	458	144	158
1977	429	251	524	197	13	23	19	16	32,728	33,202	232	524	145	164
1978	447	254	602	199	13	24	22	18	32,912	32,370	237	602	147	171
1979	465	251	672	197	14	25	25	21	32,297	31,040	257	672	147	176
1980	490	255	682	203	14	26	24	20	32,558	32,145	285	682	146	178
1981	478	259	794	206	14	25	28	23	33,366	31,070	263	794	148	182
1982	514	274	801	223	14	25	26	22	35,214	34,459	252	801	146	181
1983	527	291	867	230	13	24	27	23	37,598	34,831	244	867	151	183
1984	571	303	980	235	14	25	30	25	38,867	34,316	246	980	156	189
1985	585	316	973	246	14	25	29	24	40,649	36,659	243	973	159	192
1986	586	331	1,057	258	13	24	30	25	42,839	37,825	261	1,057	161	199
1987	584	340	1,103	264	13	23	30	25	44,238	38,442	262	1,103	162	203
1988	588	350	1,214	269	12	22	33	27	45,712	37,813	254	1,214	165	206
1989	591	351	1,260	270	12	23	34	28	45,797	37,243	256	1,260	167	209
1990	566	361	1,387	279	11	21	36	30	47,610	37,256	240	1,387	168	214
1991	614	369	1,523	287	12	22	39	32	48,207	36,911	241	1,523	169	213

Table C.28
Labour productivity

	Industrial sector										Total economy			
	B	U	K*	U*	B/U	B**/U	K/U	K*/U	B	K*	B	K*	U	U*
	1947=100		1955=100		Relative to USA (in %)				AG in 2000 US$		1955=100			
1992	638	391	1,755	301	12	22	42	35	51,285	36,176	239	1,755	174	216
1993	701	402	1,926	305	13	23	46	38	52,251	34,527	248	1,926	176	217
1994	772	428	2,011	322	13	24	45	38	55,253	36,652	258	2,011	179	220
1995	800	440	2,192	333	13	24	48	40	56,757	36,357	266	2,192	181	222
1996	911	455	2,438	346	15	27	51	43	57,780	35,139	278	2,438	185	225
1997	1,001	475	2,698	357	16	28	55	46	59,707	33,652	286	2,698	189	229
1998	1,067	494	3,212	351	16	29	67	55	61,832	24,453	283	3,212	194	231
1999	1,133	517	3,435	365	16	29	68	57	64,541	24,016	280	3,435	199	234
2000	1,193	536	3,751	382	16	30	71	59	66,782	22,808	276	3,751	201	240
2001	1,195	545	3,910	421	16	29	67	56	68,030	28,637	283	3,910	203	243
2002	1,201	587	4,365	453	15	27	70	58	74,278	28,374	282	4,365	207	245
2003	1,225	620	4,650	479	15	26	71	58	78,958	29,500	281	4,650	210	250
2004	1,268	654	5,125	501	14	26	74	62	83,528	26,824	282	5,125	215	253
2005	1,225	669	5,475	512	13	24	78	64	86,164	23,822	282	5,475	218	258
2006	1,186	682	6,064	523	13	23	84	70	88,578	17,021		6,064	220	263
2007	1,203	709			12	23								

Note: B = Brazil; U = USA; K = Korea; * = corrected with the evolution of hours worked; ** = workers in the mainstream sector of manufacturing (i.e. firms covered by the Pesquisa Anual Industrial – Empresa; AG = absolute productivity gap

Table C.29

Hourly industrial wages and compensation (labour) costs in US$

	Korea				Brazil				USA			
	W		LC		W		LC		W		LC	
	MW	All	MW	All	MW	All	MW	All	MW	All	MW	All
1955	0.07		0.07		0.43	0.53	0.47	0.59	1.85	2.20	2.04	2.38
1956	0.07		0.07		0.53	0.66	0.59	0.73	1.96	2.33	2.16	2.53
1957	0.08		0.09		0.62	0.77	0.72	0.89	2.07	2.46	2.29	2.69
1958	0.08		0.09		0.62	0.77	0.73	0.90	2.17	2.57	2.41	2.82
1959	0.07		0.08		0.50	0.62	0.59	0.73	2.24	2.66	2.49	2.93
1960	0.07		0.07		0.50	0.61	0.59	0.72	2.32	2.75	2.59	3.05
1961	0.08		0.09		0.44	0.54	0.52	0.64	2.39	2.83	2.67	3.14
1962	0.09		0.10		0.50	0.62	0.59	0.73	2.46	2.92	2.77	3.25
1963	0.08		0.09		0.62	0.77	0.76	0.94	2.53	3.01	2.84	3.36
1964	0.06		0.07		0.54	0.67	0.68	0.84	2.64	3.14	2.97	3.51
1965	0.07		0.08		0.50	0.62	0.64	0.79	2.71	3.21	3.02	3.59
1966	0.08		0.09		0.48	0.59	0.61	0.76	2.80	3.33	3.17	3.75
1967	0.10		0.11		0.52	0.64	0.70	0.87	2.95	3.49	3.34	3.94
1968	0.13		0.14		0.53	0.66	0.72	0.88	3.16	3.75	3.60	4.25
1969	0.16		0.18		0.57	0.71	0.76	0.95	3.36	3.99	3.85	4.54
1970	0.20	0.25	0.22	0.28	0.66	0.81	0.89	1.10	3.61	4.28	4.12	4.89
1971	0.22	0.29	0.24	0.33	0.63	0.78	0.86	1.06	3.82	4.53	4.37	5.21
1972	0.23	0.28	0.25	0.31	0.75	0.93	1.03	1.28	4.00	4.75	4.60	5.50
1973	0.25	0.34	0.28	0.37	0.85	1.05	1.17	1.45	4.24	5.03	4.93	5.89
1974	0.34	0.41	0.38	0.45	1.06	1.31	1.47	1.82	4.67	5.54	5.48	6.53
1975	0.36	0.39	0.40	0.43	1.08	1.34	1.51	1.87	5.16	6.12	6.16	7.28
1976	0.47	0.49	0.52	0.54	1.27	1.57	1.77	2.19	5.58	6.57	6.71	7.90
1977	0.62	0.62	0.69	0.68	1.46	1.80	2.04	2.52	6.10	7.08	7.38	8.59
1978	0.83	0.82	0.92	0.90	1.76	2.17	2.46	3.04	6.64	7.62	8.08	9.26
1979	1.09	1.07	1.21	1.18	1.95	2.41	2.73	3.38	7.21	8.34	8.81	10.15
1980	1.05	1.12	1.16	1.24	1.89	2.34	2.66	3.29	7.84	9.33	9.63	11.41
1981	1.11	1.27	1.23	1.41	2.19	2.70	3.09	3.82	8.61	10.17	10.62	12.50
1982	1.18	1.26	1.31	1.40	2.33	2.88	3.28	4.06	9.18	11.11	11.43	13.75
1983	1.24	1.32	1.37	1.46	1.48	1.83	2.09	2.59	9.50	11.43	11.84	14.12
1984	1.29	1.45	1.43	1.61	1.25	1.55	1.77	2.19	9.87	11.90	12.27	14.60
1985	1.32	1.37	1.46	1.52	1.46	1.81	2.06	2.55	10.24	12.64	12.71	15.43
1986	1.39	1.54	1.55	1.71	1.68	2.08	2.37	2.94	10.50	13.20	12.99	16.14
1987	1.69	1.78	1.88	1.99	2.00	2.47	2.82	3.48	10.72	13.57	13.30	16.62
1988	2.33	2.49	2.58	2.75	1.70	2.10	2.41	2.98	10.95	14.05	13.61	17.20
1989	3.30	2.90	3.71	3.26	3.15	3.90	4.56	5.64	11.26	14.50	14.04	17.79
1990	3.83	3.22	4.37	3.68	2.80	3.46	4.18	5.17	11.80	15.19	14.81	18.58
1991	4.36	3.75	5.12	4.40	2.21	2.73	3.30	4.08	12.24	15.90	15.52	19.70
1992	4.80	4.16	5.76	5.00	2.28	2.82	3.40	4.21	12.49	16.50	15.95	20.67
1993	5.17	4.64	6.29	5.64	2.46	3.04	3.68	4.55	12.78	16.71	16.37	21.12
1994	5.96	5.27	7.10	6.28	2.99	3.70	4.51	5.58	13.16	17.19	16.78	21.66
1995	6.76	6.64	8.04	7.90	3.71	4.59	5.59	6.92	13.56	17.92	17.17	22.15
1996	7.40	7.45	8.96	9.02	3.80	4.70	5.76	7.13	14.05	18.59	17.74	22.52
1997	6.66	6.65	8.66	8.65	3.84	4.68	5.77	7.03	14.42	19.33	18.20	23.05
1998	4.55	4.93	6.19	6.72	3.63	4.42	5.50	6.70	14.73	20.48	18.52	22.22
1999	6.16	6.13	8.73	8.70	2.29	2.83	3.40	4.19	15.12	21.38	18.90	23.27
2000	7.02	6.91	9.63	9.48	2.37	2.91	3.51	4.31	15.69	23.01	19.65	24.95

Table C.29

Hourly industrial wages and compensation (labour) costs in US$

	Korea				Brazil				USA			
	W		LC		W		LC		W		LC	
	MW	All	MW	All	MW	All	MW	All	MW	All	MW	All
2001	6.61	5.41	8.95	7.32	2.00	2.43	2.97	3.60	16.24	22.47	20.52	27.55
2002	7.50	6.13	9.88	8.08	1.73	2.07	2.56	3.06	16.92	23.04	21.60	29.07
2003	8.59	6.94	10.97	8.86	1.85	2.17	2.75	3.23	17.44	24.06	22.48	31.40
2004	9.86	8.19	12.25	10.17	2.14	2.59	3.14	3.81	17.89	24.88	21.13	31.66
2005	12.03	10.11	14.49	12.18	2.80	3.37	4.16	5.01	18.39	25.78	23.81	32.68

Note: W = wage; LC = labour cost; MW = manual workers; All = all employees

Table C.30

Real purchasing power of hourly industrial wages

	Korea		Brazil		USA	
	Manual*	All	Manual	All	Manual	All
	US$ PPP 2005		US$ PPP 2005		US$ PPP 2005	
1955	0.65		5.11	4.24	13.51	16.02
1956	0.63		5.48	4.56	14.10	16.72
1957	0.63		5.91	4.91	14.39	17.07
1958	0.69		5.95	4.95	14.65	17.37
1959	0.72		5.82	4.83	15.00	17.79
1960	0.66		5.99	4.98	15.32	18.17
1961	0.68		6.01	4.99	15.58	18.48
1962	0.68		6.59	5.48	15.87	18.82
1963	0.65		7.34	6.10	16.17	19.18
1964	0.60		7.09	5.90	16.65	19.75
1965	0.61		6.64	5.52	16.76	19.88
1966	0.64		7.08	5.89	16.87	20.00
1967	0.72		6.93	5.76	17.24	20.44
1968	0.82		7.40	6.15	17.76	21.06
1969	1.00		7.89	6.56	17.91	21.24
1970	1.11	1.27	7.39	6.14	18.15	21.53
1971	1.22	1.47	7.86	6.53	18.42	21.85
1972	1.29	1.42	8.90	7.39	18.69	22.17
1973	1.39	1.68	8.12	6.75	18.65	22.12
1974	1.56	1.68	8.71	7.24	18.48	21.92
1975	1.56	1.51	8.03	6.67	18.72	22.20
1976	1.75	1.65	8.90	7.39	19.15	22.54
1977	2.11	1.89	9.50	7.90	19.66	22.81
1978	2.48	2.19	10.57	8.79	19.88	22.80
1979	2.75	2.42	11.25	9.35	19.40	22.43
1980	2.57	2.47	11.81	9.81	18.58	22.11
1981	2.51	2.59	11.75	9.76	18.50	21.85
1982	2.68	2.58	12.11	10.06	18.58	22.48
1983	2.87	2.76	10.03	8.34	18.63	22.40
1984	3.05	3.09	9.75	8.11	18.55	22.37
1985	3.28	3.08	10.88	9.04	18.59	22.94
1986	3.43	3.42	12.43	10.33	18.71	23.52
1987	3.76	3.57	9.79	8.14	18.41	23.30
1988	4.30	4.15	9.53	7.92	18.08	23.21
1989	5.29	4.13	9.03	7.50	17.74	22.85
1990	5.95	4.40	7.02	5.83	17.64	22.70
1991	6.44	4.71	5.81	4.83	17.55	22.80
1992	7.09	5.12	5.96	4.95	17.38	22.96
1993	7.50	5.53	6.11	5.08	17.28	22.60
1994	8.15	6.05	6.22	5.17	17.34	22.65
1995	8.49	7.01	6.64	5.52	17.38	22.96
1996	9.24	7.68	6.32	5.25	17.49	23.14
1997	9.41	7.23	6.33	5.26	17.54	23.52
1998	8.80	7.01	6.23	5.18	17.65	24.53
1999	10.03	7.04	5.63	4.68	17.73	25.06
2000	10.64	7.63	5.77	4.80	17.79	26.09

Table C.30

Real purchasing power of hourly industrial wages

	Korea		Brazil		USA	
	Manual*	All	Manual	All	Manual	All
	US$ PPP 2005		US$ PPP 2005		US$ PPP 2005	
2001	11.00	6.64	5.37	4.47	17.91	24.78
2002	11.76	7.29	5.03	4.18	18.37	25.02
2003	12.39	7.83	4.64	3.85	18.51	25.54
2004	13.20	8.82	4.95	4.12	18.50	25.73
2005	14.01	9.77	5.23	4.34	18.39	25.78

Note: * = manual workers with permanent employment contract

Table C.31

Inflows of interest-bearing capital, stock of external debts and foreign exchange reserves (Brazil)

	LTL	AK	LCB	NIP	STL	ED	FXR
				Million US$			
1947	32	-48	80	13	221		929
1948	9	-61	0	25	70		883
1949	40	-107	38	21	153		875
1950	28	-85	0	27	-105		821
1951	38	-27	28	20	311		584
1952	35	-33	-28	22	630		482
1953	44	-46	486	34	-572		421
1954	109	-134	200	48	21		372
1955	84	-140	61	35	-37		442
1956	231	-187	-28	67	51	2,736	608
1957	319	-242	37	67	-153	2,491	474
1958	373	-324	195	58	-137	2,870	465
1959	439	-377	-21	91	121	3,160	366
1960	348	-417	61	115	431	3,738	345
1961	579	-327	260	114	-192	3,291	470
1962	325	-310	120	118	88	3,533	285
1963	250	-364	187	87	-11	3,612	215
1964	221	-277	52	131	-243	3,294	244
1965	363	-304	250	156	-308	3,823	483
1966	508	-350	9	155	-87	3,771	421
1967	530	-444	-33	184	-47	3,440	198
1968	583	-484	-12	144	526	4,092	257
1969	1,023	-493	0	182	126	4,635	656
1970	1,440	-673	0	234	325	6,240	1,187
1971	2,070	-855	0	302	659	8,284	1,723
1972	4,375	-1,210	0	359	788	11,464	4,183
1973	4,555	-1,674	0	514	836	14,857	6,416
1974	7,058	-1,928	0	652	507	20,032	5,269
1975	6,136	-2,185	0	1,498	761	25,115	4,040
1976	8,042	-3,009	0	1,810	3,256	32,145	6,544
1977	8,766	-4,135	0	2,104	-365	37,951	7,256
1978	14,284	-5,440	0	2,696	1,625	52,187	11,895
1979	11,992	-6,542	0	4,186	504	55,803	9,689
1980	12,440	-6,824	0	6,311	2,640	64,259	6,913
1981	18,123	-7,888	0	9,161	1,116	73,963	7,507
1982	14,422	-8,470	4,177	11,353	-720	85,487	3,994
1983	14,722	-7,691	-1,481	9,555	68	93,745	4,563
1984	15,981	-8,314	1,796	10,203	-4,023	102,127	11,995
1985	11,166	-10,452	-63	9,659	-2,997	105,171	11,608
1986	13,232	-13,072	-613	9,327	475	111,203	6,760
1987	11,973	-13,630	-1,147	8,792	4,613	121,188	7,458
1988	15,470	-17,049	-456	9,832	-7,071	113,511	9,140
1989	31,326	-34,688	-852	9,633	4,288	115,506	9,679
1990	4,143	-8,778	-741	9,748	11,331	123,439	9,973
1991	5,827	-7,721	-590	8,621	6,103	123,910	9,406
1992	27,304	-8,402	-406	7,253	-13,630	135,949	23,754
1993	12,355	-9,711	-496	8,280	5,706	145,726	32,211

Table C.31

Inflows of interest-bearing capital, stock of external debts and foreign exchange reserves (Brazil)

	LTL	AK	LCB	NIP	STL	ED	FXR
				Million US$			
1994	54,651	-46,158	-129	6,337	8,158	148,295	38,806
1995	17,429	-10,409	-239	7,946	21,293	159,256	51,840
1996	25,867	-13,754	-387	8,778	13,313	179,935	60,110
1997	45,768	-25,235	-234	9,483	-21,153	199,998	52,173
1998	61,048	-29,790	8,944	11,437	-27,463	241,644	44,556
1999	40,557	-45,437	2,803	14,876	-5,489	241,468	36,342
2000	37,319	-31,977	-10,434	14,649	-2,234	236,156	33,011
2001	34,624	-35,151	6,639	14,877	310	226,067	35,866
2002	18,594	-31,025	11,363	13,130	-4,616	227,689	37,823
2003	23,001	-27,056	4,645	13,020	-811	235,414	49,296
2004	20,387	-33,067	-4,494	13,364	-718	220,182	52,935
2005	28,542	-32,694	-23,402	13,496	4,110	187,987	53,799
2006	43,880	-43,989	-138	11,289	18,926	199,372	85,839
2007	36,011	-37,961	-138	7,255	38,421	240,495	180,334

Note: LTL = long-term loans; AK = amortizations of capital; LCB = loans to the Central Bank; NIP = net interest payments; STL = short-term loans; ED = external debts; FXR = foreign exchange reserves

Table C.32

Inflows of capital (loans and aid), stock of external debts and foreign exchange reserves (Korea)

	AI	NB	I	ED	FXR
			Million US$		
1955	240				95
1956	298				97
1957	355				114
1958	319				145
1959	229	6.7			146
1960	256	4.8			155
1961	207	2.6			205
1962	200	55		0	167
1963	208	86		160	130
1964	141	40		180	129
1965	135	101		210	138
1966	122	218		390	236
1967	135	420		650	347
1968	121	533		1,200	388
1969	98	499		1,800	550
1970	82	420		2,580	584
1971	64	395		3,331	401
1972	52	444		4,151	481
1973		719		5,085	829
1974		1,171		6,599	276
1975		555		8,411	777
1976		1,444	492	10,347	1,962
1977		3,314	682	14,343	2,955
1978		1,986	972	17,301	2,736
1979		4,120	1,465	22,886	2,910
1980		4,003	2,591	29,480	2,912
1981		33	3,476	32,989	2,619
1982		405	3,936	37,330	2,744
1983		-1,512	4,601	40,419	2,230
1984		-2,863	4,543	42,099	2,723
1985		867	4,167	47,133	2,829
1986		-4,332	3,924	46,725	3,301
1987		-10,751	3,834	39,808	3,566
1988		-7,552	3,459	35,715	12,340
1989		-6,468	3,551	32,798	14,978
1990		-1,156	3,326	34,968	14,459
1991		1,823	2,942	39,733	13,306
1992		1,611	2,812	44,156	16,640
1993		116	2,930	47,202	19,704
1994		21,502	3,710	72,414	25,032
1995		8,008	5,388	85,810	31,928
1996		23,979	6,014	115,803	33,237
1997		13,900	7,281	136,984	19,710
1998		-5,826	7,939	139,097	51,963
1999				129,784	73,700
2000				134,417	95,855
2001				128,687	102,487

Table C.32

Inflows of capital (loans and aid), stock of external debts and foreign exchange reserves (Korea)

	AI	NB	I	ED	FXR
			Million US$		
2002				141,470	120,811
2003				157,394	154,509
2004				172,259	198,175
2005				187,882	209,968
2006				263,386	238,388
2007				380,665	261,771

Note: AI = aid inflows; NB = net borrowing; I = interest payments; ED = external debts; FXR = foreign exchange reserves

Table C.33

Rate of profit of industrial capital in the USA

1957	20.0	**1981**	24.5
1958	15.4	**1982**	25.7
1959	18.9	**1983**	21.9
1960	16.6	**1984**	21.3
1961	15.9	**1985**	14.0
1962	17.6	**1986**	16.4
1963	18.4	**1987**	19.2
1964	19.8	**1988**	22.5
1965	22.0	**1989**	18.9
1966	22.5	**1990**	15.1
1967	19.3	**1991**	9.4
1968	20.8	**1992**	3.3
1969	20.0	**1993**	11.3
1970	15.7	**1994**	21.9
1971	16.3	**1995**	22.4
1972	18.4	**1996**	23.3
1973	21.8	**1997**	22.7
1974	23.3	**1998**	21.2
1975	18.9	**1999**	22.7
1976	22.7	**2000**	20.8
1977	23.2	**2001**	4.5
1978	18.9	**2002**	10.8
1979	22.7	**2003**	15.7
1980	23.2	**2004**	20.3

Table C.34
Interest rates (Brazil)

	Treasury Bills		Money market		Loans	
	Nom	Real	Nom	Real	Nom	Real
1948			6.00			
1949			6.00	1.77		
1950			6.00	-3.38		
1951			6.00	-6.07		
1952			6.00	-11.32		
1953			6.00	-8.31		
1954			6.00	-16.51		
1955			6.00	-17.07		
1956			6.00	-15.03		
1957			6.00	-10.04		
1958			8.00	-6.78		
1959			8.00	-31.17		
1960			8.00	-21.45		
1961			8.00	-25.25		
1962			8.00	-41.52		
1963			8.00	-64.75		
1964			8.00	-83.74		
1965			12.00	-53.68		
1966			12.00	-29.31		
1967			22.00	-8.45		
1968			22.00	-0.02		
1969			21.00	-1.64		
1970			20.00	-2.40		
1971			20.00	-0.15		
1972			20.00	3.44		
1973			18.00	-8.60		
1974			18.00	-9.60		
1975			18.00	-10.96		
1976			25.33	-16.54		
1977			28.33	-15.40		
1978			31.50	-7.20		
1979			33.58	-19.11		
1980			47.33	-35.46		
1981			89.74	-15.84		
1982			120.66	22.67		
1983			203.23	61.25		
1984			257.32	60.58		
1985			281.65	54.69		
1986			105.22	-38.52		
1987			424.38	192.69		
1988			1,193	510.6		
1989			6,405	5,118		
1990			15,779	12,811		
1991			848	414		
1992			1,574	573		
1993			3,284	1,179		

Table C.34
Interest rates (Brazil)

	Treasury Bills		Money market		Loans	
	Nom	Real	Nom	Real	Nom	Real
1994			4,821	2,185		
1995	49.93	-2.26	53.37	-28.82		
1996	25.73	6.32	27.45	8.05		
1997	24.79	16.88	25.00	17.09	78.19	70.29
1998	28.57	23.12	29.50	24.05	86.36	80.91
1999	26.39	20.87	26.26	20.75	80.44	74.93
2000	18.51	10.56	17.59	9.64	56.83	48.88
2001	20.06	13.13	17.47	10.54	57.62	50.69
2002	19.43	11.22	19.11	10.90	62.88	54.66
2003	22.11	7.32	23.37	8.58	67.08	52.29
2004	17.14	10.79	16.24	9.89	54.93	48.57
2005	18.76	12.72	19.12	13.09	55.38	49.35
2006	14.38	10.81	15.28	11.71	50.81	47.24
2007	11.50	8.07	11.98	8.55	43.72	40.28

Table C.35

Interest rates (Korea)

	Loans		Trade		Corp. bonds		Curb market	
	Nom	Real	Nom	Real	Nom	Real	Nom	Real
1953	18.30	-27.00					60.00	14.70
1954	18.30	-17.15					60.00	24.55
1955	18.30	-51.12					60.00	-9.42
1956	18.30	-4.24					50.00	27.46
1957	18.30	-4.81					50.00	26.89
1958	18.30	21.37					50.00	53.07
1959	17.50	13.15					50.00	45.65
1960	17.50	9.17					50.00	41.67
1961	17.50	9.30	13.90	5.70			50.00	41.80
1962	15.70	8.12	9.10	1.52			50.00	42.42
1963	15.70	-4.02	8.00	-11.72			52.60	32.88
1964	16.00	-13.41	8.00	-21.41			61.80	32.39
1965	26.00	12.36	6.50	-7.14			58.70	45.06
1966	26.00	14.74	6.50	-4.76			58.70	47.44
1967	26.00	15.11	6.00	-4.89			56.50	45.61
1968	25.20	14.44	6.00	-4.76			56.00	45.24
1969	24.00	11.61	6.00	-6.39			51.40	39.01
1970	24.00	8.04	6.00	-9.96			49.80	33.84
1971	22.00	8.49	6.00	-7.51			46.40	32.89
1972	15.50	3.81	6.00	-5.69			39.00	27.31
1973	15.50	12.28	6.00	2.78			33.40	30.18
1974	15.50	-8.80	9.00	-15.30			40.60	16.30
1975	15.50	-9.76	7.00	-18.26			41.30	16.04
1976	18.00	2.68					40.50	25.18
1977	16.00	5.91					38.10	28.01
1978	19.00	4.54					39.30	24.84
1979	19.00	0.68					42.40	24.08
1980	20.00	-8.70	15.00	-13.70	18.02	-10.68	44.90	16.20
1981	17.00	-4.35	15.00	-6.35	17.39	-3.96	35.30	13.95
1982	10.00	2.81	11.00	3.81	19.25	12.06	32.80	25.61
1983	10.00	6.58	10.00	6.58	14.40	10.98	25.80	22.38
1984	10-11.5	7.7-9.2	10.00	7.73	13.55	11.28	24.80	22.53
1985	10-11.5	7.5-9.0	10.00	7.54	13.37	10.91	24.00	21.54
1986	10-11.5	7.3-8.8	10.00	7.25	13.25	10.50	23.10	20.35
1987	10-11.5	6.9-8.5			12.88	9.84	22.90	19.85
1988	11-13.0	3.8-5.8			12.80	5.65	22.70	15.55
1989	10-12.5	4.3-6.8			15.73	10.03	19.10	13.40
1990	10-12.5	1.4-3.9			13.32	4.74	18.70	10.13
1991	10-12.5	0.7-3.2			13.43	4.09	21.40	12.07
1992	10-12.5	3.8-6.3			16.22	10.00	20.00	13.79
1993	8.5-12	3.2-7.2			12.63	7.83	20.00	15.20
1994	8.5-12	1.7-5.7			12.88	6.62	20.00	13.73
1995	8.5-12	3.5-7.5			13.81	9.33		
1996					11.75	6.83		
1997					13.39	8.95		
1998					15.10	7.59		

Table C.35

Interest rates (Korea)

	Loans		Trade		Corp. bonds		Curb market	
	Nom	Real	Nom	Real	Nom	Real	Nom	Real
1999					8.86	8.05		
2000					9.35	7.09		
2001					7.05	2.98		
2002					6.56	3.80		
2003					5.43	1.92		
2004					4.73	1.14		
2005					4.68	1.93		
2006					5.17	2.97		
2007					5.70	3.16		

Table C.36

Domestic debts outstanding

	Brazil				Korea				USA	
	Total		Public sector		Total		Public sector		Total*	
	million R$	% GDP	million R$	% GDP	billion W$	% GDP	billion W$	% GDP	billion US$	% GDP
1953	6.04E-11	33.9	1.56E-11	8.8	3.4	7.0	0.9	1.9	517	135
1954	7.56E-11	31.0	2.00E-11	8.2	8.0	12.0	5.4	8.1	542	136
1955	8.55E-11	28.8	2.29E-11	7.7	13.0	11.3	8.4	7.3	582	142
1956	1.09E-10	29.1	3.35E-11	8.9	25.2	16.5	16.9	11.1	611	140
1957	1.41E-10	31.1	4.76E-11	10.5	37.1	18.6	24.7	12.4	643	140
1958	1.72E-10	30.4	5.75E-11	10.2	42.7	20.6	24.5	11.8	682	139
1959	2.22E-10	26.3	7.53E-11	8.9	46.1	21.0	25.1	11.4	739	146
1960	3.17E-10	27.4	1.09E-10	9.4	22.1	8.9	7.8	3.1	780	146
1961	4.49E-10	26.5	1.61E-10	9.5	50.4	17.0	14.1	4.7	828	148
1962	7.24E-10	26.7	2.63E-10	9.7	71.1	19.8	24.6	6.9	888	152
1963	1.16E-09	23.9	4.47E-10	9.2	83.4	16.4	28.7	5.6	953	152
1964	2.05E-09	21.5	7.65E-10	8.0	90.4	12.5	25.1	3.5	1,028	154
1965	3.07E-09	19.8	1.04E-09	6.7	118.7	14.6	33.7	4.1	1,106	155
1966	3.90E-09	17.1	1.18E-09	5.2	153.3	14.7	34.5	3.3	1,187	154
1967	6.14E-09	20.4	1.87E-09	6.2	260.5	20.3	39.5	3.1	1,268	151
1968	9.46E-09	22.6	2.48E-09	5.9	468.7	28.2	37.0	2.2	1,373	152
1969	1.82E-08	33.1	3.53E-09	6.4	751.1	34.6	44.8	2.1	1,493	151
1970	2.60E-08	36.8	4.18E-09	5.9	962.4	34.7	43.0	1.6	1,602	152
1971	3.64E-08	38.7	1.09E-09	1.2	1,240	36.1	38.5	1.1	1,753	154
1972	5.89E-08	46.7	6.18E-09	4.9	1,600	37.7	137	3.2	1,938	156
1973	8.51E-08	45.7	7.27E-09	3.9	2,074	37.7	174	3.2	2,175	156
1974	1.29E-07	47.6	4.00E-09	1.5	3,171	40.4	309	3.9	2,413	157
1975	2.07E-07	54.2	6.18E-09	1.6	4,201	40.1	648	6.2	2,621	161
1976	3.43E-07	57.7	1.89E-08	3.2	5,165	35.8	712	4.9	2,908	160
1977	5.35E-07	59.0	4.15E-08	4.6	6,395	34.6	796	4.3	3,293	159
1978	6.00E-07	45.6	-6.29E-08	-4.8	9,295	37.3	1,035	4.1	3,779	162
1979	1.09E-06	50.5	-1.20E-08	-0.6	12,605	39.3	1,114	3.5	4,276	165
1980	1.94E-06	42.6	2.55E-08	0.6	17,719	45.3	1,673	4.3	4,725	167
1981	4.10E-06	46.9	1.93E-07	2.2	23,215	47.1	2,942	6.0	5,258	169
1982	8.90E-06	50.3	8.22E-07	4.6	29,044	51.2	3,674	6.5	5,770	168
1983	2.44E-05	61.3	4.32E-06	10.9	33,683	50.5	3,849	5.8	6,466	177
1984	7.13E-05	56.3	7.53E-06	6.0	38,087	49.8	4,001	5.2	7,431	183
1985	2.56E-04	53.8	4.56E-05	9.6	44,847	52.3	4,299	5.0	8,623	189
1986			1.94E-04	15.2	51,384	51.3	4,725	4.7	9,813	204
1987			1.17E-03	28.9	59,767	50.7	3,833	3.3	10,825	220
1988	0.052	177.4	0.021	70.4	66,685	47.5	2,409	1.7	11,867	228
1989	0.906	212.9	0.351	82.5	81,732	51.5	937	0.6	12,840	233
1990	10.120	87.6	5.083	44.0	102,194	53.4	209	0.1	13,769	234
1991	53.015	87.9	25.020	41.5	125,074	54.0	2,569	1.1	14,453	237
1992	831.66	129.8	282.55	44.1	139,463	52.8	2,899	1.1	15,215	241
1993	25,381	180.0	6,272	44.5	157,358	52.7	2,659	0.9	16,184	240
1994	301,747	86.4	56,913	16.3	186,520	53.3	1,632	0.5	17,214	243
1995	396,019	56.1	86,213	12.2	213,687	52.2	30	0.0	18,475	243
1996	482,172	57.1	131,317	15.6	255,240	55.4	-813	-0.2	19,813	250
1997	558,260	59.4	165,160	17.6	314,581	62.1	5,574	1.1	21,245	253
1998	654,013	66.8	342,314	35.0	351,179	70.1	17,748	3.5	23,338	256

Table C.36

Domestic debts outstanding

	Brazil				Korea				USA	
	Total		Public sector		Total		Public sector		Total*	
	million R$	% GDP	million R$	% GDP	billion W$	% GDP	billion W$	% GDP	billion US$	% GDP
1999	754,911	70.9	415,974	39.1	412,126	75.1	15,505	2.8	25,406	267
2000	847,533	71.9	453,567	38.5	479,780	79.5	10,955	1.8	27,157	274
2001	958,727	73.6	543,984	41.8	546,056	83.8	13,106	2.0	29,344	277
2002	1,119,300	75.7	643,862	43.6	645,391	89.6	7,909	1.1	31,843	290
2003	1,275,790	75.0	766,913	45.1	705,594	92.0	12,568	1.6	34,623	304
2004	1,427,620	73.5	844,046	43.5	722,700	87.4	20,555	2.5	37,808	316
2005	1,653,420	77.0	921,535	42.9	790,777	91.4	36,753	4.2	41,269	324
2006	2,018,150	85.2	1,045,185	44.1	907,957	99.9	43,396	4.8	45,325	332
2007	2,436,530	91.6	1,108,274	41.6	993,013	101.8	21,461	2.2	49,866	344

Note: * = includes external debts

Table C.37

Foreign direct investments

	Brazil	Korea	Brazil	Korea	Brazil	Korea
	million US$		million 2004 US$		% of GDP	
1947	55		466			
1948	67		525			
1949	44		349			
1950	39		306		0.79	
1951	63		458		1.04	
1952	94		670		1.47	
1953	60		424		0.85	
1954	51		358		0.64	
1955	79		557		0.98	
1956	139		965		1.55	
1957	178		1,197		1.71	
1958	128		837		0.98	
1959	158		1,026		1.13	
1960	138		881		0.88	
1961	147		929		0.80	
1962	132	0.6	826	4	0.68	0.04
1963	87	2.5	537	15	0.45	0.13
1964	86	4	524	24	0.44	0.17
1965	154	8	924	48	0.85	0.37
1966	159	10	927	58	0.72	0.36
1967	115	15	650	85	0.50	0.48
1968	137	20	744	109	0.47	0.52
1969	219	20	1,126	103	0.62	0.40
1970	392	30	1,907	146	0.92	0.49
1971	449	30	2,094	140	0.92	0.42
1972	460	50	2,078	226	0.79	0.66
1973	1,181	80	5,023	340	1.73	0.79
1974	1,208	100	4,628	383	1.49	0.79
1975	1,203	150	4,223	526	1.28	1.00
1976	1,391	150	4,618	498	1.24	0.81
1977	1,827	104	5,696	325	1.50	0.44
1978	2,180	101	6,317	291	1.54	0.33
1979	2,408	126	6,265	328	1.34	0.34
1980	1,910	96	4,379	221	0.79	0.24
1981	2,522	102	5,241	212	1.05	0.22
1982	3,115	69	6,098	135	1.18	0.13
1983	1,326	69	2,515	130	0.54	0.10
1984	1,501	110	2,729	200	0.53	0.13
1985	1,418	234	2,490	410	0.43	0.24
1986	317	435	547	750	0.09	0.37
1987	1,169	601	1,944	999	0.34	0.43
1988	2,805	871	4,479	1,391	0.86	0.51
1989	1,130	758	1,721	1,156	0.32	0.38
1990	989	789	1,429	1,140	0.32	0.32
1991	1,102	1,180	1,529	1,636	0.33	0.39
1992	2,061	728	2,775	980	0.63	0.21
1993	1,291	586	1,688	766	0.36	0.15

Table C.37

Foreign direct investments

	Brazil	Korea	Brazil	Korea	Brazil	Korea
	million US$		million 2004 US$		% of GDP	
1994	2,150	809	2,740	1,031	0.62	0.17
1995	4,405	1,776	5,460	2,201	1.11	0.31
1996	10,792	2,325	12,993	2,800	2.40	0.36
1997	18,993	2,844	22,354	3,347	3.80	0.39
1998	28,856	5,143	33,441	5,959	5.61	0.75
1999	28,578	15,500	32,404	17,576	5.20	1.91
2000	32,779	15,700	35,958	17,221	5.54	1.74
2001	22,457	11,800	23,954	12,587	3.63	1.21
2002	16,590	9,100	17,420	9,556	2.70	0.81
2003	10,144	6,500	10,414	6,674	1.67	0.54
2004	18,146	12,800	18,146	12,800	2.75	0.96
2005	15,066		14,573		2.25	-
2006	18,822		17,636		2.73	-
2007	34,585		31,507		4.71	

Table C.38

Trade and current account results in million U$S

	Brazil		Korea	
	TA	CA	TA	CA
1947	96.2			
1948	207.4			
1949	139.1			
1950	413.6			
1951	44.2			
1952	-302.1		-186.0	
1953	394.7		-305.0	
1954	147.1		-219.0	
1955	319.5		-323.0	
1956	407.4		-361.0	
1957	106.3		-419.0	
1958	65.8		-364.0	
1959	72.2		-284.0	
1960	-24.0		-312.0	
1961	111.1		-275.0	
1962	-89.7		-366.0	
1963	112.5		-473.0	
1964	343.4		-286.0	-26.1
1965	654.9		-290.0	9.1
1966	438.0		-465.0	-103.4
1967	212.8		-675.0	-191.9
1968	26.2		-1,006.0	-440.3
1969	317.9		-1,200.0	-548.6
1970	232.0		-1,148.0	-622.5
1971	-343.5		-1,327.0	-847.5
1972	-241.1		-897.0	-371.2
1973	7.0		-1,019.0	-308.8
1974	-4,690.3		-2,390.0	-2,022.7
1975	-3,540.4	-6,968.0	-2,329.0	-1,886.9
1976	-2,254.7	-6,520.0	-1,058.0	-313.6
1977	96.8	-5,049.0	-763.0	12.3
1978	-1,024.2	-6,996.0	-2,250.0	-1,085.2
1979	-2,839.5	-10,516.0	-5,282.0	-4,151.1
1980	-2,822.8	-12,831.0	-4,780.0	-5,312.2
1981	1,202.5	-11,764.0	-4,863.0	-4,478.0
1982	780.1	-16,317.0	-2,398.0	-2,550.5
1983	6,470.4	-6,834.0	-1,746.0	-1,524.1
1984	13,089.5	33.0	-1,386.0	-1,293.1
1985	12,485.5	-280.0	-854.0	-795.1
1986	8,304.3	-5,311.0	3,130.0	4,709.4
1987	11,173.1	-1,452.0	6,261.0	10,058.4
1988	19,184.1	4,156.0	8,885.0	14,505.4
1989	16,119.2	1,002.0	912.0	5,344.2
1990	10,752.4	-3,823.0	-4,828.0	-2,014.4
1991	10,580.0	-1,450.0	-9,654.8	-8,417.4
1992	15,238.9	6,089.0	-5,143.8	-4,095.2
1993	13,298.8	20.0	-1,564.2	821.1

Table C.38

Trade and current account results in million U$S

	Brazil		Korea	
	TA	CA	TA	CA
1994	10,466.5	-1,153.0	-6,334.8	-4,024.2
1995	-3,465.6	-18,136.0	-10,061.0	-8,665.1
1996	-5,599.0	-23,248.0	-20,624.0	-23,209.8
1997	-6,752.9	-30,491.0	-8,452.0	-8,383.7
1998	-6,574.5	-33,829.0	39,031.2	40,371.2
1999	-1,198.9	-25,400.0	23,933.0	24,521.9
2000	-697.7	-24,224.5	11,787.0	12,250.8
2001	2,650.5	-23,214.5	9,341.0	8,032.6
2002	13,121.3	-7,636.6	10,345.0	5,393.9
2003	24,793.9	4,177.3	14,990.0	11,949.5
2004	33,640.5	11,737.6	29,382.0	28,173.5
2005	44,702.9	13,984.3	23,181.0	14,980.9
2006	46,456.6	13,619.7	16,082.0	5,385.3
2007	40,031.6	1,460.2	14,643.0	5,954.3

Note: TA = trade account; CC = current account

Table C.39

Investments rate in % of GDP

	Brazil	Korea	Korea*		Brazil	Korea	Korea*
1947	14.9			**1978**	22.3	32.5	33.0
1948	12.7			**1979**	23.4	35.8	36.8
1949	13.0			**1980**	23.6	31.9	32.9
1950	12.8			**1981**	24.3	29.9	30.2
1951	15.4			**1982**	23.0	28.9	29.9
1952	14.8			**1983**	19.9	29.4	31.0
1953	15.1	14.7		**1984**	18.9	30.6	30.8
1954	15.8	11.4		**1985**	18.0	30.3	30.9
1955	13.5	11.7		**1986**	20.0	29.2	30.2
1956	14.5	8.0		**1987**	23.2	30.0	30.8
1957	15.0	14.0		**1988**	24.3	31.1	32.6
1958	17.0	11.8		**1989**	26.9	33.8	35.4
1959	18.0	10.4		**1990**	20.7	37.1	38.1
1960	15.7	10.0		**1991**	18.1	39.1	40.1
1961	13.1	12.0		**1992**	18.4	36.8	37.1
1962	15.5	11.8		**1993**	19.3	35.2	36.0
1963	17.0	17.0		**1994**	20.7	36.1	36.8
1964	15.0	13.2		**1995**	18.3	37.2	36.9
1965	14.7	14.1		**1996**	16.9	37.9	37.8
1966	15.9	20.4		**1997**	17.4	34.2	35.4
1967	16.2	20.9		**1998**	17.0	20.9	25.0
1968	18.7	24.9		**1999**	15.7		28.9
1969	19.1	27.9		**2000**	16.8		30.5
1970	18.8	24.3		**2001**	17.0		29.1
1971	19.9	24.8	26.3	**2002**	16.4		29.1
1972	20.3	20.9	21.5	**2003**	15.3		29.9
1973	20.4	25.2	25.5	**2004**	16.1		30.0
1974	21.8	31.8	32.1	**2005**	15.9		29.6
1975	23.3	28.6	28.6	**2006**	16.4		29.6
1976	22.4	26.5	26.7	**2007**	17.4		29.3
1977	21.3	28.3	29.7				

Note: * gross fixed capital formation plus inventory accumulation (from Kosis)

Table C.40

Price index of public utility prices (Brazil)

	Nominal	Real		Nominal	Real
	August 1994=100	1944=100		August 1994=100	1944=100
1944	0.00000000000006	100	**1973**	0.000000000064	138
1945	0.00000000000007	91	**1974**	0.000000000076	129
1946	0.00000000000007	80	**1975**	0.000000000104	136
1947	0.00000000000007	68	**1976**	0.000000000139	129
1948	0.00000000000007	67	**1977**	0.000000000187	120
1949	0.00000000000008	77	**1978**	0.000000000267	124
1950	0.00000000000009	71	**1979**	0.000000000413	126
1951	0.00000000000009	65	**1980**	0.000000000839	140
1952	0.00000000000010	63	**1981**	0.000000001819	147
1953	0.00000000000011	61	**1982**	0.000000003499	143
1954	0.00000000000013	59	**1983**	0.000000007313	123
1955	0.00000000000018	64	**1984**	0.000000020621	117
1956	0.00000000000023	68	**1985**	0.000000063293	110
1957	0.00000000000029	74	**1986**	0.000000133157	95
1958	0.00000000000035	79	**1987**	0.000000529230	114
1959	0.00000000000047	76	**1988**	0.000004583351	126
1960	0.00000000000062	78	**1989**	0.000054878464	109
1961	0.00000000000082	77	**1990**	0.001699768400	110
1962	0.00000000000116	73	**1991**	0.010410136667	126
1963	0.00000000000221	81	**1992**	0.118084620833	130
1964	0.00000000000470	90	**1993**	2.7308	136
1965	0.00000000000954	110	**1994**	67.068	122
1966	0.00000000001452	118	**1995**	110.722	111
1967	0.00000000001924	120	**1996**	157.177	132
1968	0.00000000002300	118	**1997**	190.981	149
1969	0.00000000002841	119	**1998**	223.734	165
1970	0.00000000003665	125	**1999**	244.802	171
1971	0.00000000004542	129	**2000**	278.101	180
1972	0.00000000005649	138			

Databases consulted

Food and Agriculture Organization of the United Nations, FAOSTAT

Groningen Growth and Development Centre, 60-Industry Database

Groningen Growth and Development Centre, 10-sector Database

Instituto Brasileiro de Geografia e Estatística, Sistema de Recuperação Automática

Instituto de Economia Agraria da Sao Paulo, Base de Datos

International Labour Organisation, Laborsta

International Monetary Fund, Commodity Price System database

International Monetary Fund, International Financial Statistics

Instituto de Pesquisa Econômica Aplicada, Ipeadata

Korean Statistical Information System (KOSIS)

Ministério do Trabalho e Emprego (Brazil) Relação Anual de Informações Sociais (RAIS)

Ministry of Labor (Korea), Occupational Wage survey and Economically Active Population survey.

OECD, Main Science and Technology Indicators

OECD, Main Economic Indicators

OECD, Family Database

UN Commodity Trade Statistics Database (UN Comtrade)

US Bureau of Economic Analysis, National Income and Product Accounts Tables

US Bureau of Labor Statistics, Foreign Labor Statistics

US Census Bureau

US Department of Agriculture (USDA)

World Bank, World Development Indicators

Bibliography list

Abreu, M. de Paiva (1990), 'Inflacao, Estagnacao e Ruptura: 1961-1964', in M. de Paiva Abreu, et al. (1990), *A Ordem do Progresso: Cem anos de Politica Economica Republicana (1889-1989)*. Rio de Janeiro: Campus.

Abreu, M. de Paiva (2008a), 'The Brazilian Economy, 1930–1980', in L. Bethell (ed.), *The Cambridge History of Latin America Volume IX, Brazil since 1930*, Cambridge: Cambridge University Press.

Abreu, M. de Paiva (2008b), 'The Brazilian Economy, 1980–1994', in L. Bethel (ed.) *The Cambridge History of Latin America Volume IX, Brazil since 1930*, Cambridge: Cambridge University Press.

Abreu, M. de Paiva (2008c), 'The Brazilian Economy, 1994–2004: An Interim Assessment', in L. Bethel (ed.), *The Cambridge History of Latin America Volume IX, Brazil since 1930,* Cambridge: Cambridge University Press.

Acemoglu, D. (2002), 'Technical Change, Inequality, and the Labor Market', *Journal of Economic Literature*, 40, pp. 7–72

ADEFA (2008), 'Datos Basicos de la Industria Automotriz', *Anuario*, Buenos Aires.

Allen B. (1987), 'Microelectronics, Employment and Labour in the United States Automobile Industry, in S. Watanabe (ed.), *Microelectronics, automation and employment in the automobile industry*, Chichester: Wiley.

Aizenman J. and R. Glick (2008), 'Sterilization, Monetary Policy, and Global Financial Integration', Working Paper No. 2008-15, Federal Reserve Bank of San Francisco.

Alcorta, L. (1999), 'Flexible Automation and Location of Production in Developing Countries', *European Journal of Development Research,* 11(1), pp. 147-175.

Alves, P. and A. Messa Silva (2008), 'Estimativa do Estoque de Capital das Empresas Industriais Brasileiras', Texto para Discussão No. 1325, Instituto de Pesquisa Econômica Aplicada.

Amadeo, E.J. and J.M. Camargo (1995), ''New Unionism' and the Relations Among Capital, Labour and the State in Brazil', in J.B. Schor and J.I. You (eds.), *Capital, the State and Labour, A Global Perspective,* Aldershot: Edward Elgar.

Amadeo, E.J., et al. (2000), 'Brazil: The Pressure Points in Labor Legislation', Working Paper No. 395, Escola de Pós-Graduação em Economia, Fundação Getulio Vargas.

Amann, E. (1999), 'Technological Self-reliance in Brazil: Achievements and Prospects –Some Evidence from the Non-serial Capital Goods Sector', *Journal of Development Studies,* 27(3), pp. 329-57.

Amann, E. and F. Nixson (1999), 'Globalisation and the Brazilian Steel Industry: 1988-97', *Journal of Development Studies,* 35(6), pp. 59-88.

Amann, E., et al. (2004), 'Ownership Structure in the Post-privatized Brazilian Steel Industry: Complexity, Instability and the Lingering Role of the State', Working Paper No. 75, Centre on Regulation and Competition.

Amann, E. and W. Baer (2000), 'The Illusion of Stability: The Brazilian Economy Under Cardoso', *World Development,* 28(10), pp. 1805-1819.

Amann, E. and W. Baer (2001), 'The Changing Nature of Technological Dependence: Brazil's Public Utilities before and after Privatisation', *The Quarterly Review of Economics and Finance*, 41, pp. 645–656.

Amann, E. and W. Baer (2002), 'Neoliberalism and its Consequences in Brazil', *Journal of Latin American Studies*, 34, 945–959.

Amarante de Andrade, M. and da Silva Cunha, L. (2003), 'O Setor Siderurgico', BNDES, mimeo.

Amsden, A. (1989), *Asia's Next Giant: South Korea and Late Industrialization*, New York: Oxford University Press.

Amsden, A. and Y. Euh (1990), 'Republic of Korea's Financial Reform: What are the Lessons?', Discussion Paper No. 30, United Nations Conference on Trade and Development.

ANFAVEA (2008), *Brazilian Automotive Industrial Yearbook*, ANFAVEA, São Paulo.

Anglade, C. (1985), 'The State and Capital Accumulation in Contemporary Brazil', in C. Anglade and C. Fortin (eds.), *The State and Capital Accumulation in Latin America Vol. 1*, London: Macmillan.

Aglietta, M. (1979), *A Theory of Capitalist Regulation*, London: New Left Review Editions.

Arbix, G. (1997), 'A Camara Banida', in G. Arbix and M. Zilbovicius (eds.), *De JK and FHC: A Reinvenção dos Carros*, São Paulo: Scritta.

Arbix, G. (2002), 'Políticas do Desperdício e Assimetria entre Público e Privado na Indústria Automobilística', *Revista Brasileira de Ciências Sociais*, 17(48), pp. 109-29.

Arestis, P. et al. (2007), 'Inflation Targeting in Brazil', In P. Arestis and A. Saad-Filho (eds.), *Political Economy of Brazil*, London: Palgrave Macmillan.

Ault, D. (1973), 'The Continued Deterioration of the Competitive Ability of the U.S. Steel Industry: The Development of Continuous Casting', *Western Economic Journal*, 11(1), pp. 89-97.

Autor, D. et al. (2001), 'The Skill Content of Recent Technological Change: An Empirical Exploration', Working Paper No. 8337, National Bureau of Economic Research.

Auty, R. (1991), 'Creating Competitive Advantage: South Korean Steel and Petrochemicals', *Tijdschrift voor Economische en Sociale Geografie*, 82(1), pp. 15-29.

Avelãs Nunes, A.J. (1990), *Industrialización y Desarrollo: La economía Política del Modelo Brasileño de Desarrollo*, México: F.C.E.

Bacha, E., et al. (1972), 'Encargos Trabalhistas e Absorção de Mão-de-obra: Uma Interpretação do Problema e seu Debate', *Relatorios de Pesquisa, Instituto de Planejamento Econômico e Social*, 12, IPEA/INPES, Rio de Janeiro.

Bacha, E. (1977), 'Issues and Evidence on Recent Brazilian Economic Growth', *World Development*, 5(1/2), pp. 47-67.

Bacha, E. (1978), Os Mitos de uma Decada; Ensaios de Economia Brasileira, Rio de Janeiro: Paz e Terra.

Bacha, E. (1986), *El Milagro y la Crisis: Economía Brasileña y Latinoamericana*, México: F.C.E.

Bacha, E., and Greenhill, R. (1992), Marcellino Martins & E. Johnston, 150 Anos De Café, Rio de Janeiro: Marcellino Martins & E. Johnston.

Bacha. E. and L. Taylor (1971), 'Foreign Exchange Shadow Prices: A Critical Review of Current Theories', *The Quarterly Journal of Economics*, 85(2), pp. 197-224.

Bae, K. (1987), *Automobile Workers in Korea*, Seoul: Seoul National University Press.

Baer, W. (1965), *Industrialization and Economic Development in Brazil*, Homewood: Irwin.

Baer, W. (1969), *The Development of the Brazilian Steel Industry*, Nashville Tennessee: Vanderbilt University Press.

Baer. W, (1973), 'The Brazilian Boom 1968-72: an Explanation and Interpretation.' *World Development*, 7(8), 1-15.

Baer, W., et al. (1973), 'The Changing Role of the State in the Brazilian Economy', *World Development*, 1(11), pp. 23-34.

Baer, W. (1995), *The Brazilian Economy: Growth and Development*. Westport: Praeger.

Baer, W. and D. Coes (2001), 'Privatization, Regulation and Income Distribution in Brazil', *The Quarterly Review of Economics and Finance*, 41, pp. 609–620.

Baer, W., et al. (2002), 'Economic Integration Without Policy Coordination: the Case of MERCOSUR', *Emerging Markets Review*, 3, pp. 269–291.

Baer, W. and I. Kerstenetzky (1972), 'The Brazilian Economy', in R. Roett (ed.), *Brazil in the Sixties*, Nashville: Vanderbilt University Press.

Baily, M. and E. Zitzewitz (1998), 'Extending the East Asian Miracle: Microeconomic Evidence from Korea', *Brookings Papers on Economic Activity, Microeconomics*, pp. 249-321.

Balassa, B. (1979), 'Incentive Policies in Brazil' *World Development*, 7, pp. 1023-1042.

Balassa, B. (1988), 'Lessons of East Asian Development: An Overview', *Economic Development and Cultural Change*, 36(3), pp. 273-90.

Balassa, B. (1990), *Policy Choices in the Newly Industrializing Countries*, Working Paper No. WPS 423, Washington D.C., The World Bank.

Balconi, M. (1999), 'Codification of Technological Knowledge, Firm Boundaries,and "Cognitive" Barriers to Entry', DYNACOM Research Project, Fourth Framework Programme, European Commission.

Balconi M. (2002), 'Tacitness, Codification of Technological Knowledge and the Organisation of Industry', *Research Policy*, 31, pp. 357-79.

Balconi M. et al. (2007), 'The "Codification Debate" Revisited: a Conceptual Framework to Analyze the Role of Tacit Knowledge in Economics', *Industrial and Corporate Change*, 16(5), pp. 1-27.

Ban, S.H., et al. (1980), *Rural Development*, Council on East Asian Studies, Harvard University, Cambridge, Mass.: Harvard University Press.

Banco Central do Brasil, *Relatorio*, various issues.

Bank of Korea, *Economic Statistics Yearbook*, various issues.

Bank of Korea (1982), *National income in Korea*, Seoul.

Barnett, D. and R. Crandall (1986), *Up From the Ashes: The Rise of the Steel Minimill in the United States*, Washington D.C.: The Brookings Institution.

Barnett. D and L. Schorsch (1983), *Steel: Upheaval in a Basic Industry* Cambridge: Ballinger.

Barnett, D. (1996), 'Factors Influencing the Steel Work Force, 1980 to 1995', OECD Science, Technology and Industry Working Papers, 1996/6, OECD Publishing.

Barros de Castro, A. and F. Souza, (1985), *Economia Brasileira em Marcha Forçada*. Rio de Janeiro: Paz e Terra.

Barros de Castro, A. (2008), 'From Semi-stagnation to Growth in a Sino-centric Market'. *Brazilian Journal of Political Economy*, 28(1), pp. 3- 27.

Batista, J. (1992), *Debt and Adjustment Policies in Brazil*, Boulder: Westview Press.

Batista Jr., P.N. (1990), 'Déficit e Financiamento do Setor Público Brasileiro: 1983-1988', *Revista de Economia Política*, 10(4), pp. 5-29.

Baumann, R. and Paiva Franco, A. (2002), 'Import Substitution in Brazil between 1995 and 2000', *CEPAL Review*, 89, pp. 179-92.

Bede, M. (1997), 'A Politica Automotive nos Anos 90', in G. Arbix and M. Zilbovicius (eds.), *De JK and FHC: A Reinvenção dos Carros*, São Paulo: Scritta.

Bello W. and S. Rosenfeld (1992), *Dragons in Distress*, London: Penguin Books.

Besserman Vianna, S. (1987), *A Politica Economica no Segundo Governo Vargas*, Rio de Janeiro: BNDES.

Bethell, L. (2008), 'Politics in Brazil under the Liberal Republic, 1945–1964', in L. Bethell (ed.) Cambridge History of Latin America, Cambridge University Press.

Bethell, L. and C. Castro (2008), 'Politics in Brazil under Military Rule, 1964–1985', in L. Bethell (ed.), *The Cambridge History of Latin America Volume IX, Brazil since 1930*, Cambridge: Cambridge University Press.

Bethell, L. and J. Nicolau (2008), 'Politics in Brazil, 1985–2002', in L. Bethell (ed.), *The Cambridge History of Latin America Volume IX, Brazil since 1930*, Cambridge: Cambridge University Press.

Bielschowsky, R. (1995), *Pensamento econômico Brasileiro: o ciclo ideológico do desenvolvimentismo*, Rio de Janeiro: Contraporto.

Bloomberg Businessweek (2005), 'South Korea: Auto Parts Mecca', available in http://www.businessweek.com/magazine/content/05_17/b3930028.htm.

BNDES (1987), *Siderurgia Brasileira: Questões e perspectives*, Departamento de Estudos, Rio de Janeiro.

BNDES (2011), 'Privatização - Introdução', available in http://www.bndes.gov.br/SiteBNDES/bndes/bndes_pt/Institucional/BNDES_Transparente/Privatizacao/index.html.

Bonelli, R. and A. Castelar Pinhero (2008), 'New Export Activities in Brazil: Comparative Advantage, Policy or Self-Discovery?', Working Paper No. R-55 I, Inter-American Development Bank, Latin American Research Network.

Bonelli R, and P.M. Veiga (2003), 'Dinâmica das Políticas Setoriais no Brasil na Década de 1990: Continuidade e Mudança', *Revista Brasileira de Comércio Exterior*, 17(75), pp. 1-24.

Bonelli, R., et al. (1992), 'Macroeconomic Instability and Trade Liberalization in Brazil: Lessons from the 1980s to the 1990s', Texto para Discussão No. 278, Departamento de Economia, PUC, Rio de Janeiro.

Bontempo, H. (1988), 'Transferências Externas e Financiamento do Governo Federal e Autoridades Monetárias', *Pesq. Plan. Econ.*, 18(1), pp. 101-130.

Boyer, R. (1995), 'Capital-labour relations in OECD countries: from the Fordist Golden Age to contrasted national trajectories', in J.B. Schor and J.I. You (eds.), *Capital, the State and Labour, A Global Perspective*, Aldershot: Edward Elgar.

Brandão, A.S.P. and J.L. Carvalho (1991), *Trade, Exchange Rate, and Agricultural Pricing Policies in Brazil*, Washington D.C.: The World Bank.

Bray, F. (1986), *The Rice Economies: Technology and Development in Asian Societies*, Oxford: Basil Blackwell.

Brazil (1971), *First National Development Plan, 1972/74*, Brasilia: IBGE.

Brazil (1974), *II National Development Plan (1975-1979)*, Brasilia: IBGE.

Brazil (1979), III *National Development Plan (1980-1985)*, Brasilia: IBGE.

Breidenstein, G. (1974), 'Capitalism in South Korea', in B. Frank (ed.), *Without Parallel; The American-Korea Relationship Since 1945*, New York: Pantheon Books.

Bresser Pereira, L. (1984), *Development and Crisis in Brazil, 1930-1983*, Boulder: Westview Press.

Bresser Pereira, L. (2003), 'O Segundo Consenso de Washington e a Quase-Estagnação da Economia Brasileira', *Revista de Economia Política*, 23(3), pp. 3-34.

Bresser Pereira, L. and Y. Nakano (1991), 'Hiperinflação e Estabilização no Brasil: o Primeiro Plano Collor', *Revista de Economia Politica*, 11(4), pp. 89-113.

Bronstein, A. (1978), 'Collective bargaining in Latin America: Problems and Trends', *International Labour Review*, 117(5), pp. 583-596.

Brown, G. (1973), *Korean Pricing Policies and Economic Development in the 1960s*, Baltimore: John Hopkins University Press.

Brown, C. and B. Campbell (2001), 'Technical Change, Wages, and Employment in Semiconductor Manufacturing', *Industrial and Labor Relations Review*, 54(2A), Extra Issue: Industry Studies of Wage Inequality, pp. 450-465.

Brown, C. and G. Linden (2005), 'Offshoring in the Semiconductor Industry: A Historical Perspective', in S. Collins and L. Brainard (eds.), *Brookings Trade Forum, Offshoring White-Collar Work*, Washington: The Brookings Institution.

Burnham, P. (1994), 'Open Marxism and Vulgar International Political Economy', *Review of International Political Economy*, 1(2), pp. 221-31

Campbell, A. (2005), 'The Birth of Neoliberalism in the United States: A Reorganisation of Capitalism', in A. Saad-Filho and D. Johnston (eds.), *Neoliberalism; A Critical Reader*, London: Pluto Press.

Cardoso, E. A. (1988), 'O processo Inflacionário no Brasil e Relações com o Déficit e a Dívida do Setor Público', *Revista de Economia Politica*, 8(2), pp. 5-20.

Cardoso, E. (1991), 'Deficit Finance and Monetary Dynamics in Brazil and Mexico', *Journal of Development Economics*, 37(1-2), pp. 173-197.

Cardoso E. and Dornbusch R. (1987), 'Brazil's Tropical Plan', *The American Economic Review*, 77(2), pp. 288-292.

Cardoso, F.H. and E. Faletto (1979), *Dependency and Development in Latin America*, Berkeley: University of California Press.

Cardoso, J.C. and L. Jaccoud (2009), 'Politicas Sociais no Brasil: Organizacao, Abrangencia e Tensoes da Acao Estatal', in L. Jaccoud (ed.), *Questão Social e Políticas Sociais no Brasil Contemporâneo*, IPEA, Rio de Janeiro.

Cardoso de Melo et al. (1994), 'ICMS e as Exportacoes', *Informações Econômicas*, 24(8), pp. 37-44.

Carneiro, R. (2000), 'Estado, Mercado e o Desenvolvimento do Setor Elétrico Brasileiro', PhD Thesis, Federal University of Minas Gerais.

Carneiro, R. (2002), *Desenvolvimento em Crise*, São Paulo: Editora UNESP.

Carvalho, P. de (2006), 'Uma Perspectiva para a Indústria de Semicondutores no Brasil: o Desenvolvimento das "Design Houses"', Master Thesis, Unicamp.

Castelar Pinheiro, A. (2002), 'The Brazilian Privatization Experience: What's Next?' Working Paper CBS-30-02, Centre for Brazilian Studies, University of Oxford.

Cavalcante and Uderman (2004), 'The Cost of Structural Change: A Large Automobile Plant in a Brazilian Less Developed Region', Working Paper REAL 04-T-5, Regional Economics Applications Laboratory, University of Illinois.

CEITEC SA (2011), http://www.ceitec-sa.com/.

CEPAL/BNDE (1956), *Análisis y Proyecciones del Desarrollo Económico: El desarrollo económico del Brasil*, Naciones Unidas, Departamento de Asuntos Económicos y Sociales, México.

Chacel J.M. (1967), 'O Setor Agricola, A Renda Nacional e a Taxa de Investimento', *Revista Brasileira de Economia*, 4, pp. 50-60.

Chang, D.O. and J.H. Chae (2004), 'The transformation of Korean Labour Relations since 1997', *Journal of Contemporary Asia*, 34(4), pp. 427-448.

Chang H.J. (1993), 'The Political Economy of Industrialisation in Korea', *Cambridge Journal of Economics*, 17(2), pp. 131-157.

Chang H.J, et al. (1998), 'Interpreting the Korean Crisis: Financial Liberalisation, Industrial Policy and Corporate Governance', *Cambridge Journal of Economics*, 22, pp. 735-746.

Chang, H.J. and C.G. Yoo (1999), 'The Triumph of the Rentiers? The 1997 Korean Crisis in a Historical Perspective', Working Paper No. 12, CEPA, New School.

Chen, Z. (1996), 'New Technology, Subsidies, and Competitive Advantage', *Southern Economic Journal*, 63(1), pp. 124-139.

Chibber V. (1999), 'Building a Development State: The Korea Case Reconsidered', *Politics & Society*, 27(3), pp. 309-346.

Cho, D.S. et al. (1998), 'Latecomer Strategies: Evidence from the Semiconductor Industry in Japan and Korea', *Organization Science*, 9(4), pp. 489-505

Cho, Y.J. (1988), 'Some Policy Lessons from the Opening of the Korean Insurance Market', *The World Bank Economic Review*, 2(2), pp. 239-254.

Cho, L.J and K. Breazeale (1991), 'The Educational System', L.J Cho and Y.H. Kim (eds.), *Economic Development in the Korea Republic; A Policy Perspective*, East-West Center, Honolulu.

Cho, Y.J. and J.Y. Kim (1995), 'Credit Policies and the Industrialization of Korea', World Bank Discussion Paper, No. 286, The World Bank, Washington, D.C.

Choi J. (1981), *Labor and the Authoritarian State*, Seoul: Korea University Press.

Choi, Y.K. and D.I. Kim (2004), 'Changes in the Labor Markets and Industrial Relations', in D.K Chung and B. Eichengreen (eds.), *The Korean Economy beyond the Crisis*, Cheltenham: Edward Elgar.

Chopra, A. et al. (2001), 'From Crisis to Recovery in Korea: Strategy, Achievements, and Lesson', IMF Working Paper, WP/01/154, Washington, D.C.

Chung, M.K. (1994), 'Transforming the Subcontracting System and Changes of Industrial Organization in the Korean Automobile Industry', Presented at Second International Colloquium 'The New Industrial Models of Automobile Firms', GERPISA, Paris, June 16-18.

Chung, M.K. (2005), 'Is it New Paradigm? Modular Production System in Hyundai', Presented at the Thirteenth International Colloquium on 'Productive Organisations - Employment Relationships – Financialisation: Specificities of the Automobile Industry', GERPISA, Paris, June 16-17.

Chung, U.C. (2004), 'The Korean Economy Before and After the Crisis', in D.K Chung and B. Eichengreen (eds.), *The Korean Economy Beyond the Crisis*, Cheltenham: Edward Elgar.

Chung, Y. (2007), *South Korea in the Fast Lane Economic Development and Capital Formation*, New York: Oxford University Press.

Clarke, S. (1988), *Keynesianism, Monetarism, and the Crisis of the State*, Cheltenham: Edward Elgar.

Clifford, M. (1998), *Troubled Tiger: Businessmen, Bureaucrats, and Generals in South Korea*, Armonk, N.Y: M.E. Sharpe.

Cohen, S. (1978), 'Industrial Performance in South Korea: A Descriptive Analysis of a Remarkable Success', *The Developing Economies*, 16(4), pp. 408-433.

Cole, D. and P. Lyman (1971), *Korean Development; the Interplay of Politics and Economics*, Cambridge, Mass., Harvard University Press.

Cockerill, A. (1974), *Economics of Scale & the Structure of the Steel Industry*, Cambridge: University of Cambridge.

Cole, D. and Y.C. Pak (1983), *Financial Development in Korea, 1945-1978*, Cambridge, Mass.: Harvard University Press.

Colistette, R. (2007), 'Productivity, Wages, and Labor Politics in Brazil, 1945–1962', *Journal of Economic History*, 62(1), pp. 93-127.

Collins, S. and W.A. Park (1989), 'External Debt and Macroeconomic Performance in South Korea', in J. Sachs and S. Collins (eds.), *Developing Country Debt and Economic Performance, Volume 3: Country Studies - Indonesia, Korea, Philippines, Turkey*, Chicago: University of Chicago Press.

Cooper, R. (1994), 'Fiscal Policy in Korea', in S. Haggard, et al. (eds.), *Macroeconomic Policy and Adjustment in Korea, 1970-1990*, Cambridge, Mass.: Harvard University Press.

Corbridge, S. (1986), *Capitalist World Development: A Critique of Radical Development Geography*, Basingstoke: Macmillan.

Coriat, B. (1982), *El Taller y el Cronometro*, Madrid: Siglo XXI.

Coriat, B. (1985), *La Robotica*, Madrid: Editorial Revolución.

Coriat, B. (1992), *El Taller y el Robot*, Madrid: Siglo XXI.

Correa de Lago, L.A (1990), 'A Retomada do Crescimento e as Distorções do "Milagre": 1967-1973', in Abreu, M. de Paiva, et al. (1990), *A Ordem do Progresso: Cem anos de Politica Economica Republicana (1889-1989)*. Rio de Janeiro: Campus.

Correa do Lago, L.A, et al. (1979), *A Indústria Brasileira de Bens de Capital*: *Origens, Situação Recente e Perspectivas,* Estudos Especiais IBRE No 1, Rio de Janeiro: FGV.

Correa do Lago, L.A., et al. (1983), *Estrutura Ocupacional, Educação e Formação de Mão* ção e *Formação de Mão*-de-*obra*: os *Países Desenvolvidos e o caso Brasileiro,* Estudos Especiais IBRE No 4, Rio de Janeiro: FGV.

Corsetti G., et al. (1998) 'What Caused the Asian Currency and Financial Crisis?, in www.ny.frb.org/research/economists/pesenti/whatjapwor.pdfCorsetti et al.

Coutinho, L. and L. Gonzaga de Mello Belluzo (1982), 'Politica Economica, Inflexoes e Crise: 1974/1981', In Gonzaga M. Belluzzo, L. and R. Coutinho (eds.), *Desenvolvimento Capitalista no Brasil*. São Paulo: Editora Brasiliens.

Crissiuma, M. (1986), 'Reestruturacao e Divisao Internacional do Trabalho na Industria Automobilistica: O Caso Brasileiro', Diss., Fundação Getulio Vargas, Escola de Administração de Empresas de São Paulo.

Cumings, B. (1989), 'The Abortive Abertura: South Korea in the Light of Latin American Experience', *New Left Review*, 73, 5-32.

Dalmhan, C. (1978), 'From Technological Dependence to Technological Development: The Case of the USIMINAS Steel Plant in Brazil', IDB/ECLA Research Programme in Science and Technology, Buenos Aires.

D'Costa, A. (1994), 'State, steel and strength: Structural competitiveness and development in South Korea', *Journal of Development Studies,* 31(1), pp. 44-81

D'Costa, A. (1999a), *The Global Restructuring of the Steel Industry: Innovations, Institutions and Industrial Change*, New York: Routledge.

D'Costa, A. (1999b), 'Overcoming Structural Barriers Steel Industries in Brazil, India and Korea', *Economic and Political Weekly*, February, pp. 2-16.

Deyo, F. (1989), *Beneath the Miracle: Labor Subordination in the New Asian Industrialisation*, Berkeley: University of California Press.

Dias Carneiro, D. (1987)'Long-run Adjustment, Debt Crisis and the Changing Role of Stabilisation Policies in the Recent Brazilian Experience', in R. Thorp and L. Whitehead (eds.), *Latin American Debt and the Adjustment Crisis*, London: Macmillan Press.

Dias Carneiro, D. (1990), 'Crise e Esperança: 1974-1980', in Abreu, M. de Paiva, et. al. (1990), *A Ordem do Progresso: Cem anos de Politica Economica Republicana (1889-1989)*. Rio de Janeiro: Campus.

Dias Carneiro, D. and E. Modiano (1990), 'Ajuste Externo e Desequilibrio Interno: 1980-1984', in Abreu, M. de Paiva, et. al. (1990), *A Ordem do Progresso: Cem anos de Politica Economica Republicana (1889-1989)*. Rio de Janeiro: Campus.

Dias Carneiro, D., et al. (2001), 'The Structure of Public Sector Debt in Brazil', Research Network Working Paper R-424, Inter-American Development Bank, Washington D.C.

DIEESE (1997), Estudos e Pesquisas No. 1, in http://www.dieese.org.br/bol/esp/es1mai97.xml.

Doh, J. (2003), 'The Bombardier-Embraer Dispute and its Implications for Western Hemisphere Integration', Policy Papers on the Americas, Vol. XIV, Study 12, Center for Strategic and International Studies, Washington D.C.

Doner, R. et al. (2006), 'Industrial Competitiveness of the Auto Parts Industries in Four Large Asian Countries: The Role of Government Policy in a Challenging International Environment', World Bank Policy Research Working Paper No. 4106, The World Bank, Washington D.C.

Dornbusch, R. and Y.C. Park (1987), 'Korea Growth Policy', *Brookings Papers on Economic Activity*, 2, pp. 389-454.

Economic Planning Board (1962), *Summary of the First Five-year Economic Plan, 1962-1966*, Seoul, EPB.

Economic Planning Board (1966), *A summary of the Second Five-year Economic Development Plan 1967-1971*, Seoul, EPB.

Economic Planning Board (1971), *The Third Five-year Economic Development Plan, 1972-76*, Seoul, EPB.

Edwards, S. (2010), *Left Behind*, Chicago: University of Chicago Press.

Eletrobras (1987), 'Comparação Internacional de Tarifas de Energia Elétrica 1973/1987', DETA, Outubro 1987, Rio de Janeiro.

Ellis, H. (1969), 'Corrective Inflation 1964-66', in H. Ellis (ed.), *The Economy of Brazil*, Berkeley: University of California Press.

Erickson, E. (1979), *The Brazilian Corporative State and Working-class Politics*, Berkeley: University of California Press.

Ernst, D. (1998), 'Catching-Up, Crisis and Industrial Upgrading. Evolutionary Aspects of Technological Learning in Korea's Electronics Industry, Working Paper No. 98-16, Danish Research Unit for Industrial Dynamics.

Ernst D. (2005), 'Complexity and Internationalisation of Innovation – Why is Chip Design Moving to Asia?', *Innovation Managements*, 9(1), pp. 47-73.

European Robotics Forum (2008), *A White paper on the Status and Opportunities of the European Robotics Industry*, European Robotics Research Network (EURON).

Evans, P. (1979), *Dependent Development: The Alliance of Multinational, State and Local Capital in Brazil*, Princeton, N.J: Princeton University Press.

Evans, P. (1995), *Embedded Autonomy: States and Industrial Transformation*, Princeton, N.J: Princeton University Press.

Fajnzylber, F. (1971), *Sistema Industrial e Exportacção de Manufaturados: Analise da Experiencia Brasileira*, Relatorios de Pesquisa, Instituto de Planejamento Economico e Social, No.7, Rio de Janeiro.

Fausto, B. (1999), *A Concise History of Brazil*. Cambridge: Cambridge University Press.

Feldstein, M. (1998), 'Refocusing the IMF', *Foreign Affairs*, 77(2).

Fei, J.C. and G. Ranis (1975), 'A Model of Growth and Employment in the Open Dualistic Economy: The Cases of Korea and Taiwan', *Journal of Development Studies*, 1(2), pp. 32-74.

Ferraz, J.C. (1986), 'Determinants and Consequences of Rapid Growth in the Brazilian Shipbuilding Industry', *Maritime Policy & Management*, 13(4), pp. 291-306.

Fields, G. (1982), *The Labor Market and Export-led Growth in Korea, Taiwan, Hong Kong and Singapore*, Seoul: Korea Development Institute.

Figuereido, P. et al. (2008), 'Risk Sharing Partnerships with Suppliers: The Case of Embraer', *Journal of Technology Management & Innovation*, 3(1), pp. 27-37.

Fine, B. and Z. Rustomjee (1996), *The Political Economy of South Africa, From Minerals-Energy Complex to Industrialisation*, Boulder: Westview Press.

Fisher, B., et al. (1988): *Capital-Intensive Industries in Newly Industrializing Countries: The Case of the Brazilian Automobile and Steel Industries*, Tubingen: Mohr.

Fishlow, A. (1971), 'Origins and Consequences of Import Substitution in Brazil,' in L.

Di Marco (ed.), *International Economics and Development*, New York: Academic Press.

Fishlow, A. (1973), 'Some Reflections on Post-1964 Brazilian Economic Policy', in A. Stepan (ed.), *Authoritarian Brazil*, New Haven; London: Yale University Press.

Flamm, K. (1985), 'Internationalization in the Semiconductor Industry', in J. Grunwald and K. Flamm (eds.) *The Global Factory, Foreign Assembly in International Trade*, Washington D.C.: The Brookings Institution.

Florida, R. and M. Kenney (1992), 'Restructuring in Place: Japanese Investment, Production Organization, and the Geography of Steel', *Economic Geography*, 68(2), Industrial Geography, pp. 146-173.

Fonseca, R. and T.C. Mendes (2002), 'Produtividade do Capital na Indústria Brasileira', Texto para Discussão No. 2, Confederação Nacional da Indústria, Brasilia.

Franco, G. (2000), 'The Real Plan and the Exchange Rate', Essays in International Finance, No. 217, Princeton University, New Jersey

Frank, C., et al. (1975), *Foreign Trade Regimes and Economic Development: Korea*, New York: NBER/Columbia University Press.

Frieden, J. (1987), 'The Brazilian Borrowing Experience: From Miracle to Debacle and Back', *Latin American Research Review*, 22(1), 95-131.

Freedman, A. (1982), 'A Fundamental Change in Wage Bargaining', *Challenge*, July/August, pp. 14-17.

Fröbel, F., et al. (1980), *The New International Division of Labour: Structural Unemployment in Industrialised Countries and Industrialisation in Developing Countries*, Cambridge: Cambridge University Press.

Fundação Getulio Vargas, *Conjuntura Econômica*, IBRE, various issues.

Furtado, C. (1973), 'The Post-1964 Brazilian 'Model' of Development', *Studies in Comparative International Development*, 8(2), pp. 115-128.

Fuss, M.A. and L. Waverman (1992), *Costs and Productivity in Automobile Production: the Challenge of Japanese Efficiency,* Cambridge: Cambridge University Press.

Geddes, B. (1990), 'Building "State" Autonomy in Brazil, 1930-1964', *Comparative Politics*, 22(2), pp. 217-235.

Gereffi, G. (1989), 'Rethinking Development Theory: Insights from East Asia and Latin America', *Sociological Forum*, 4(4), pp. 505-33.

Gereffi, G. (1995), 'Global Production Systems and the Third World', in Barbara Stallings (ed.), *Global Change, Regional Response*, Cambridge: Cambridge University Press.

Gereffi, G. (1998), 'More than the Market, More than the State: Global Commodity Chains and Industrial Upgrading in East Asia', in Chan, S., et al. (eds.), *Beyond the Developmental State*, London: Macmillan.

Ghilardi, A. (2005), 'Custo Operacional Basico e Receita Liquida de Laranja para Industria na Regiao Norte do Estado de São Paulo, Safra Agricola 2003/4', *Informações Econômicas*, 35(3).

Ghiringhelli de Azevedo, R. (2006), 'Crime and Criminal Justice in Latin America', *Sociologias*, 2, pp. 1-15.

Gills, B. (1996), 'Economic Liberalisation and Reform in South Korea in the 1990s: A 'Coming of Age' or a Case of 'Graduation Blues'?', *Third World Quarterly*, 17(4), pp. 667-688.

Goldstein, A. (2002), 'EMBRAER: de Campeón Nacional a Jugador Global', *Revista de la CEPAL*, 77, pp. 101-121.

Golladay, F. and T. King (1979), 'Social Development', in P. Hasan and D.C. Rao (eds.), *Korea: Policy Issues for Long-Term Development*, World Bank Country Economic Report, Baltimore: John Hopkins University Press.

Gonzaga, G., et al. (2003), 'Labor Turnover and Labor Legislation in Brazil', *Economía*, 4(1), pp. 165-222.

Gordon Nembhard, J. (1996), *Capital Control, Financial Regulation, and Industrial Policy in South Korea and Brazil*, Westport: Praeger.

Graham, E. (2003), *Reforming Korea's Industrial Conglomerates*, Washington, DC: Institute for International Economics.

Graham D., et al. (1987), 'Thirty Years of Agricultural Growth in Brazil: Crop Performance, Regional Profile, and Recent Policy Review', *Economic Development and Cultural Change*, 36 (1), 1-34.

Green A. (1992), 'South Korea's Automobile Industry: Development and Prospects', *Asian Survey*, 32(5), pp. 411-428.

Grieves, D. and G.D. Saul (1986), *POSCO, December 1985*, [s.l.]: [s.n.].

Grinberg, N. (2008), 'From the 'Economic Miracle' to the 'Lost Decade': on the Role of Intersectoral tTansfers and External Credit in the Process of Capital Accumulation in Brazil.' *Brazilian Journal of Political Economy* 28, pp. 291-311.

Grinberg, N. (2010), 'Where is Latin America Going? 'FTAA or '21st Century Socialism'?', *Latin American Perspectives*, 37(1), 185-202.

Grinberg, N. and G. Startosta (2009), 'The Limits of Studies in Comparative Development of East Asia and Latin America: the Case of Land Reform and Agrarian Policies', *Third World Quarterly*, 30(4), pp. 761-777.

Gudin, E. (1969), 'The Chief Characteristics of the Post-war Economic Development of Brazil', In H. Ellis (ed.), *The Economy of Brazil*, Berkeley: University of California Press.

Haggard, S. (1994a), 'Macroeconomic Policy Through the First Oil Shock, 1970-1975', in S. Haggard, et al. (eds.), *Macroeconomic Policy and Adjustment in Korea, 1970-1990*, Cambridge, Mass.: Harvard University Press.

Haggard, S. (1994b), 'From the Heavy Industry Plan to Stabilization: Macroeconomic Policy, 1976-1980', in S. Haggard, et al. (eds.), *Macroeconomic Policy and Adjustment in Korea, 1970-1990*, Cambridge, Mass.: Harvard University Press.

Haggard, S. and S. Collins (1994), 'The Political Economy of Adjustment in the 1980s', in S. Haggard, et al. (eds.), *Macroeconomic Policy and Adjustment in Korea, 1970-1990*, Cambridge, Mass.: Harvard University Press.

Haggard, S. and J. Mo (2000), 'The Political Economy of the Korean Financial Crisis', *Review of International Political Economy*, 7(2), pp. 197-218.

Haggard, S. and C.I. Moon (1990), 'Institutions and Economic Policy: Theory and a Korean Case Study', *World Politics*, 42(2), pp. 210-237.

Haggard, S. et al. (1991), 'The Transition to Export-led Growth in South Korea: 1954-1966', *The Journal of Asian Studies*, 50(4), pp. 850-873.

Hahm, J.H. (2003), 'The Government, the *Chaebol* and Financial Institutions before the Economic Crisis', in S. Haggard, et al. (eds.), Economic Crisis and Corporate Restructuring in Korea; Reforming the *Chaebol*, Cambridge: Cambridge University Press.

Hahm, J.H. and F. Mishkin (2000), 'Causes of the Korean Financial Crisis: Lessons for Policy', Working Paper No. 7483, NBER.

Hall, A. (1987), 'Agrarian Crisis in Brazilian Amazonia: The Grande *Carajás* Programme', *The Journal of Developing Studies*, 23(4), pp. 522-552.

Hall, A. (2006), 'From Fome Zero to Bolsa Família: Social Policies and Poverty Alleviation under Lula', *Journal of Latin American studies*, 38(4), pp. 689-709.

Hamilton, C. (1986), *Capitalist Industrialization in Korea*, Boulder: Westview Press.

Han, S.J. (1974), 'The Political Economy of Dependency', *Asian Survey*, 14(1), pp. 43-51.

Hart-Landsberg, M. (1993), *The Rush to Development: Economic Change and Political Struggle in South Korea*, New York: Monthly Review Press.

Hasegawa, H. (1996), *The Steel industry in Japan: a Comparison with Britain*, Sheffield Centre for Japanese Studies/Routledge series.

Helfand, S.M. (1994), 'The Political Economy of Agricultural Policy in Brazil: Interest Groups and the Patter of Protection', PhD thesis, University of California at Berkley.

Helfand, S.M. (2000), 'Interests Groups and Economic Policy: Explaining the Pattern of Protection in the Brazilian Agricultural Sector', *Contemporary Economic Policy*, 18(4), pp. 462-476.

Henderson, J. (1989), *The Globalisation of High Technology Production*, London: Routledge.

Hkust, L. (2005), 'China's Automotive Industry', mimeo.

Hoff, K. and J. Stiglitz (2001), 'Modern Economic Theory and Development', in G. Meier (2001), *Frontiers in Development Economics: the Future in Perspective*, Oxford: Oxford University Press.

Hogan, W. (2002), *The POSCO Strategy: A Blueprint for World Steel's Future*, Maryland: Lexington Books.

Homen de Melo, F. (1999), 'O Plano Real e a Agricultura Brasileira: Perspectivas', *Revista Brasileira de Economia Politica*, 19(4), 146-155.

Hong, S.G. (1997), *The Political Economy of Industrial Policy in East Asia: The Semiconductor Industry in Taiwan and South Korea*, Cheltenham: Edward Elgar.

Hong, W. (1979), *Trade, Distortions and Employment growth in Korea*, Soul: Korea Development Institute.

Hounshell, D. (1991), *From the American System to Mass Production, 1800-1932*, Baltimore: The John Hopkins University Press.

Hounshell, D. (2000), 'Automation, Transfer Machinery, and Mass Production in the U.S. Automobile Industry in the Post–World War II Era', *Enterprise & Society*, 1, pp. 100–38.

Hudson, R. and D. Sadler (1989), *The International Steel Industry: Restructuring, State Policies and Localities*, London: Routledge.

Hufbauer, G.C. and J.J. Schott (2005), *NAFTA Revisited: Achievements and Challenges*, Washington D.C.: Institute for International Economics.

Huh, K.C. (2007a), *Understanding Korea Education, Vol. 1 School Curriculum in Korea*, Seoul: Korean Educational Development Institute.

Huh, K.C. (2007b), *Understanding Korea Education, Vol. 5 Education and Korea's Development*, Seoul: Korean Educational Development Institute.

Hunter, W. and N. Borges Sugiyana (2009), 'Democracy and Social Policy in Brazil: Advancing Basic Needs, Preserving Privileged Interests', *Latin American Politics and Society*, 51(2), pp. 29-58.

Husan, R. (1997), 'The continuing Importance of Economies of Scale in the Automotive Industry', *European Business Review*, 97(1), pp. 38-42.

Hwang, S.K. (2006), 'Wage Structure and Skill Development in Korea and Japan', Korea Labor Institute, mimeo.

IEDI (2007), 'Desindustrialização e os Dilemas do Crescimento Econômico Recente', Instituto de Estudos Para o Desenvolvimento Industrial.

International Labour Organisation (1963), 'Technological Developments and their Influence on the Structure of Remuneration, Organisation of Work and Safety in iron and steel plants', Iron and Steel Committee, Seventh Session, Geneva.

International Labour Organisation (1992), 'Recent Developments in the Iron and Steel Industry', Iron and Steel Committee, Twelfth Session, Report I, Geneva.

International Iron and Steel Institute, *Steel Statistical Yearbook*, various issues.

Instituto Brasileiro de Geografia e Estatística, Anuário Estatístico do Brasil, various issues.

Instituto Brasileiro de Siderurgia, *Statistical Yearbook*, various issues.

Instituto Brasileiro de Geografia e Estatística, *Censo Industrial*, various issues.

Instituto Brasileiro de Geografia e Estatística, *Censo Agrario*, various issues.

Instituto da Economia Agraria (2006), *Informação estatística agricola*, 17(1), p. 1-16.

Instituto do Café (1976), *Bolletim Estatístico*, various issues.

Instituto Nacional de Estadística y Geografía (2010), El sector Automotriz en México 2010; Serie Estadísticas Sectoriales, INEGI.

Iñigo Carrera, J. (1996), 'A Model to Measure the Profitability of Specific Industrial Capitals by Computing their Turnover Circuits', Working paper, CICP, Buenos Aires.

Iñigo Carrera, J. (2006), 'Argentina: the Reproduction of Capital Accumulation through Political Crisis', *Historical Materialism*, 14(1), pp. 185-219.

Iñigo Carrera, J. (2007), *La Formación Económica de la Sociedad Argentina, Volumen I, Renta Agraria, Ganancia Industrial y Deuda Externa 1882-2004*, Buenos Aires: Imago Mundi.

Iñigo Carrera, J. (2008), *El Capital: Razón Histórica, Sujeto Revolucionario y Conciencia*, Buenos Aires: Ediciones Cooperativas.

Japan Automobile Manufacturers Association (2008), *Motor Vehicle Statistics of Japan*, Tokio.

Jenkins, R. (1987), *Transnational Corporations and Uneven Development: the Internationalization of Capital and the Third World*, London: Methuen.

Jenkins, R. (1984), 'Divisions over the International Division of Labour', *Capital and Class*, 22 (Spring), pp. 28-57.

Jeon, Y.D. and Y.Y. Kim (2000), 'Land Reform, Income Redistribution, and Agricultural Production in Korea', *Economic Development and Cultural Change*, 48(2), pp. 253-268.

Jha, V., et al. (2006), *Dealing with Trade Distortions in Steel Industry*, New Delhi: Mcmillan.

Jones, L. and I. Sakong (1980), Government, Business, and Entrepreneurship in Economic Development: The Korean Case, Cambridge: Harvard University Press.

Jonsson, G. (1995), *Shipbuilding in South Korea; A Comparative Study*, Stockholm: Institute of Oriental Languages, Stockholm University.

Joo D. (2005), 'The Current State of the Korean Electronics Industry and Options for Cooperation with Taiwan', *KIET Industrial Economic Review*, 10(6), pp. 14-26.

Jun, J. (2004), 'The Fiscal Policy Response to the Crisis', in D.K Chung and B. Eichengreen (eds.), *The Korean Economy Beyond the Crisis*, Cheltenham: Edward Elgar.

Kafka, A., (1956), 'The Brazilian Exchange Auction System', *The Review of Economics and Statistics*, 38(3), pp. 308-322.

Kaminsky, G. (2005), 'International Capital Flows, Financial Stability and Growth', DESA Working Paper No., 10., UN.

Kang D. (2002), 'Bad Loans to Good Friends: Money Politics and the Developmental State in South Korea', *International Organisation*, 56(1), pp. 177-207.

Kaplinsky, R. (1989), '"Technological Revolution" and the International Division of Labour in Manufacturing: A Place for the Third World?, *European Journal of Development Research*, 1(1).

Kaplinsky, R. and K. Hoffman (1989), *Driving Force: the Global Restructuring of technology, labour, and Investment in the Automobile and Components Industries*, Boulder: Westview Press.

Kauffman, B. (1982), *Trade and Aid: Eisenhower's Foreign Economic Policy, 1953-1961*, Baltimore; London: Johns Hopkins University Press.

Kaufman, R. and B. Stallings (1989), 'The Political Economy of Latin American Populism', in R. Dornbusch and S. Edwards (eds.), *The Macroeconomics of Populism in Latin America*, NBER.

Kasahara, S. (2004), 'The Flying Geese Paradigm: A Critical Study of its Application to East Asian Regional Development', UNCTAD Discussions Papers No. 169, United Nations Commission for Trade and Development.

Kay, C. (2002), 'Why East Asia overtook Latin America: agrarian reform, industrialisation and development', *Third World Quarterly*, 23(6), pp. 1073-1102.

Keller, W. and L. Pauly (2001), 'Crisis and Adaptation in East Asian Innovation Systems: Semiconductors in Taiwan and South Korea ', Working Paper 01.05, MIT Japan Program, Massachusetts Institute of Technology.

Kim, J. (1975), *Divided Korea: the Politics of Development, 1945-1972*, Cambridge, Mass.: Harvard University Press.

Kim, S. (1988), 'The Korean Construction Industry as an Exporter of Services', *The World Bank Economic Review*, 2(2), pp. 225-238.

Kim. S. (2000), *The Politics of Democratization in Korea: the Role of Civil Society*, Pittsburgh: University of Pittsburgh Press.

Kim, B.K. (2003), 'The Politics of Chaebol Reform, 1980-1997', in S. Haggard, et al. (eds.), *Economic Crisis and Corporate Restructuring in Korea; Reforming the Chaebol*, Cambridge: Cambridge University Press.

Kim, H-K and S-H Lee, S-H (1994), 'Commodity Chains and the Korean Automobile Industry', in G. Gereffi and M. Korzeniewicz (eds), *Commodity Chains and Global Capitalism*, New York: Praeger.

Kohli, A. (2004), *State-directed Development: Political Power and Industrialization in the Global Periphery*, Cambridge: Cambridge University Press.

Koo, H. (2001), *Korean Workers*, Ithaca, NY: Cornell University Press.

Korea Automobile Manufacturers Association (2007), *Korean Automobile Industry 2007*, Seoul.

Krueger, A. (1979), *The Developmental Role of the Foreign Sector and Aid*, Cambridge: Council on East Asian Studies, Harvard University.

Krueger, A. (1990), 'Asian Trade and Growth Lessons', *The American Economic Review*, 80(2), 108-111.

Krugman, P. and M. Obstfeld (2006), *International Economics: Theory and Policy*, Boston: Pearson/Addison Wesley.

Kume, H. and G. Piani (1997), 'O ICMS Sobre as Exportações Brasileiras: uma Estimativa da Perda Fiscal e do Impacto Sobre as Vendas Externas', Texto para Discussão No. 465, IPEA, Rio de Janeiro.

Kuznets, P. (1994), *Korean Economic Development: an Interpretive Model*, Westport: Praeger.

Kwack, T. (1984), 'Industrial Restructuring Experience and Policies in Korea in the 1970s', Working Paper No. 84-80, Korea Development Institute, Seoul.

Kwon, H.J. (1999), 'Inadequate Policy or Operational Failure? The Potential Crisis of the Korean National Pension Programme', *Social Policy & Administration*, 33(1), pp. 20-38.

Langoni, C. (1974), *As Causas do Crescimento Economico do Brasil*, Rio de Janeiro: APEC Editora.

Lansbury, R., et al. (2007), *The Korean Motor Industry: The Hyundai Motor Company's Global Strategy*, London: Routledge.

Laplane, M. and F. Sarti (2008), 'The Case of Brazil', in A. Lopez, et al. (eds.), *The Automobile Industry in Mercosur*, Mercosur Network Series No 10.

Lara Resende, A. (1990), 'Estabilizacao e reforma: 1964-1967', in Abreu, M. de Paiva, et. al. (1990), *A Ordem do Progresso: Cem anos de Politica Economica Republicana (1889-1989)*. Rio de Janeiro: Campus.

Lanzarini Casa, C. (2009), 'Dívida Interna (1994-2004): Preferência pela Liquidez e Estabilização Via Poupança Externa', *Revista Soc. Bras. Economia Política*, 25, pp. 74-103.

Lautier, M. (2001), 'The International Development of the Korean Automobile Industry', in F. Sachwald (ed.), *Going Multinational; The Korean Experience of Direct Investment*, London: Routledge.

Leachman, R. and C. Leachman (2004), Globalization of Semiconductors: Do Real Men Have Fabs, or Virtual Fabs?, in M. Kenney and R. Florida (eds.), *Locating Global Advantage, Industry Dynamics in the International Economy*, California: Stanford University Press.

Lee, E. (1979), 'Egalitarian Peasant Farming and Rural Development: The Case of South Korea', *World Development*, 7, pp. 493-511.

Lee, S.C. (1991), 'The Heavy and Chemical Industries Promotion Plan (1973-79)', in L.J Cho and Y.H. Kim (eds.), *Economic Development in the Republic of Korea; A Policy Perspectives*, Honolulu: University of Hawaii Press.

Lee J.W. and D. Lindauer (1997), 'Relative Deprivation and the Distribution of Wages', in D. Lindauer et al. (eds.), *The strains of economic growth: labor unrest and social dissatisfaction in Korea*, Cambridge, Mass.: Harvard University Press.

Lee, K.R. (2001). 'Technological Catching-Up through Overseas Direct Investment: Samsumg's Camera Business', in F. Sachwald (ed.), *Going Multinational; The Korean Experience of Direct Investment*, London: Routledge.

Lee, B.Y. (2003), 'Globalization and Industrial Relations in Korea', *Korea Journal*, Spring, pp. 261-288.

Lee, B.Y. and S. Frenkel (2004), 'Divided Workers: Social Relations etween Contract and Regular Workers in a Korean Auto Company', *Work, employment and society*, 18(3), pp. 507-530.

Lee, S.J. (2008), *Understanding Korean Educational Policy Vol. 1, National Development Strategy and Education* Policy, National Development Strategy and Education Policy, Seoul: Korean Educational Development Institute.

Lesbaupin, I. and A. Mineiro (2002), *O Desmonte da Nação em Dados*, São Paulo: Vozes.

Lessa C. (1988), *A Estrategia de Desenvolvimento 1974-1976. Sonho e Fracasso*. Brasilia: Fundação Centro de Formação do Servidor Público.

Lewis, W.A. (1954), 'Economic Development with Unlimited Supplies of Labour', *The Manchester School*, 22(2), pp. 139-191.

Lewis, C. and P. Lloyd-Sherlock (2009), 'Social Policy and Economic Development in South America: an Historical Approach to Social Insurance', *Economy and Society*, 38(1), pp. 109-131.

Lew, S.J. (1992), 'Bringing Capital Back In: A Case Study of the South Korean Automobile Industrialization', Ph.D. Thesis, Yale University.

Lim, H.C. and J. Han (2004), 'Social Realignment, Coalition Change and Political Transformation', in D.K Chung and B. Eichengreen (eds.), *The Korean Economy Beyond the Crisis*, Cheltenham: Edward Elgar.

Linden, G. et al. (2004), 'The Net World Order's Influence on Global Leadership in the Semiconductor Industry', in M. Kenney and R. Florida (eds.), *Locating Global Advantage, Industry Dynamics in the International Economy*, California: Stanford University Press.

Lopes, F. (2003), 'Notes on the Brazilian Crisis of 1997-99'. *Brazilian Journal of Political Economy*, 23(3), pp. 35-62.

Lourdal, C. de, et al. (2006), 'Technological development of Brazilian telecommunications in past decades', *Telematics and Informatics*, 23, pp. 294–315

Luedde-Neurath, R. (1985), *Import Controls and Export-oriented Development: a Reassessment of the South Korean Case*, Boulder: Westview Press.

Lucke, M. (1987), 'Scale Efficiency in the Brazilian Motor Vehicle Industry: An International Comparison', Kiel Working Paper No. 298, Kiel Institute of World Economics.

Maddison, A. (1992), *The Political Economy of Poverty, Equity, and Growth*; *Brazil and Mexico*, Oxford: Oxford University Press.

MacDuffie, J.P. and F.K. Pil (1996), 'From Fixed to Flexible: Automation and Work Organization Trends from the International Assembly Plant Survey', in U. Jurgens and T. Fujimoto (eds.), *Transforming Auto Assembly: International Experiences with Automation and Work Organization*, New York: Springer-Verlag.

Maddala, G. and P. Knight (1967), 'International Diffusion of Technical Change-A Case Study of the Oxygen Steel Making Process', *The Economic Journal*, 77(307), pp. 531-558.

Malan, P. and J. Bergsman (1970), 'The Structure of Industry Protection in Brazil', *Revista Brasileira de Economia*, 24(2), 145-189.

Malan P. and R. Bonelli (1977), 'The Brazilian Economy in the Seventies: Old and New Developments', *World Development*, 5 (1/2), pp. 19-45.

Malan, P. and R. Bonelli (1983), 'Crescimento Econômico, Industrialização e Balanço de Pagamentos: O Brasil dos Anos 70 aos Anos 80', Textos Para Discussão Interna, IPEA/INPES, Rio de Janeiro.

Malloy, J. (1979), *The Politics of Social Security in Brazil*, Pittsburgh: University of Pittsburgh Press.

Mardon, R. (1990), 'The State and the Effective Control of Foreign Capital: The Case of South Korea', *World Politics*, 43(1), pp. 111-138.

Margolis, M. (1979), 'Green Gold and Ice: The Impact of Frosts on the Coffee Growing Region of Northern Parana, Brazil', *Mass Energies*, 4, pp. 135-144.

Marqués, R. (1990), 'O impacto da Automação Microeletrônica na Organização do Trabalho em duas Montadoras Brasileiras', *Revista de Economia Politica*, 10(3), pp. 62-79.

Marshall, A. (2004), 'Labour Market Policies and Regulations in Argentina, Brazil and Mexico: Programmes and Impacts', Employment Strategy Papers No. 13, International Labour Office.

Marx, K. (1972), *Capital Vol. I*, New York: International Publishers.

Marx, K. (1990), *Capital Vol. I*, London: Penguin Books.

Marx, K. (1992), *Capital Volume II*, London: Penguin Books.

Marx, K. (1981), *Capital Vol. III*, Harmondsworth: Penguin Books.

Marx, K. (1973), *Grundrisse: Foundations of the Critique of Political Economy*, Harmondsworth: Penguin Books.

Mason, E.S. et al., (1989), *The Economic Modernisation of the Republic of Korea*, Cambridge, Mass.: Harvard University Press.

Mathews J. and D. Cho (2000), *Tiger Technology*, Cambridge: Cambridge University Press.

McKinsey (1998), 'Productivity – The Key to an Accelerated Development Path for Brazil', McKinsey Brazil Office, São Paulo.

McGinn, N.F., et al. (1980), *Education and Development in Korea*, Cambridge, Mass.: Harvard University Press.

Medeiros Santos, A. and P. Burity (s/d), 'O Complexo Automotivo', BNDES, mimeo.

Medeiros Santos, A. and J. Gonçalves (2001), 'Evolucao do Comercio Exterior do Complexo Automotivo', *BNDES Setorial*, 13, p. 205-218.

Medeiros Santos, A. and C. Avila Pinhao (s/d), Investments in the Automotive Industry: BNDES Actions, BNDES, mimeo.

Mendes de Almeida, A. and M. Lowy (1976), 'Union Structure and Labor Organization in the Recent History of Brazil', *Latin American Perspectives*, 3(1), pp. 98-119.

Mendes de Paula, G. (1993), *Estudo da Competitividades da Industria Brasileira*, Fundação Economia de Campinas.

Mendonça de Barros, A.L. (1999), 'Capital, Produtividade e Crescimento da Agricultura: O Brasil de 1970 a 1995', PhD thesis, ESALQ, University of São Paulo.

Mesquita Moreira, M. (1994), *Industrialisation, Trade and Market Failures: Role of Government Intervention in Brazil and Korea*, London: Macmillan.

Michell, T. (1988), *From a Developing to a Newly Industrialised Country: the Republic of Korea, 1962-82*, Geneva: International Labour Office.

Ministry of Agriculture, Fishery and Forestry, *Statistical Yearbook*, various issues, Seoul.

Ministry of Education and Department of Human Resources (2007), *Human Resource Trends Through Statistics*, Seoul.

Modiano, E. (1990), 'A Opera dos Três Cruzados: 1985-1989', in Abreu, M. de Paiva, et. al. (1990), *A Ordem do Progresso: Cem anos de Politica Economica Republicana (1889-1989)*. Rio de Janeiro: Campus.

Mody, A. and D. Wheeler (1987), 'Prices, Costs, and Competition at the Technology Frontier: A Model for Semiconductor Memories', *Journal of Policy Modeling*, 9(2), pp. 367-382.

Monk-Turner, E. and C. Turner (2000), 'The Relative Pay of Men and Women in South Korea', *Journal of Asian Economics*, 11, pp. 223-236.

Moon P. and B. Kang (1989), *Trade, Exchange Rate, and Agricultural Pricing Policies in the Republic of Korea*, Washington D.C: The World Bank.

Moon, P.Y. (1991a), 'A Positive Grain-Price Policy (1969) and Agricultural Development', in L.J Cho and Y.H. Kim (eds.), *Economic Development in the Republic of Korea; A Policy Perspectives,* Honolulu: University of Hawaii Press.

Moon, P.Y. (1991b), 'The Saemul (New Community) Movement (1971)', in L.J Cho and Y.H. Kim (eds.), *Economic Development in the Republic of Korea; A Policy Perspectives,* Honolulu: University of Hawaii Press.

Moon, W. and Y. Rhee (2009), 'Financial Integration and Exchange-Rate Coordination', in D.K. Chung and B. Eichengreen (eds.), *Fostering Monetary & Financial Cooperation in East Asia*, Singapore: World Scientific.

Moon, P.Y. and B.S. Ryu (1977), 'Korea's Agricultural Policies in Historical Perspective', Working Paper No. 7704, Korea Development Institute, Seoul.

Moran T. (2005), 'How Does FDI Affect Host Country Development? Using Industry Case Studies to Make Reliable Generalisations', in T. Moran, et al. (eds), *Does Foreign Direct Investment Promote Development?,* Washington D.C.: Institute for International Economics.

Morandi, L. and E. Reis (2004), 'Estoque de capital fixo no Brasil - 1950-2002', XXXII Encontro Nacional de Economia, ANPEC.

Moreira Alves, M. (1984), 'Grassroots Organizations, Trade Unions, and the Church: A Challenge to the Controlled Abertura in Brazil'. *Latin American Perspectives,* 11(1), 73-102.

Moreira Alves, M. (1985), 'The PT and the New Republic', *Bulletin of Latin American Research,* 4(2), pp. 95-98.

Morley, S. (1973), 'Inflation and Stagnation in Brazil.' *Economic Development and Cultural Change*, 21(3), 184-203.

Mueller, H. and K. Kawahito (1978), *Steel Industry Economics: a Comparative Analysis of Structure, Conduct and Performance*, New York: [s.n.].

Murray, R. (1977). 'Value and Theory of Rent: Part One', *Capital and Class*, 3(Autumn), pp. 100-122.

Murray, R. (1978). 'Value and Theory of Rent: Part Two', *Capital and Class*, 3(Spring), pp. 11-33.

Najberg, S. (1989), Privatização de Recursos Públicos: os Empréstimos do Sistema BNDES ao Setor Privado Nacional com Correção Parcial, 14th Premio BNDES de Economia, Dissertação de Maestrado, Pontificia Universidade Católica, Rio de Janeiro.

Nam, S.W. (1991), 'The Comprehensive Stabilization Program (1979)', in L.J Cho and Y.H. Kim (eds.), *Economic Development in the Republic of Korea; A Policy Perspectives*, Honolulu: University of Hawaii Press.

National Department of Mining Production (2011), 'Taxation of Mining Activities in Brazil; Analysis of Current Situation and of Changes Proposed for Tax Reform', http://www.dnpm.gov.br/enportal/mostra_arquivo.asp?IDBancoArquivoArquivo=429.

National Pension Service (2008), *2007 Annual Report on National Pension Fund Management*, National Pension Research Institute, Seoul.

National Statistical Office, *Korea Statistical Yearbook*, various issues, Seoul.

Nazmi N. (1995), 'Inflation and Stabilization: Recent Brazilian Experience in Perspective', *The Journal of Developing Areas*, 29(4), pp. 491-506.

Newfarmer, R. and Mueller, W. (1975), *Multinational Corporations in Brazil and Mexico: Structural Sources of Economic and Non-Economic Power*, Report to the Sub-committee on Multinational Corporations of the Committee on Foreign Relations, US Senate, Washington D.C.

Noble, G. (2005), 'Reshaping Corporatism: The Japanese and Korean Auto Industries in a Globalizing World Economy', Presented at the annual meeting of the American Political Science Association, Washington, D.C., 1st Sep.

Nolan, P. (2001), *China and the Global Business Revolution*, Hampshire: Palgrave.

Noland, M. (2000), *Avoiding the Apocalypse: The Future of the Two Koreas*, Washington D.C.: Institute for International Economics.

Novelli, J. and A. Galvaio (2001-2), 'The Political Economy of Neoliberalism in Brazil in the 1990s.' *Int. Journal of Political Economy*, 31(4), 3–52.

O'Brien, P. (1998), *Korea's Automotive Future*, FT Automotive, Financial Times.

O'Keefe, T. and J. Haar (2001), 'The Impact of MERCOSUR on the Automobile Industry', The North-South Agenda Papers, No 50, Sept., North-South Center, University of Miami.

Oh, J. (1975), 'South Korea 1975: A Permanent Emergency', *Asian Survey*, 16(1), pp. 72-81.

Ocampo, J.A. and M. Parra-Lancourt (2010), 'The Terms of Trade for Commodities since the mid-19th Century', *Journal of Iberian and Latin American Economic History*, 28, pp. 11-43.

Oliveira, J. (1986), 'Trade Policy, Market 'Distortions', and Agriculture in the Process of Economic Development: Brazil, 1950-1974', *Journal of Development Economics*, 24(1), 91-109.

Oliveira, F. de (2006), 'Lula in the Labyrinth', *New Left Review*, 42, pp. 5-22.

Oliveira, F. de and M.A. Travolo Popoutchi (1979), *El Complejo Automotor en Brasil*, Mexico D.F.: ILET/Nueva Imagen

Oliveira, F. et al. (1999), 'A Rentabilidade do FGTS', Texto para discussão No 637, IPEA, Rio de Janeiro.

Oreiro, J. and C. Feijo (2010), 'Desindustrialização: Conceituação, Causas, Efeitos e o Caso Brasileiro', *Revista de Economia Política*, 30(2), pp. 219-232.

Palais, J. (1974), '"Democracy" in South Korea, 1948-72', in B. Frank (ed.), *Without Parallel; The American-Korea Relationship Since 1945*, New York: Pantheon Books.

Pagano, L. (1999), *Competitividade das Exportações Brasileiras do Setor Siderúrgico nos Anos Noventa*, PhD Thesis, Escola de Administração de Empresas de São Paulo, Fundação Getulio Vargas.

Paiva Badiz Furlaneto, F. et al. (2005), 'Custo de Producao e Rentabilidade da Cultura da Banana 'Maca' na Regiao do Medio Paranapenema, *Informações Econômicas*, 35(12), pp. 19-25.

Paniza, F. (2004), ''Brazil Needs to Change': Change as Iteration and the Iteration of Change in Brazil's 2002 Presidential Election', *Bulletin of Latin American Research*, 23(4), pp. 465–482.

Park, Y.C. (1986), 'Foreign Debt, Balance of Payments, and Growth Prospects: The Case of the Republic of Korea, 1965-88', *World Development*, 14(8), pp. 1019-1058.

Park, E.Y. (1997), 'Role of Government, Technological Capability and Development of Steel Industry: The Case of POSCO', Occasional paper No 6, IDRI, Tokio.

Park, E.Y. (2003), 'Behind POSCO's Success: the Role of Government in Technology Capability Building', in K.S. Jomo (ed.), *Manufacturing Competitiveness in Asia*, London: RoutledgeCurzon.

Park, C.K. (1991), 'The Health Insurance Scheme', in L.J Cho and Y.H. Kim (eds.), *Economic Development in the Republic of Korea; A Policy Perspectives*, Honolulu: University of Hawaii Press.

Park, S.I. (1990), Industrial Relations Policy in Korea: its Features and Problems, in J.K. Kwon (ed.), *Korean Economic Development*, New York: Greenwood Press.

Park, W.A. (1996), 'Financial Liberalization: The Korean Experience', in I. Takatoshi and A. Krueger (eds.), *Financial Deregulation and Integration in East Asia*, Chicago: University of Chicago Press.

Park, W.A. and G. Choi (2004), 'What caused the crisis? A *Post Mortem*', in D.K Chung and B. Eichengreen (eds.), *The Korean Economy Beyond the Crisis*, Cheltenham: Edward Elgar.

Perkins. D. (1994), 'There Are At Least Three Models of East Asian Development', *World Development*, 22(4), pp. 655-661.

Paschoalin (2010), *Shipyards in Brazil*, Rio de Janeiro: Paschoalin Consultoria.

Perrin, S. (2001), 'Korean Direct Investment in North America and Europe: Patterns and Determinants in F. Sachwald (ed.), *Going Multinational; The Korean Experience of Direct Investment*, London: Routledge.

Plank, D.N. (1996), *The Means of Our Salvation, Public Education in Brazil, 1930-1995*, Boulder: Westview Press.

Perusek, G. and K. Worcester (1995), 'Introduction: Patterns of Class Conflict in the United States since the 1960s', in G. Perusek and K. Worcester (eds.), *Trade Union Politics*, New Jersey: Humanities Press.

Pires Jr, F.C. (1999), 'An Assessment of Brazilian Shipbuilding Competitive Potential, *Journal of Ship Production*, 15(2), pp. 114-125.

Pirie, I. (2008), *The Korean Developmental State: From Dirigisme to Neo-liberalism*, London; New York: Routledge.

Pochman, M. (2008), *O Emprego no Desenvolvimento da Nação*. São Paulo: Boitempo.

Pomerleano, M. (1998), 'The East Asia Crisis and Corporate Finances: The Untold Micro Story', Working Paper No. 1900, The World Bank.

Portugal, M. (1994), As Políticas Brasileiras de Comércio Exterior: 1947-88, *Ensaios FEE*, (15)1, pp. 234-252.

POSCO (2004), *P'osuk'o 35-yon sa: charyo p'yon*, P'ohang-si: P'osuk'o. [in Korean].

Posthuma, A. (1997), 'Autopecas na Encruzilhada', in G. Arbix and M. Zilbovicius (eds.), *De JK and FHC: A Reinvenção Dos Carros*, São Paulo: Scritta.

Prado Lima, S.M. do (2007), 'A Evolucao da Participacao dos Fatores Produtivos Primarios na Renda do Setor Agropecuario no Periodo de 1970 a 1995/6', Dissertacao MSc, ESLQ, Universidade de São Paulo.

Pretti Casotti, B. and M. Goldenstein (2008), 'Panorama do Setor Automotive: as Mudancas Estruturais da Industria e as Perspectivas para o Brasil', *BNDES Setorial*, 28, pp. 147-188.

Pyo H.P (1998), 'Estimates of Fixed Reproducible Tangible Assets in the Republic of Korea, 1953-1996', Korean Development Institute, Seoul.

Pyo H.P (2003), 'Estimates of Capital Stocks by Industries and Types of Assets in Korea (1953-2000)', *Journal of Korean Economics Analysis*, 9(1), pp. 203-282. [in Korean].

Radelet, S. and J. Sachs (1998), 'The East Asian Financial Crisis: Diagnosis, Remedies, Prospects', *Brookings Papers on Economic Activity*, No. 1, pp. 1-90

Radetzki, M. (2006), 'The Anatomy of Three Commodity Booms'. *Resources Policy,* 31, pp. 56–64.

Ranis, G. (1973), 'Industrial Sector Labor Absorption', *Economic Development and Cultural Change,* 21(3), pp. 387-408.

Ranis, G. (1989), 'The Role of Institutions in Transition Growth: The East Asian Newly Industrializing Countries', *World Development,* 17(9), pp. 1443-1453.

Ranis, G. (1995), 'Another Look at the East Asian Miracle', *The World Bank Economic Review,* 9 (3), pp. 509-34.

Ravenhill, J. (2001), 'From National Champions to Global Partnerships: The Korean Auto Industry, Financial Crisis and Globalization', Working Paper No. 01.04, MIT Japan Program, Massachusetts Institute of Technology.

Rezende, G.C. (1981), 'Credito Rural Subsidiado e Preco da Terra no Brasil', Textos para Discussao Interna No 41, IPEA, Rio de Janeiro.

Ripper Filho, J. (2004), 'História da Microeletrônica no Brasil', mimeo.

Rodriguez Pose, A. and G. Arvix (2001), 'Strategies of Waste: Bidding Wars in the Brazilian Automobile Sector', *International Journal of Urban and Regional Research,* 25(1), pp. 134-54.

Rodríguez-Pose, A. and N. Gill (2003), 'Is There a Global Link between Regional Disparities and Devolution?', Research Papers in Environmental and Spatial Analysis No. 79, Department of Geography & Environment, London School of Economics and Political Science.

Rodrigues Vegro, C. (2004), Lucro na Cafeicultura: Miragem ou Concreta Possibilidade?, *Instituto de Economia Agricola,* São Paulo, mimeo.

Rodrik, D. (1994), 'Getting Interventions Right: How South Korea and Taiwan Grew Rich', Working Paper No. 4964, National Bureau of Economic Research.

Roett, R. (2010), 'How Reform Has Powered Brazil's Rise', *Current History* 109(724), pp. 47-52.

Rostow, W.W. (1958), 'The Take-off into Self-sustained Growth', in A.N. Agarwala and S.P. Singh (eds.), *The Economics of Under-development*, Oxford: Oxford University Press.

Ruiz, J. and J. Vilarubis (2007), 'International Recycling of Petrodollars', Documentos Ocasionales No 0605, Banco de España, Madrid.

Saad-Filho. A. and L. Morais (2005), 'Lula and the Continuity of Neoliberalism in Brazil: Strategic Choice, Economic Imperative or Political Schizophrenia?', *Historical Materialism*, 13(1), pp. 3-32.

Saad-Filho. A. and L. Morais (2011), 'Brazil beyond Lula: Forging Ahead or Pausing for Breath?', *Latin American Perspectives*, 38(2), pp. 31-44.

Salama, P. (1978), 'Specificite de L'Internationalisation du Capital en Amerique Latina.' *Revue Tiers Monde*, 19(74), 259-297.

Santana Ferreira (1992), 'Cacao Standard Production Cost Monitoring in Bahia, Brazil', *Agrotopica*, 4(3), Centro de Pesquisas do Cacau, Illheus, Bahia.

Santos, C.H. (1999), 'Políticas Federais de Habitação no Brasil: 1964/1998', Texto para Discussao No 654, IPEA, Rio de Janeiro.

Sassen, S. (1988), *The Mobility of Labour and Capital: A Study in International Investment and Labor Flow*, Cambridge: Cambridge University Press.

Savasini, J. (1978), *Export Promotion: the Case of Brazil*, New York: Praeger.

Schaller, S. (2008). 'Lula's Growth Acceleration Program: The Best Brazilian Government Funding Can Buy?' Council on Hemispheric Affairs, 5 June. (http://www.coha.org/lula%E2%80%99s-brazilian-growth-acceleration-program-the-best-that-government-funding-can-buy/).

Schiff, M. and A. Valdes (1991), *The Political Economy of Agricultural Pricing Policy*, John Hopkins University Press.

Schmitz, H. and R. de Quadros, Carvalho (1989), 'Automation and Labour in the Brazilian Car Industry', *Journal of Development Studies*, 16(1), pp. 81-119.

Scherrer, C. (1995), 'Surprising Resilience: The Steelworkers' Struggle to Hang on to the Fordist Bargain', in G. Perusek and K. Worcester (eds.), *Trade Union Politics*, New Jersey: Humanities Press.

Schoenberger, E. (1988), 'Multinational Corporations and the New International Division of Labor: A Critical Appraisal', *International Regional Science Review*, 11(2), pp. 105-119.

Seering, W. (1987), 'Robotics, Numerical Control and the Computer', in Watanabe, S. (ed.), *Microelectronics, automation and employment in the automobile industry*, Chichester: Wiley.

Seguino, S. (2000), 'The Effects of Structural Change and Economic Liberalisation on Gender Wage Differentials in South Korea and Taiwan', *Cambridge Journal of Economics*, 24, pp. 437-459.

Serra, J. (1972), *El Milagro Económico Brasileño: ¿Realidad o Mito?*, Buenos Aires: Ed. Periferia.

Serra, J. (1982), 'Ciclos e Mudanças Estructurais na Economia Brasileira de Pos-Guerra', In Gonzaga M. Belluzzo, L. and R. Coutinho (eds.), *Desenvolvimento Capitalista no Brasil*, São Paulo: Editora Brasiliens.

Shaiken, H. (1986), *Work Transformed: Automation and Labor in the Computer Age*, Lexington, Mass.: Lexington Books.

Shapiro, H. (1993), 'Automobiles: From Import Substitution to Export Promotion in Brazil and Mexico', in D. Yoffie (ed.), *Beyond Free Trade Firms, Governments, and Global Competition*, Boston, Mass.: Havard Business School Press.

Shapiro, H. (1991), 'Determinants of Firm Entry into the Brazilian Automobile Manufacturing Industry, 1956-1968', *Business History Review*, 65(4), pp.876-947.

Shapiro, H. (1994), *Engines of Growth, the State and Transnational Auto Companies in Brazil*, Cambridge: Cambridge University Press.

Shapiro, H. (1996), 'The Mechanics of Brazil's Auto Industry', NACLA Report on the Americas, 29, pp. 28-36.

Shapiro, H. (1997), 'Review of Export Promotion Policies in Brazil', *Integration and Trade*, 3, pp. 69-91.

Shin, D.M. (2003), *Social and Economic Policies in Korea; Ideas, Networks and Linkages*, London: RoutledgeCurzon.

Simonsen, M.H. and R. Campos (1974), *A Nova Economia Brasileira*, Rio de Janeiro: Livaria Jose Olimpo.

Silva Cunha, L., et al. (2001), 'Impactos da Privatizacao no Setor Siderurgico', BNDES, mimeo.

Silver, B. (2003), *Forces of Labor: Workers' Movements and Globalization since 1870*, Cambridge: Cambridge University Press.

Skidmore, T. (2007), *Politics in Brazil, 1930-1964: an Experiment in Democracy*. Oxford: Oxford University Press.

Skidmore, T. (1988), *The Politics of Military Rule in Brazil, 1964-1985*, Oxford: Oxford University Press.

Sousa Melo, P. de, et al. (2001), 'Componentes Eletronicos: Persepectivas para o Brasil', *BNDES Setorial*, 13, pp. 3-64.

Spanakos, A. and L. Renno (2006), 'Elections and Economic Turbulence in Brazil: Candidates, Voters, and Investors'. *Latin American Politics and Society,* 48(4), 1-26.

Starosta G. (2010), 'Global Commodity Chains and the Marxian Law of Value', *Antipode*, 42(2), pp. 433-465.

Stern, et al. (1995), *Industrialization and the State: The Korea Heavy and Chemical Industry Drive*, Cambridge: Harvard Institute for International Development.

Stiglitz, J.E. (1996), 'Some Lessons From the East Asian Miracle', *The World Bank Research Observer*, 11(2), pp. 151-77.

Stiglitz, J.E. (2001), 'From the Miracle to Crisis to Recovery: Lessons from Four Decades of East Asian Experience', in J.E. Stiglitz and S. Yusuf (eds.), *Rethinking the East Asian Miracle*, Oxford: Oxford University Press.

Storey, J. (1997), *The World's Car Manufacturers: A Strategic Review of Finance and Operations*, FT Automotive, Financial Times.

Sturgeon, T. and R. Florida (2004), 'Globalization, Deverticalization, and Employment in the Motor Vehicle Industry', in M. Kenney and R. Florida (eds.), *Locating Global Advantage, Industry Dynamics in the International Economy*, California: Stanford University Press.

Sugihara, K. (2003), 'The East Asian Path of Economic Development: A Long-term Perspective', in G. Arrighi et al. (eds.), *The Resurgence of East Asia*, London: Routledge.

Suzigan, W. et al, (1974), *Crescimento Industrial no Brazil: Incentivos e Desemenho Recente, Relatorios de Pesquisa*, Instituto de Planejamento Econômico e Social, No. 26, Rio de Janeiro.

Tani, A. (1989), 'International Comparison of Industrial Robot Penetration', *Technological Forecasting and Social Change*, 35(2-3), pp. 191-210.

Tassey, G. (1990), 'Structural Change and Competitiveness; The U.S. Semiconductor Industry', *Technological Forecasting and Social Change*, 37, pp. 85-93.

Tauile, J. (1987), 'Microelectronics and the Internationalization of the Brazilian Automobile Industry', in Watanabe, S. (ed.), *Microelectronics, automation and employment in the automobile industry*, Chichester: Wiley.

Tavares, M. (1977), *Da Substituição de Importações ao Capitalismo Financeiro: Ensaios sobre Economia Brasileira*, Rio de Janeiro: Zahar Editores.

Taylor, A. and M. Taylor (2004), 'The Purchasing Power Parity Debate', *Journal of Economic Perspectives*, 18(4), pp. 135-158.

Theelen, K. (2001), 'Varieties of Labor Politics in the Developed Democracies', in P.A. Hall and D. Soskise (eds.), *Varieties of Capitalism, The Institutional Foundations of Comparative Advantage*, Oxford: Oxford University Press.

Tigre, P. (1987), *Technology and Competition in the Brazilian Computer Industry*, London: Pinter.

Timmer, M. and B. van Ark (2002), 'Capital Formation and Productivity Growth in South Korea and Taiwan: Beating Diminishing Returns through Realising the Catch-Up Potential', Groningen Growth and Development Centre, University of Groningen.

Torii, Y. (1989), 'Robotization in Korea: Trend and Implications for Industrial Development', *Technological Forecasting and Social Change*, 35, pp. 179-190.

Toulouse, C. (1995), 'Political Economy after Reagan', in G. Perusek and K. Worcester (eds.), *Trade Union Politics*, New Jersey: Humanities Press.

Tyler, W.G. (1986), 'Stabilization, External Adjustment, and Recession in Brazil: Perspectives on the mid-1980s', *Studies in Comparative International Development*, 21(3), pp. 5-29.

Upton, D. and B. Kim (2009), 'Daewoo Shipbuilding and Marine Engineering', Harvard Business School, 9-609-018.

UNIDO (2003), *The Global Automotive Industry Value Chain: What Prospects for Upgrading by Developing Countries*.

US Bureau of Census, 'Quarterly Financial Report for Manufacturing, Mining and Trade Corporations', various issues.

Valle Silva, N. de (2008), 'Brazilian society: Continuity and change, 1930–2000', in L. Bethell (ed.), *The Cambridge History of Latin America Volume IX, Brazil since 1930*, Cambridge: Cambridge University Press.

Van Liemt, G. (1988), *Bridging the gap: Four Newly Industrialising Countries and the Changing International Division of Labour*, Geneva: ILO.

Veiga, A. (1974), 'The Impact of Trade Policy on Brazilian Agriculture, 1947-1967', PhD thesis, Purdue University.

Veira, A. and F. Coutinho Garcia (2004), 'Qualificação Formal do Trabalhador e Automação na Fiat Automóveis: um Estudo Comparativo nas Plantas Industriais de Cassino (Ita) e Betim (Br)', *Economia e Gestão*, 4(7), pp. 55-70.

Viegas Andrade, M. and M. Barros Lisboa (2000), 'Desesperança de Vida: Homicídio em Minas gerais, Rio de janeiro e São paulo – 1981 a 1997', IX Seminário sobre a Economia Mineira, pp.775-808.

Vigevani, T. and J. Candia Veiga (1997), 'A Integracao Regional no Mercosul', in G. Arbix and M. Zilbovicius (eds.) De JK and FHC: A Reinvencao dos Carros, São Paulo: Scritta.

Villela, A. (2000), 'The Collor Plan and the Industrial and Foreign Trade Policy (PICE), 1990-92', in A. Villela et al. (eds.), *Escritos Selecionados De Annibal Villela*, Brasilia: IPEA.

Von Doellinger, C., et al. (1974), *A politica Brasileira de Comercio Exterior e sus Efeitos: 1967-73*, Rio de Janeiro: IPEA.

Wade, R. (1990), 'Industrial Policy in East Asia: Does It Lead or Follow the Market?', in G. Gereffi and D.L Wyman (eds.), *Manufacturing Miracles: Paths of Industrialisation in Latin America and East Asia*, New Jersey: Princeton University Press.

Wade, R. (1998), 'From "Miracle" to "Cronyism": Explaining the Great Asian Slump', *Cambridge Journal of Economics*, 22, 693-706.

Wade, R. and F. Veneroso (1998), 'The Asian Crisis: The High Debt Model Versus the Wall Street-Treasury-IMF Complex', *New Left Review*, I/228, pp. 3-22.

Waitt, A. (1993), 'Say Bye to Hyundai and Hi to Korean Autoparts? Restructuring the Korean Automobile Industry in the 1990s', 1990s *Tijdschrift voor Econ. en SOC. Geografie* 84(3), pp. 198-206.

Warnken, P. (1999), *The Development and Growth of the Soybean Industry in Brazil*, Ames: Iowa State University Press.

Warren, B. (1980), *Imperialism: Pioneer of Capitalism*, London: NLB and Verso.

Watanabe, T. (1978), 'Heavy and Chemical Industrialization and Economic Development in the Republic of Korea', *The Developing Economies*, 16(4), pp. 385-407.

Watanabe, S. (1987), 'Flexible Automation and Labour Productivity in the Japanese Automobile Industry', in Watanabe, S. (ed.), *Microelectronics, Automation and Employment in the Automobile Industry*, Chichester: Wiley.

Watanabe, S. (1987), *Microelectronics, Automation and Employment in the Automobile Industry*, Chichester: Wiley.

Weeks (1998), *The Law of Value and the Analysis of Underdevelopment*, Discussion Paper No. 0498, Centre for Development Policy & Research, School of Oriental and African Studies.

Wells, J. (1973), *Euro-dollars, Foreign Debt and the Brazilian Boom*, Working Paper No. 13, Centre of Latin American Studies, University of Cambridge.

Wells, J. (1983), 'Industrial Accumulation and Living Standards in the Long-Run: The São Paulo Industrial Working Class, 1930-1975, Part II', *Journal of Development Studies*, 19, 297-328.

West, J.M. (1987), 'South Korea's Entry into the International Labor Organisation: Perspectives On Corporatist Labor Law During A Late Industrial Revolution', *Stanford Journal of International Law*, 23, pp. 477-546.

Westphal, L. and K.S. Kim (1977), 'Industrial Policy and Development in Korea', World Bank Staff Working Paper No. 263, The World Bank, Washington D.C.

Wideman, B. (1974), 'The Plight of South Korean Peasant', in B. Frank (ed.), *Without Parallel; The American-Korea Relationship Since 1945*, New York: Pantheon Books.

Williams, K, et al. (1994), *Cars*, Providence: Berghahn Books.

Woo, M.O. (1993), 'Export Promotion in the New Global Division of Labor: The Case of the South Korean', *Sociological Perspectives*, 36(4), pp. 335-357.

World Bank (1983), *Brazil: Industrial Policies and Manufactured Exports*, Washington D.C., The World Bank.

World Bank (1984), *Korea's Development in a Global Context*, Report No. 5102-KO, Washington D.C., The World Bank.

World Bank (1987), *Korea: Managing the Industrial Transition*, Washington D.C., The World Bank.

World Bank (1993), *The East Asian Miracle: Economic Growth and Public Policy*, Oxford: Oxford University Press.

Yeats, A. (1998), 'Does Mercosur's Trade Performance Raise Concerns about the Effects of Regional Trade Arrangements?', *The World Bank Economic Review*, 12(1), pp. 1-28.

You, J.I. (1995), 'Changing Capital-labour Relations in South Korea', in J.B. Schor and J.I. You (eds.), *Capital, the State and Labour, A Global Perspective*, Aldershot: Edward Elgar.

Zurron Ocio, D. (1986), 'Salarios e Politica salarial,' *Revista de Economia Politica*, 6 (2), 5-26.