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**Government Intervention and  
Industrialization: the case of the Republic  
of Korea.**

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Texto para Discussão

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## Government Intervention and Industrialization: the case of the Republic of Korea.

The bulk of the literature on trade and development attributes the success of Republic of Korea's<sup>1</sup> industrialization to the adoption, in the early 1960s, of a neutral, hands-off, outward-looking policy regime.<sup>2</sup> Drawing on the neoclassical paradigm, the essence of the argument is that the introduction of a low and uniform rate of protection, offset by equally low and uniform export subsidies, would have led the economy back to its shadow prices, guaranteeing allocative efficiency in line with the country's static comparative advantages. The speed, efficiency and international competitiveness of the industrialisation that followed, would have been not more than an inexorable and theoretically predictable consequence.

Following the lead given by authors such as Westphal (1982, 1990), Pack and Westphal (1986), Amsden (1989) and Lall (1991), the purpose of this paper is to question this interpretation through a careful investigation of the role of government in Korea's industrialization. It attempts to show, first, that even though outward-orientation was an important and necessary part of Korea's success, its policy regime was not firm, industry or market neutral, and overall protection was everything but low. Second, that high protection and non-uniform incentives were part of a set of measures designed to overcome specific market failures in the product and factor markets, which, constrained by the outward-orientation discipline, effectively paved the way to an internationally competitive industry.

The paper is organised in four sections. The first sets a proper background for the discussion, reviewing the main characteristics of the pre-1960 industrialization and related policy

<sup>1</sup> Hereafter Korea.

<sup>2</sup> See, for instance, Frank et al. (1975), Krueger (1979, 1985), Hong (1979), Mason et al. (1980), Kim and Westphal (1982), Balassa (1985, 1991), World Bank (1984, 1987).

regime. The following sections cover the government's policies during what is widely recognised as the three main stages of Korea's industrialization: the 'neutral' export-oriented regime of the 1960s, the heavy and chemical industry (HCI) drive of the 1970s, and the liberalisation of 1980s.

**I-The Background: the pre-1960 period.**

The first significant spurt of manufacturing investment in Korea took place early this century under Japanese colonial rule (1910-1945). Until then, centuries of isolationism under the Yi dynasty (1392-1910)—only interrupted by the opening of the ports in 1876—coupled with a feudal economy, had contributed very little to industrial development. When the Japanese took over, manufacturing accounted for only 3.3% of GDP.<sup>3</sup> Boosted, then, by political and institutional reforms that removed the last traces of the *ancien régime*, and supported by Japanese investments and skills, manufacturing growth eventually took off. It reached an annual compound rate of 10% over 1910-40, with the manufacturing share of GDP increasing to 21.9% in 1940.<sup>4</sup> Initially based on light industries, this manufacturing boom soon shifted to the heavy industry (mainly chemicals), following Korea's involvement in Japan's war preparations. As of 1940, heavy industry accounted for 50% of manufacturing output.

However, as Jones and Sakong (1980:23) pointed out, the contribution of these impressive developments to Korea's post-war industrialization was severely curtailed by three main factors. First, as Korea's industry was strictly built to complement the Japanese industrial structure, there were few backward and

<sup>3</sup> The figures related to the pre-1950 period, unless stated otherwise were taken from Jones and Sakong (1980, chap 2).

<sup>4</sup> All growth rates of this study, unless stated otherwise, were computed in constant prices using the least-squares method, with the regression equation taking the form  $\log X_t = a + bt + e_t$ , which is the equivalent to the logarithmic transformation of the compound growth rate equation  $X_t = X_0(1+r)^t$ , where  $X$  is the relevant variable,  $r$  is the rate of growth, and  $t$  is time (World Bank 1991:273).

forward linkages, and sales were highly dependent on the Japanese market. As of 1940, two-thirds of the manufacturing output was exported to Japan. Needless to say that the Japanese withdrawal led to a severe market disruption.

Second, virtually all large manufacturing firms were owned by Japanese (as of 1941, they made up 91% of the total paid-in capital), who also held the overwhelming majority of the managerial and skilled jobs (81% in 1943). This fact greatly hindered the human capital build-up, and led to an acute shortage qualified the workers after the Japanese withdrawal. By 1946, 40% of the work force had no schooling and only 7.4% had secondary education (Table A.1). And third, the 1947 division of the country, left the South (which became Republic of Korea) without the bulk of the heavy industry and without 90% the country's electric power supply.<sup>5</sup> Table A.2 shows that in 1953, the heavy industry's share of manufacturing output was less than half of that of the pre-war period.

Therefore, despite rapid progress under Japanese rule, Korea's industry in the wake of WWII was facing a severe market disruption, an acute skill shortage and had lost most of its heavy industries and electric power supply. In 1948, manufacturing output was only 14% of the 1938 level. To add to the problems, the outbreak of the Korean war in 1950 led to the destruction of half of the remaining industrial structure. By 1953, the manufacturing share of GDP had been reduced to 8% (table A.5), and American consultants—hired by the U.N. to draw a reconstruction program—were suggesting that Korea should concentrate on exploiting her (far from abundant) agricultural and mineral resources (Krueger, 1979:77).<sup>6</sup>

<sup>5</sup> The country division resulted from the political polarisation that followed WW II. With the Soviet Union supporting the left and the U.S. the right, the conflict came to a head in 1947, with the country being divided along the 38° parallel.

<sup>6</sup> In 1950, North Korea invaded its southern counterpart provoking the U.S. intervention. The war ended with an armistice in 1953, without a clear winner. For a detailed analysis of the political and economic situation in the 1950s, see Cole and Lyman (1971).

The chaotic state of the manufacturing sector was not, however, Korea's only problem in the early 1950s. In fact, she emerged from the Korean War unable to stand on her feet. Exports, mainly minerals (tungsten), were just a fraction of imports, which were mostly financed by foreign aid.<sup>7</sup> The financing of this huge foreign exchange gap soon became the main objective of the government's policies, which sought concurrently to maximise foreign aid, carry out IS and boost exports, in this order of importance.

The IS strategy owed nothing to its Latin American counterparts. A complex multiple exchange rate system was introduced, used concurrently with high and escalating tariffs and comprehensive NTBs.<sup>8</sup> Unlike typical IS regimes, though, exports benefited from a range of export incentives, including preferential finance, and import licensing conditional on export performance (1957).<sup>9</sup> The results in terms of manufacturing growth were far from disastrous. Output grew at an annual average rate of 14.7% over 1954-59 (table A.3), driven by a 'pre-emptive' IS in the light industry.<sup>10</sup> Yet, this figure looks less

<sup>7</sup> As of 1954, 74% of the imports were financed by aid (Krueger 1979:67).

<sup>8</sup> During the 1950s, apart from the official rate, importers had to deal with at least three exchange rates according to the foreign exchange source, i.e., exports, government held foreign exchange or foreign aid. As of 1957, the weighted average tariff rate was around 35.4% (table A.10), with the tariff structure ranging from zero (producer goods) to more than 100% (consumer goods). During 1949-53, imports were controlled by a quota system, replaced in 1953 by a more flexible scheme, based on a positive list of imports. Imports were divided into two categories: automatic approved and restricted. See Jones and Sakong (1980) and Frank et al. (1975).

<sup>9</sup> The major export incentives introduced up to 1959 were: export-import link scheme whereby exporters were allowed to import popular items normally banned, commodity tax exemption, export financing, export insurance, trade licensing based on export performance, export bonus with preferential exchange rates, payment of direct export subsidies, discount on railroad freight rates, tariff exemption on imports of inputs. See table A.11.

<sup>10</sup> As Suh (1975) pointed out, the full extent of IS in the light industry does not show in the import coefficients (table A.3) given that the imported component of domestic supply was already very low in 1953, reflecting the foreign exchange shortage. In conjunction with stringent import controls, though, IS reduced the consumer goods share of total imports from 70 to 25% over 1953-60 (Krueger, 1979).

impressive if one takes into account the reduced size of the post-war manufacturing base.

In contrast, the results regarding overall economic and export growth were clearly disappointing. Given the industry's small share of GNP, its expansion failed to boost the rest of the economy, resulting in a lacklustre GNP growth of 4.6% p.a. over 1953-59. By 1960, Korea's GNP per capita was only \$78, almost half of the LDCs' average.<sup>11</sup> As for exports, the figures were even more discouraging, doing nothing to alleviate the dire balance of payments (BP) problems.<sup>12</sup> Total exports shrank in average by 3% p.a., and manufactured exports by 2.7%.<sup>13</sup> The latter accounted in 1960 for a meagre 13.5% of total exports (table A.6) and for less than 1% of the total manufacturing output (table A.4).

As one would expect, Neoclassicals blame the IS policies for these mixed results, particularly for the negligible manufactured exports.<sup>14</sup> The indiscriminate use of NTBs and high tariffs would have distorted relative prices, provoking a debilitating misallocation of resources; while their combination with multiple and overvalued exchange rates, would have biased incentives towards the domestic market, pulling resources away from exports. Furthermore, the attempt to 'buck the markets' with a plethora of regulations, viewed as intrinsic to IS regimes, would have stimulated rent-seeking at the expense of more productive activities.

Even though there is truth in these arguments, the emphasis on 'wrong' incentives seems to be unwarranted. To begin with, protection seems to have favoured labour-intensive sectors, which were very much in line with Korea's resource endowment.<sup>15</sup> This is confirmed by the evolution of the

<sup>11</sup> EPBa. The LDCs' average (GDP) was \$150 in 1960 (Little et al., 1970:33)

<sup>12</sup> As of 1959, 73% of imports were still financed by aid (Krueger, 1979:67). See table A.8 for BP data.

<sup>13</sup> Both rates were calculated in current dollars. Total exports from EPBa and manufactured exports from Suh (1975:84 ff.).

<sup>14</sup> See, e.g., Krueger (1979).

<sup>15</sup> See Frank et al. (1975: 36 ff.)

industrial structure over the period (table A.2). Hence, there is little room to argue that resource allocation, from a static viewpoint, was disastrous.

Second, the extent of incentive bias against exports also seems to have been overestimated. Table A.7 reveals that unlike typical IS regimes such as Brazil's (table B.17), the purchase-power-parity (PPP) exchange rate for exports was well above that of imports during the whole period. In addition, it was devalued by 45.5% over 1955-59. To be sure, it is true, as Krueger (1979) pointed out, that PPP exchange rates do not properly reflect the NTBs' impact on import premia. Yet, the same problem occurs with these indicators in other IS regimes, and they all tend to favour imports rather than exports. Moreover, whatever the relative level of the export and import exchange rates, one cannot dismiss the former's rapid devaluation as irrelevant.

So, if incentives were not that 'wrong', the explanation for the mixed industrial performance and negative export growth has at least to incorporate other factors. In this regard, there are two important variables that appears to be extremely relevant: the state of Korea's industry in the early 1950s, and the overall orientation of the government's policies. As to the former, we have already indicated the dire problems concerning the loss and destruction of industrial capacity and infrastructure, lack of qualified personnel and market disruption. These were problems that could not be solved overnight, least of all by market forces alone, and that were severely undermining the industry's performance and ability to respond to relative prices. So, even if prices were completely 'right'—and as shown they were not far from it—it seems unlikely that manufacturing growth would have been higher, or that exports would have promptly responded.

More to the point, without the protection given by the IS policies, the most probable result would have been a Korea along the lines suggested by the American consultants. That is, with no industry at all. Handicapped by the problems mentioned above and faced with a non-existent capital market, Korea's light industry would have been an easy prey for its international competitors, notably the Japanese. Protection gave this industry the necessary breathing space to deal with the problems of reconstruction, and mostly important, to build up human capital.

Without it, the manufactured export boom of the 1960s, when prices were allegedly 'got right', would have been an impossibility.<sup>16</sup>

Turning now to the overall orientation of the government's policy, it seems to have been more of a hindrance than a help to industrial development. True, as just noted, IS policies were instrumental in rebuilding the industry, and had caused fewer price distortions than Neoclassicals want us to believe. Moreover, concerted action in the area of education helped to mitigate the industry's skill shortage (table A.1). Yet, these benefits appear to have come more by accident than by design, in a government whose actions were dominated by,

...short-term objectives of reconstruction and maintenance of minimum consumption standards, both of which were to be achieved by aid maximisation rather than investment and production. (Cole and Lyman, 1971:167)

This short-termism meant that the policies for industry were not more than a by-product of stopgap measures to finance the BP. Apart from education, protection was not accompanied by other measures geared to remedy or take advantage of market failures in the product (e.g. economies of scale and export-related information and transaction costs) and factor markets (e.g. lack of long-term financing, and S&T externalities). Nor protection was given according to a clear timetable, or made conditional on some sort of performance indicator.

In addition, and perhaps even more damaging, the government's overdeveloped instinct for political survival, led to a series of non-economic interventions<sup>17</sup>, which promoted

<sup>16</sup> The textile industry that spearheaded the 1960s export drive is a case in point. Output grew at 13.4% p.a. over 1954-59, and a considerable industrial capacity was built, which by early 1960s was roughly only half used (Michell, 1988 and Amsden, 1989).

<sup>17</sup> Following Lall (1991:12b) non-economic interventions are "those not directed at remedying market failures but at bypassing the markets and replacing

cont.

widespread rent-seeking. Evidence that became available after the fall of the Rhee government (1947-1960)<sup>18</sup>, suggest that the principal origins of 'illicit wealth' were: a) non-competitive allocation of import quotas and import licenses; b) bargain price acquisition of former Japanese properties; c) the selective allocation of aid funds and materials; d) privileged access to cheap bank loans; e) non-competitive award of government and U.S. military contracts for reconstruction services.

Apart from the first, none of these activities can be said to have originated from IS policies, deemed by Neoclassicals as the main source of rent-seeking. Even in the case of NTBs, a competitive system for the allocation of quotas and licences could have avoided rent-seeking. As discussed later, the successful experience of the 1960s, where NTBs continued to be extensively used, tends to support this view. The problem of profiteering, then, was not so much in the type of police pursued by the government, but in its objectives.

In short, Korea's industrialization took off early this century under Japanese colonial rule. Despite considerable development, the industry was in a very bad shape after WWII. The shortcomings of a 'colonial industrialization' became all too obvious when after the Japanese withdrawal, Koreans were left without the necessary skills to run the industry, with a poorly integrated industrial structure and without its main market. The North-South split made things worse, with the loss of most of heavy industry and power supply to the North. As it was not enough, the Korea war destroyed half of the remaining industrial base. With the country living on foreign aid, the government turned to IS policies. These policies allowed the reconstruction of the (light) industrial sector and human capital to build-up, but failed to deliver high economic and export growth. This, however, had less to do with a disastrous industry and trade bias, than with the

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them with administrative rules that do not seek to promote competitive markets."

<sup>18</sup> See Jones and Sakong (1980, chapter 8)

difficulties of learning and reconstruction, and with a government more interested in intervening to guarantee its political survival, than promote industrial and economic development.

## *II-The 'neutral' outward-oriented regime (1960-72).*

The government's failure to deliver high growth and to reduce dependence on aid, compounded by widespread corruption, made its position by the end of the 1950s unsustainable. Internal and external pressure led eventually to a new civilian government in April 1960, quickly followed by a military *coup d'état* in 1961.<sup>19</sup> This political upheaval would have profound implications for Korea's industrialization. The military's commitment to growth and economic independence made a major overhaul of the police regime inevitable. None of these objectives were likely to be achieved by the previous IS 'strategy', given the size of both the internal market and foreign exchange gap.<sup>20</sup> An outward-oriented policy regime turned out to be the answer.

The results were stunning. GNP growth more than double to 9.9% p.a. over 1960-72, boosted by a 20.1% annual growth of the manufacturing output (table A.3). The latter, in turn, was led by exports that grew at an astonishing rate of 59.9% p.a., increasing its share of manufacturing output from 0.8 to 17.9%, and its share total exports from 13.5 to 83.6% (tables A.4 and A.6). Although there was a perceptible movement towards the heavy industry—both in terms of output and exports—the key force behind this performance was the light industry, which by the end of the period still accounted for 76% of manufactured exports and 68% of manufacturing output (table A.2).

As noted earlier, Neoclassicals were quick to attribute these remarkable results to the allegedly neutral and hands-off aspects of the new regime. This view, however, is both simplistic and

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<sup>19</sup> See Amsden (1989, chap. 2) and Cole and Lyman (1971) for details.

<sup>20</sup> Korea's market for manufactures in 1960 was \$1 billion while India's and Brazil's were \$23 billion and \$14 billion, respectively (Kuznets 1977:155). The current account deficit in 1960 amounted to 9.3% of GNP (EPBa).

misleading. First, it does not take into account that the new regime benefited from the manufacturing and human capital base built over the 1950s. And second, it overlooks the fact that government intervention under the new regime, rather than being neutral or non-existent, involved concerted action to remedy failures in the workings of product and factor markets. As the former argument was already outlined in the last section, the focus will now be on the latter, which seems crucial to explain not only the rapid and efficient industrialization of the 1960s, but also of the following decades.

We begin with the product markets, whose analysis, for the sake of clarity, was divided into trade and industrial organisation policies. The former takes up the characteristics of the trade regime, which form the basis of the neoclassical version of the events, and the latter deals with the policies towards conglomeration and foreign direct investment (FDI). We then move on to the factor markets and cover the financial, human capital and Science and Technology (S&T) policies.

### Intervention in the product markets.

#### *The trade regime*

The first three years of the military government are usually seen as a transitional period, when moves to reform the trade regime would have been somewhat compromised by the macroeconomic imbalances provoked by an ill-advised expansionary policy.<sup>21</sup> In fact, a BP crisis precluded a more stable structure of incentives, with the government resorting to temporary and extreme measures to curb imports and boost exports.

<sup>21</sup> There is something of a disagreement over the exact dates of the transitional period. Kim (1975) and Balassa (1985) treat 1960-63 as the transitional period, whereas for Frank et al. (1975) it would be 1961-1966 and for Krueger (1979), 1960-65.

Yet, despite the instability, the government's strategic option for an outward-oriented development was already clear—export growth was heralded as the only way to 'national salvation'—and the key instruments of the new regime were put in place. That is, a comprehensive import-control and incentive system that offered export and 'strategic' industries protection, access to producer goods at international prices, and a variety of financial and fiscal incentives.

In these 'transitional' years, the import side of the regime relied on controls inherited from the IS period. That is, imports continued to be subjected to licensing based on a 'positive-list' that had three categories: automatic approval (AA), restricted and prohibited.<sup>22</sup> The tariff structure and its rates also remained initially unchanged. The exchange rate, though, was unified through devaluations. These controls, however, were soon adjusted given the aforementioned BP problems that emerged in 1963. The number of AA items was, then, gradually reduced (table A.9), tariffs were raised (table A.10), and very restrictive measures were adopted, including an overall import quota and a full-scale export-import link, whereby only exporters were entitled to import. This last measure led to a highly profitable market for import rights, re-establishing in practice multiple exchange rates.<sup>23</sup>

On the export side, pre-existent incentives were reinforced and complemented by new ones. Exporters that already benefited, *inter alia*, from tariff-free access to imported inputs, preferential finance, and from the export-import link premium, were granted further fiscal incentives (exemption from business tax, and 50% reduction on income tax), lower preferential interest rates, direct cash subsidies (1961-1964), and a trade promotion institution (KOTRA-1962) aimed at reducing export-related informational

<sup>22</sup> Item not listed in these categories were also subject to restrictions.

<sup>23</sup> For a detailed account of the trade and exchange rate reforms of the 1960s see Frank et al. (1975, chap. 4), Luedde-Neurath (1986, chap. 2) and Hong (1979, chap. 3 and 5).



and transaction costs.<sup>24</sup> In addition, a full-scale annual export target (1962) was introduced, broken down by commodity, region and country of destination.<sup>25</sup>

These measures, reinforced by a maxidevaluation (98%) in May 1964, eventually improved the BP conditions (table A.8), which in conjunction with a new, and this time, successful attempt to unifying the exchange rate (March 1965)<sup>26</sup>, set the stage for a trade liberalisation. This liberalisation marked the beginning of what Neoclassicals believe to have been a fully fledged neutral, outward-looking regime, with a stable incentive structure that would last at least until 1972.

The liberalisation consisted of a relaxation of the import controls imposed during 1961-64, coupled with an increase in the number and scale of the export incentives. As to import controls, (a) the full-scale export-import link was abolished and replaced by partial ones<sup>27</sup>; (b) import quotas were eliminated; (c) the number of AA items was significantly increased, and in 1967, the 'positive' list turned 'negative', with import categories remaining the same, but items not listed were allowed to be freely imported (table A.9); and (d) the tariff structure was reformed in 1967, lowering the highest tariff from 250 to 150%. Yet, the weighted average tariff increased to from 49.2 to 56.7% (table A.10).

<sup>24</sup> Modelled on the Japan External Trade Organisation (Jetro), Kotra was founded to assist exporters in its relations with foreign buyers. It maintains trade centres abroad to provide information about the products and services that Korean exporters and importers buy or sell. It also explores potential markets for Korean exports and provides training for salesmen (Rhee and Pursell 1984:52).

<sup>25</sup> See table A.11. Table A.9 shows that net export subsidies (excluding tariff and indirect tax exemptions and export premium) more than double over 1960-64.

<sup>26</sup> At first, the exchange rate was allowed to float. However, after 6 months, the government introduced a unitary fixed exchange rate system with ad hoc adjustments to make up for the domestic inflation. See (Kim, K., 1991:57).

<sup>27</sup> They included wastage allowance (1965) and end-user-and-related-product schemes (1966). The former, artificially increased the input-coefficients for certain inputs and commodities allowing the excess to be used for domestic production or to be sold with considerable profit in the internal market. The latter, linked the imports of certain popular consumer items and inputs to the export performance of producers of related products (in the case of consumer goods) and end users (in the case of inputs).

On exports, the emphasis was on increasing credit, tax incentives. The preferential real rate on export credits turned clearly negative (table A.13) and the types and volume of preferential loans for export increased significantly.<sup>28</sup> In addition, the government aiming at mitigating the perverse effect of duty-free inputs on intermediate goods producers, gave them access to export incentives through local letters of credit.<sup>29</sup> As for tax incentives, accelerated depreciation was granted to exporters in 1966 and in the early 1970s, two duty-free export zones were set up.<sup>30</sup>

This mere description of the reforms might have already raised doubts in the reader's mind about the possibility of describing the resulting trade regime as neutral or liberal. Yet before reaching any conclusion, one needs to examine the evidence supporting this claim. This appears to consist mainly of effective rates of protection (ERP) estimates, notably Kim and Westphal's (1982). The latter are shown in table 1, and it seems clear that the figures for manufacturing and 'all industries' back allegations that the trade regime had low nominal and effective rates of protection, and was trade neutral insofar as effective subsidies did not significantly favour either exports or domestic sales.<sup>31</sup>

<sup>28</sup> As of 1965, the main types of export credit available were: short term export credits via unlimited rediscounts by Bank of Korea; long term loans for investment on export production; credits for importers of raw materials and equipment for export industries. For details see Frank et al. (1975:49) and Hong (1979:57). Table A.21 shows that exports more than trebled their share of total domestic credit over the 1963-72 period.

<sup>29</sup> According to this system, exporters could issue letters of credit to local suppliers, who in turn could use them to benefit from all export incentives available.

<sup>30</sup> Table A.12 despite not including all subsidies, shows that they clearly increased after 1965. The performance of the export zones Masan (1970) and Iri (1972), despite all the incentive involved, was disappointing. As of 1980 they accounted for only 2.3% of total exports (BNDE, 1988a:46). See USITC (1985) for a description of the incentives.

<sup>31</sup> The low level of nominal and effective protection would be further confirmed by a comparison with other LDCs. For instance, as of 1969, Argentina's nominal and effective protection for manufacturing was 70 and 112%, respectively, whereas the effective subsidy was 110% (Balassa, 1982:36).

Although impressive, this evidence is misleading. A more careful examination of table 1 and its methodology, suggests a regime that was industry and trade biased, with anything but low protection. Looking first at the issue of industry bias, table 1 shows that sectors such as transport equipment, machinery, consumer durables and, to a certain extent, intermediate products II, had high rates of protection not only in comparison with other sectors of the industry, but also by Neoclassical standards.<sup>32</sup> This points to a bias towards capital-intensive sectors, suggesting that the promotion of infant industries or dynamic comparative advantages was not left to the market forces.

This last point is acknowledged by Kim and Westphal (1982:238) who reported the existence of significant incentives for selected IS industries, including indirect tax and tariff exemption on inputs and capital goods, preferential direct tax treatment and privileged access to subsidised credit. The government concern with IS is also revealed in the first two Five Year Plans (1962-71)<sup>33</sup> where the heavy industry, with the help of state enterprises,<sup>34</sup> was singled out for promotion. Although, as shown later, heavy industry targeting only entered full swing after 1973, its impact could already be felt during 1960-73. Table A.2 reveals a noticeable increase in the heavy industry's share of output and exports over the period.

<sup>32</sup> Balassa (1975: 376), e.g., suggests that in an outward-looking regime, the uniform level of protection should be no more than 10-15%, with protection for a very limited number of infant industries at a maximum of 30%.

<sup>33</sup> After fruitless endeavours by its predecessors, the practice of formal economic planning was eventually implemented by the military. Despite not being normative, the guidelines of these plans were taken very seriously by the private sector given the government's control over the economy. See Jones and Sakong (1980 chap. 3) and Hong (1979 chap. 3). During the second Five Year Plan, the government introduced a series of promotion laws for heavy industries (machinery, shipbuilding, iron and steel, electronic, and petrochemical) whereby specific tax-cum-subsidies were assigned to each industry. For sectoral case studies see, e.g., Amsden (1989) for shipbuilding and steel; Jones and Sakong (1980) for machinery; and Enos and Park (1988) for petrochemicals and machinery.

<sup>34</sup> The steel industry is a case in point. See Amsden (chap. 12). In 1972, state enterprises accounted for 9% of GDP (a figure similar to India's) with 35% of them in the manufacturing sector (Jones and Sakong, 1980:150)

Table 1: Korea's Nominal, Effective Protection (ERP) and Effective Subsidy (ES) Rates, 1968

Industry Group (ISIC)	Legal <sup>2</sup>	Nominal <sup>3</sup>	Effective Protection <sup>4</sup>			Effective Subsidy <sup>5</sup>		
	A	A	E	D	A	E	D	A
Primary Activities	34	16	-16	18	17	-3	22	21
Processed Foods	57	3	-3	-18	-17	2	-25	-23
Bever. and Tobacco	135	2	-2	-19	-19	15	-26	-24
Construc. Material	31	4	-5	-11	-11	6	-17	-16
Interm. Products I <sup>6</sup>	31	2	31	-25	-19	43	-30	-22
Interm. Products II <sup>6</sup>	53	19	0	26	24	17	20	19
Consumer Nondura.	68	9	-2	-11	-9	5	-21	-15
Consumer Durables	78	31	-5	64	51	2	38	31
Machinery	49	28	-13	44	43	5	31	31
Transport Equip.	62	54	-53	163	164	-23	159	159
Manufacturing	59	11	3	-1	-1	12	-9	-7
All Industries	49	13	0	11	10	9	10	10

1- D and E stand for domestic and export sales and A is the average between them. 2- 1968 Sales at world prices as weights. Includes regular and special tariffs. 3- Direct price comparison. Sales at world prices as weights. 4- Balassa method. 5- Effective subsidy rates are the percentage excess of the domestic-producer-price value added, adjusted for credit and direct tax subsidies over the world-price value added. Value added at world price as weights. 6- Intermediate products I and II correspond to intermediate products at lower and higher levels of fabrication, respectively.  
Source: Kim and Westphal (1982:230)

As for trade bias, despite the neutrality indicated by the aggregate figures, most heavy industries had effective subsidies favouring the domestic market, whereas in the rest of the industry they favoured exports. Even for manufacturing as a whole, effective subsidies were not well balanced, being biased towards export sales (table 1). As Findlay pointed out (Hong and Krause, 1981:31), there is no theoretical reason, from a neoclassical and static point of view, to believe that a trade bias, either in favour of exports or imports, is consistent with the free trade optimal allocation of resources.

Moreover, not only incentives were not neutral, but the industry's response was not always in accordance with them. As Kim and Westphal (1982:222) somewhat reluctantly admitted:

For a significant number of products, including some of Korea's major textile exports, the import price substantially exceeded the export price. Export prices may have been set below average production costs and thus may not represent world prices at which sustained supplies would be forthcoming to the domestic market.

These authors also found out that major export sectors (accounting for 27% of manufactured exports in 1968) had higher effective subsidy and higher than average nominal protection to domestic sales. They were quick to suggest that in these cases, exports were inefficiently produced and subsidised by sales in the domestic market. This, in turn, would have been made possible by price discrimination and by institutional mechanisms linking incentives for domestic sales to satisfactory export performance. If so, it is completely at odds with the view that Korea's export composition was determined by a passive response to international relative prices.<sup>35</sup>

Finally, apart from the well-known drawbacks of the ERP concept,<sup>36</sup> the decision to use direct price comparisons on the grounds of widespread tariff 'redundancy' and NTBs, seems to have led to a gross underestimation of both the level and impact of the import controls. Theoretically, the procedure taken seems correct. As of 1968, actual tariff collection was just 36.2% of its potential value (Suh, 1975:221). One has to be careful, though, not to write off tariffs as totally 'redundant'. As Luedde-Neurath (1986) pointed out, exemptions were granted on a highly selective basis, mainly for export and selected IS industries. Consumers and producers that catered to the domestic market did not benefit,

<sup>35</sup> Kuznets (1977) cites data for 1968 from the Korea Times, which states that the profit margin on exports was only 2.1% while on domestic sales it averaged 9.5%. There is no reference, however, to how these figures were calculated. For reference on non-profitable exports see also Jones and Sakong (1980, chap. 4), Amsden (1989, chap. 3) and Rhee and Pursell (1984, chap. 3).

<sup>36</sup> The use of protection (free trade) technical coefficients in a free trade (protection) context tends to over or underestimate ERPs depending on the elasticity of substitution between primary factors and inputs (the so-called *index number problem*). See Ramaswami and Srinivasan (1971).

and therefore had to face prohibitive tariffs in most sectors. This seems to be confirmed by the data available. In 1968, exemptions for export and selected IS industries accounted for 80% of the total, whereas commodities with prohibitive tariffs accounted for 70% of domestic sales of domestic production.<sup>37</sup>

There is also no doubt that NTBs were comprehensive. As of 1968, 60% of the manufactured imports and 42% of the importable items were subjected to NTBs (table A.14). At the sectoral level, only imports of raw material and food were relatively freely imported, whereas NTBs were particularly important in the consumer and intermediate goods sectors, which accounted for only 10 % of AA imports.<sup>38</sup>

Yet, in practical terms, given the shortcomings involved in direct price comparisons, the results seem to have been as inaccurate as those derived from legal tariffs would have been. First, following again Luedde-Neurath (1986), direct price comparisons in LDCs tend to underestimate the impact of protection, given the differences in quality and product specification. This is particularly relevant to Kim and Westphal's estimates, since 45% of the products involved had price below the international level. Although acknowledging that without effective market restrictions, these results could only be ascribed to quality and product specification differentials, they assumed zero nominal protection for most of these products.

Second, there was a number of factors in action during the period—e.g. government's direct control over key intermediate goods industries, constant monitoring of the private sector's

<sup>37</sup> Kim and Westphal (1982:221). Tariffs were considered prohibitive when imports accounted for less than 10% of domestic supply.

<sup>38</sup> The use of AA imports to measure the scope of NTBs tends to underestimate government control because even these imports were affected by instruments such as special laws ('welfare' and security checks), import-source diversification system and government procurement. See Kim, S.K. (1987) and Luedde-Neurath (1986).

prices, and fierce domestic competition—<sup>39</sup>that might have precluded local firm's from taking full pecuniary advantage of import controls (i.e. to fix prices at the international level plus tariffs or equivalents), even though they still took full advantage of other non-pecuniary benefits such as the elimination of competition from well-established foreign firms.

These shortcomings appear to be behind the paradox of low nominal and effective protection despite high selective tariffs and widespread NTBs. The evolution of Korea's import composition (table A.15) gives us a more realistic, if impressionistic, measure of the import controls impact. For instance, the fine share of consumer goods in 1969 (4.7%) smacks of a structure shaped not by international relative prices, but by stringent government controls.<sup>40</sup> It seems no coincidence that the import composition accurately reflects the structure of both tariffs (including exemptions) and NTBs, which virtually banned consumer goods imports, exempted raw materials, and had a more selective approach to capital and intermediate goods imports.

Taking all this into account, to equate Korea's move towards outward-orientation with the adoption of a neutral, low protection trade regime seems at best unsubstantiated. Accordingly, the same applies to explanations of Korea's manufacturing and export take-off based on this allegation. Moreover, even if the trade regime conformed with the Neoclassical description, supporters of this view would still have much explaining to do, since exports began to grow (1960) well before the fully fledged 'neutral' regime was in place (1967).<sup>41</sup>

<sup>39</sup>The government controlled the production of coal, iron, steel, fertiliser and oil refining. See Nam (1984: 203). The existence of constant monitoring of the private sector's prices is mentioned, e.g. by Jung (1989:13) and Amsden (1989:17).

<sup>40</sup>In 1972, share of consumer goods (not including food and beverage) in total imports of the U.S., West Germany, Brazil and Korea were 15.9, 14.2, 4.2 and 2.9%, respectively (UN, various years).

<sup>41</sup>See Table A.8. This view is supported even by Frank et al. (1975:54) who state that: "The most that can be said is that liberalisation probably laid the groundwork for continued rapid growth of exports over the following decade and

cont.

If the rejection of the Neoclassical hypothesis does not constitute in itself an alternative explanation of the mechanics of new trade regime and of its role in the 1960s boom, it gives us a stepping stone. That is, the unmistakably selectivity of the new regime. As suggested by the description of the reforms, this selectivity was exercised through complex lines, at both market and industry levels. The industry's market was segmented into export and domestic sales. The former's regime was made liberal and industry neutral. The latter's, in turn, was made highly protectionist except for the upstream industries, whose protection was selective (in part an unavoidable consequence of the 'free trade' regime enjoyed by exporters) and accompanied by fiscal exemptions and long-term subsidised credit.

Despite pointing to opposing directions, the net effect of these incentives clearly favoured export-oriented growth. This, however, cannot be perceived by looking at cross-border relative prices alone, because there were other powerful forces dictating resource allocation (often, as shown by Kim and Westphal, in manifest conflict with price signals). It was these forces that reconciled the contradictory incentives and put them to good work. They emerged, first, from the government's decision to make protection, credit (thanks to its control over the financial market, examined later), and other non-pecuniary incentives, conditional on export performance.<sup>42</sup> And second, from a deliberate policy of conglomeration (also taken up later). The first policy, made exports the main target of the private sector regardless of the cross-border relative prices, and the second, by creating conditions for price discrimination, made exports

that without those efforts, such phenomenally rapid export growth could not have continued".

<sup>42</sup>The non-pecuniary incentives derived mainly from the government's deliberate politicisation of the export activity. Major exporters were celebrated as national heroes and given special awards in the so-called *Export Day* (November 30). See Rhee and Pursell (1984: 16).

profitable even when the international price was below the average costs.<sup>43</sup>

The overall result was that Korea managed to boost its static comparative advantages beyond 'free-trade' limits, without giving up the policies that would bring dynamic benefits. On the static side, despite the already noted considerable development of the 1950s, the light industry in the early 1960s was still far from the international best practice. The combination of protection, conglomeration and subsidies, all under the stick of export performance, not only provided the industry with a safe haven for the catching-up, but also with the financial means and incentives (monopolistic profits at home plus subsidies) to promptly offer competitive prices abroad. If this policy makes little sense from a static viewpoint, in the long term it has allowed the industry to reap dynamic economies of scale and to reduce the productivity gap.<sup>44</sup>

On the dynamic side, the selective approach to the heavy industry gave Korea the means to exploit dynamic comparative advantages and to respond quickly to changes in factor prices, without provoking any significant static misallocation of resources, or placing a too heavy burden in the country's limited capital and human capital resources. Moreover, it did not block the downstream industries' access to embodied technology and inputs at world prices. Korea, as will be shown, would fully benefit from this approach in the following decade.

<sup>43</sup> As stated in the introduction, price discrimination involves two pre-conditions. First that the industry is imperfectly competitive and secondly that the markets are segmented. There seems to be no doubt that the Korean government created these pre-conditions by protecting the domestic market and by stimulating conglomeration through industry licensing and credit rationing.

<sup>44</sup> The cotton textile industry is a case in point. Whereas in 1965 labour productivity was 65% below Japan's, by 1972 the gap had been reduced to 48% (Y.B. Kim, 1980:280).

*Industrial organisation policies*

As noted earlier, there are two other government interventions in the product market, which, in conjunction with the trade regime, deeply affected the industrial structure, and played a key role in Korea's industrial success: the policies for conglomeration and foreign direct investment (FDI). Beginning with the former, there is enough evidence to show that the so-called 'big business' policy was not something that began with the 'HCI push' of the 1970s, as suggested by most of the literature, but with the 'neutral' regime of the 1960s. The main instruments of this policy appear to have been credit rationing, investment licensing, import and FDI protection.

The government control over the financial sector (examined later) seems to have been deliberately used to increase concentration both at the industry and aggregate level. Hard facts are scarce, but this appears to be the only reasonable explanation of the extraordinary growth of the so-called *jaebols* (Korean word for conglomerates), and of their peculiar financial structure. For instance, table 2 shows that over 1965-70, the share of small and medium firms (SMF) in total exports increased but remained quite marginal, and their shares of manufacturing output and domestic credit presented a marked decline, particularly the former. Moreover, in 1972, i.e. even before the start of the 'HCI push' (widely believed to have favoured large firms), the SMFs had an access-to-borrowing ratio (27%) well below that of the large firms (46%).<sup>45</sup>

Even though these figures already point to a 'big business' policy, they underestimate its impact since small subsidiaries of the *jaebols* are included among the SMFs. The extent of this underestimation can be gauged by the fact in 1970 'competitive' markets amounted to only 36% of total shipments (table A.16). Another strong indication of a credit bias towards the *jaebols* lies in the manufacturing debt-equity ratios. Over 1965-71, they rose

<sup>45</sup> Cho and Cole (1986:26). Access-to-borrowing ratio is the amount of total bank and foreign loans divided by total assets.

from 104 to 345%, a level significantly higher than that of the U.S. but similar to Japan's (table A.25). Unlike the latter, though, the banks in Korea were in the government's hands and not in those of the conglomerates.<sup>46</sup>

The link between this high debt-ratios and the rise of the *jaebols* becomes amazingly clear in Jones and Sakong's (1980:273) account of the conglomerates' 'growth model':

One privately held company 'luckily' gets governmental approval for an industrial project. It will be typically financed by 1/5 equity and 4/5 foreign and domestic loans. The private firm may then grow rapidly if the project becomes successful. The firm then start a new line of business with the profit accumulated from the first venture. Of course once again the firm will not usually put up much equity but will rely heavily on external debt.

As to investment licensing, a proper analysis of its role is virtually impossible, first because its existence was never officially acknowledged by the government, and second because it

Table 2: Share of Small and Medium Firms in Exports, Output and Domestic Credit, 1965-84 (%)

shares of	1965	1970	1975	1980	1984
Exports	23	32.2	34.5	32.1	25.4
Mnf. Output	56.3	27.5	30.6	29.5	30.5
Dom. Credit	32.6*	30.3	27.5	23.5**	n.a.

Note: Small and medium firm is defined as a firm with fewer than 300 employees. \*1966, \*\*1979. Source: Michell (1988:84) for exports and manufactured output and Jones (1987:154) for credit. Both author use data from the Small and Medium Business (SMB) Federation and SMB Industry Promotion Corporation.

was hardly covered by the literature. It was very briefly mentioned by Kim, S. (1991:66), who maintained that over 1965-

<sup>46</sup> For a comparison between Korea's *jaebol* and Japanese *zaibatsu* see Hattori (1989). For a comprehensive analysis of the *jaebols* see, *inter alia*, Jones and Sakong (1980), Jones (1987) and Amsden (1989).

67, despite not being required to be formally licensed, investments had to be registered at the competent ministry, risking rejection or delay for various reasons.<sup>47</sup> Formally or not, though, the truth of the matter is that during the 'neutral' period, the government had enough power to 'kill' any business initiative by denying, for instance, access to credit, imports or technology licenses (see later). The rapid increase in concentration suggests that this power was probably used.

In addition, any policy towards increasing concentration and forming local conglomerates would not have been effective without a protected domestic market and a restrictive FDI policy. The existence of the former was already discussed in the previous section, while the latter is going to be taken up next. First, though, we have to consider the benefits that a deliberate conglomeration policy has brought.

The advantages of size and conglomeration are controversial, and the literature on industrial organisation emphasises the deleterious effects of monopolistic market structures on production, income and efficiency. Most of this discussion, though, assumes well functioning factor markets, constant returns, closed economy and is done within a static context. In the dynamic and imperfect world of 1960s Korea, it is of limited use. In fact, the rise of the *jaebol* seems to have brought quite a few benefits, even allowing for the fact the light industry's scale economies at the plant level were limited (the most obvious benefit of size).

To begin with, given the scarcity of skilled labour and the amount of time involved in developing it, conglomeration allowed Korea to use more effectively its limited resources and therefore enter rapidly into a large number of industries. As Scherer and Ross (1990:122) pointed out, large diversified firms

<sup>47</sup> Jung (1989:12), was equally brief, but more explicit stating that "the Korean government is heavily involved in the determination of the firms that can enter certain sectors of the economy. In many industries, private firms have to get approval from the government to start a new business."

can 'economise' on skilled services by having a common central pool of managers and technicians whose skills are not product specific.<sup>48</sup>

Second, with respect to exports, conglomeration not only led to the economies of scope in marketing and distribution skills mentioned above (see Keesing and Lall, 1988), but also to scale economies that also characterises these activities and the importing of the necessary inputs.

Third, conglomeration gave local firms the opportunity to develop internal capital markets, whose importance cannot be underestimated given the then prevailing weakness of Korea's capital market. This seems to have been particularly instrumental in increasing the firms' capacity —via cross-subsidisation and risk sharing— to sustain long period of losses associated with entry in infant industries.

Fourth, as noted earlier, the formation of monopolistic markets at home coupled with import protection, opened the way to price-discrimination, which, in turn, allowed firms to offer competitive prices abroad at the early stages of the learning curve.

Finally, the formation of local conglomerates made the transition to the heavy industry (see next section) smoother since local firms had the size and financial leverage necessary: (a) To take advantage of the scale economies at plant and firm level (e.g. finance, marketing, R&D); (b) To face the long-term maturation typical of investments in this industry; and therefore (c) To fend off the imperfect competition of well-established foreign firms, which had the first-mover advantages of 'good-will' (Corden, 1974) and static and dynamic economies of scale.

<sup>48</sup> For instance, specialists on finance, feasibility studies, training and recruitment, technology contracts, civil construction, equipment procurement and export marketing, to name but a few. For a detailed discussion on how the *Jaebols* took advantages of these economies of scope see Amsden (1989:125 ff.).

The drawbacks of monopolistic structures mentioned above appears to have been checked by the government's control over the *Jaebols'* lifelines, i.e. credit and protection, whose maintenance was made conditional on export performance.

Turning now to the FDI policy, Korea managed to keep foreign firms at bay even though the letter of the law was indicating the contrary. At first sight the 1965-72 foreign capital legislation looks quite liberal.<sup>49</sup> Based on the 1960 Foreign Capital Inducement Law (FCIL), it granted lavish tax incentives for technology licensing and FDI.<sup>50</sup> Until 1965, there was some restrictions on foreign ownership (at least 25% of the capital had to owned by local investors) and profit repatriation (maximum 20% of the invested capital), but they were completely removed in 1966. In 1970 and 1972, the government even established, as noted before, two free export zones where FDI incentives were even more generous.

The liberal impression, however, tends to fade away when FDI data is examined.<sup>51</sup> Table A.17 shows that loans were the bulk of foreign capital flows during 1966-72, and that in terms of FDI, Korea was at the bottom of East Asian league by any indicator. The comparison with Latin American NICs is even more striking. During 1967-71, Korea's FDI share of net capital inflows was 3.7%, while Brazil's 33.8% and Mexico's 21.4%.<sup>52</sup>

These figures reflect the foreign firms' marginal share of exports and output. In 1971, they accounted for only 6.2% of total exports, and even though data for output is only available for 1974 (15.4 %), that year's figure can be taken as evidence of how

<sup>49</sup> See, for instance, Frank et al. (1975) and Koo (1982,1985).

<sup>50</sup> Full or partial exemption from income tax was granted on income accruing from the provision of technical services, and FDIs enjoyed a full exemption from individual or corporation income tax for the first three years, a 50 % reduction in tax for the next five years, a full exemption from customs duties on imported capital goods and no capital gains tax (Frank et al. 1975:104).

<sup>51</sup> The policy on technology licensing will be examined in the section concerning intervention in the factor markets.

<sup>52</sup> Westphal et al (1985) and Westphal et al. (1979:372).

limited their share was in the previous decade, since the flow of FDI only became substantial (by Korea standards) after 1972 (table 3 and chart A.1). The foreign firms' role seems even more limited when we allow for the fact that up to 1972 only 36.1% of the FDIs had been majority or wholly owned by foreigners (table A.19).

**Table 3: Share of Foreign Firms in Exports and Manufacturing Output in Korea 1971-86 (%)**

Share of	1971	1973	1975	1978	1984	1986
Exports	6.2	10.8	17.6	24.6**	25	18.3
Mnf. Output	n.a.	15.4*	17.0	19.3	18.3	20.2

\* 1974 \*\* manufacturing exports. Source: Westphal et al. (1979:372) for 1971-75, Koo (1982:200) for 1978 and Bark (1989:23) for 1984-86.

Moreover, evidence on FDI sectoral allocation suggests that the restrictions were sector specific. As Koo (1985:184) put it,

Throughout the sixties and seventies, very few DFI entrants were allowed to compete with domestic firms in the domestic consumer goods market. Relatively small investments were made in areas like food processing, pharmaceuticals, cosmetics and distribution services. With few exceptions, those foreign producers of consumer goods that were allowed entrance were asked to export their entire product or to substitute for imports.

This appears to square with the fact that FDI tended to be concentrated either on the intermediate goods sector (fertilisers, petrochemical) or on the leading export, labour-intensive industries such as electronics and textiles (table A.20). Likewise, data for 1974 shows that the foreign firms' export propensity (35.5%) was significantly higher than domestic firms' (21.0%).<sup>53</sup>

The assessment of the impact this restrictive policy on manufacturing and export performance is far from straightforward, and like the general discussion on FDI costs and

<sup>53</sup> Koo (1985:200)

benefits, it is bound to be controversial.<sup>54</sup> Yet, one cannot help noticing that the FDI policy was remarkably consistent with the government's intervention in the other areas of the product and factor markets. It avoided the Latin American incongruity of offering local infant firms import protection, while at the same time inviting world class producers in, with its damaging effects on the former's growth and technological capabilities. This, in turn, had at least two important consequences. It helped to steer the country away from a truncated process of technological development, which, as with TNC affiliates in LDCs, was not likely to go beyond the adaptive and duplicative stages (Lall, 1992); and, as noted earlier, it opened the way for the development of local conglomerates, whose benefits were already discussed above.

Moreover, it seems reasonable to assume that the TNCs' limited share of Korea's market and exports, also made resource allocation more responsive to the government's complex system of incentives, since local firms were not subjected to a global strategy devised elsewhere, and had their main source of capital controlled by the government.

Intervention in the factor markets.

*The financial market.*

To claim that Korea's manufacturing and export success during the 1960s was the result of 'neutral' incentives in the product markets, one has to implicitly assume that financial markets were complete, competitive and 'undistorted' by government intervention. That is not, however, what the evidence suggest. Not only the capital market was virtually non-existent in the early 1960s<sup>55</sup>, but also the government did not hesitate to intervene to overcome this and other related market failures.

<sup>54</sup> For recent surveys of the literature, see Weiss (1988) and Helleiner (1989).

<sup>55</sup> In 1963, the stock market value as a percentage of GNP was a meagre 2% (Cole and Park, 1983:98).



Following Stiglitz (1989), financial markets even in developed countries are bound to be imperfect due to informational imperfections. In LDCs, though, these imperfections tend to be severely aggravated

Because the process of change itself leads to greater informational problems; but more importantly, the institutional framework for dealing with these capital imperfections are probably less effective because of the small scale of the firms and because the institutions for collecting, evaluating and disseminating information are less likely to be developed. (ibid., p.200)

This greater uncertainty leads, first, to a strong bias towards short-term assets, and consequently to a shortage of long-term financing. And second, to a market interest rate that tends to remain above the opportunity cost or its socially optimum level.

With inadequate and expensive finance, firms have to rely on internal earnings for capacity expansion, which not only compromises their growth and competitiveness, but also increases their risk in an already risky environment. Needless to say that in this scenario expected private returns tend to stay below the social desirable, particularly for investments and activities that are riskier anywhere in the world, but that are likely to bring higher pecuniary and non-pecuniary rewards, such as exports and investments in technology intensive industries.

Whereas one cannot say that the Korean government was aware of these problems, its actions were very effective in overcoming them, however second or third-best they were. Intervention in the financial markets began in 1961, with the nationalisation of commercial banks on the grounds that they were 'illegally hoarded property'.<sup>55</sup> This move virtually gave the

<sup>55</sup> Cole and Park (1983:57). The financial system consisted of a central bank (Bank of Korea); deposit money banks (DMB) including commercial and specialised banks (among the latter, development banks like the Korea

cont.

government total control of loanable funds. Table 4 shows that if one adds bank to foreign loans (the latter's overwhelming majority involved a governmental repayment guarantee)<sup>56</sup> the government's control amounted, in average, to 92% of the total credit.<sup>57</sup>

**Table 4: Flow of loans in Korea: 1965-72 (%)**

years	BOK loans	Bank loans <sup>1</sup>	Gov't loans	Foreign loans	Curb loans	total	Total gov't. controlled <sup>2</sup>
1965	19	49	0	15	17	100	83
1966	6	44	0	48	2	100	98
1967	1	57	0	34	8	100	92
1968	2	51	0	35	12	100	88
1969	1	60	0	32	7	100	93
1970	0	52	2	32	15	100	86
1971	0	64	1	27	8	100	92
1972	0	82	0	21	-3	100	103

<sup>1</sup>Includes insurance and trust loans. <sup>2</sup>All less curb market loans. The curb market consists of credit transactions carried out outside the system of regulated financial institutions, not subject to control of either the monetary or the tax authorities (see Cole and Park 1983). Source: Data from Hong (1979:164).

Development Bank, set up in 1954 to supply long term industrial credit), non-banking financial institutions (NBFIs) and securities markets. The only institutions that remained in private hands were the local banks, created in 1967, and some of the NBFIs whose shares of total deposits and loans until 1980 were too marginal to have had any importance. See ibid. for details.

<sup>56</sup> At first, all the guarantees were issued by the Korean Development Bank and by the Bank of Korea, and had to be formally approved by the National Assembly. From 1966, though, commercial banks began to issue repayment guarantees (according to government approval) without the need for approval by the National Assembly. See Hong (1979:143). Foreign firms were not allowed to officially borrow money abroad (Park, 1985:290).

<sup>57</sup> These figures tend to overestimate government control insofar as they include local and foreign banks, and NBFIs that were private owned. Their share of the total loans during the period, though, seem to have been insignificant. The local banks had an average of 3.6% of the bank deposits during 1967-72, while the same figure for the foreign banks was 0.6%. As to NBFIs, the volume of indirect securities issued in late 1960s was no more than 15% of M<sub>2</sub> (Cole and Park, 1983:68 ff.).

Despite the advice of people with unsuspected neoclassical credentials like Gurley, Patrick and Shaw<sup>58</sup>, state ownership of the financial sector was not combined with the textbook solution of market-led interest rates and credit allocation (which were in any event unlikely to solve the problems mentioned above). Instead, a rather heterodox approach was adopted. One the one hand, a misguided negative real interest policy, which until 1965 had largely prevailed (with the usual deleterious effects on financial intermediation), was dropped.<sup>59</sup> On the other hand, a discretionary loan policy coupled with multiple, subsidised interest rates was put in place (table A.21).

The loan allocation policy was in principle based on a 'positive' list that ranked industries and activities according to the government's priorities.<sup>60</sup> However, since these guidelines were usually far too general and comprehensive, and interest rates controlled, financial institutions could not meet the demand for credit. The government, therefore, had to step in to narrow down the number of sectors, activities or even firms, it was willing to favour. This was generally done by earmarking funds, by allocating them according to a financial and investment plan, or by 'direct guidance'. During 1963-73, 50 to 70% of the domestic credit was officially classified as 'policy loans' and therefore allocated to targeted activities and sectors (table A.13). This distinction between policy and non-policy loans, though, seems artificial since most of the analysts believe the latter were also subjected to 'direct guidance'.<sup>61</sup>

<sup>58</sup> Gurley, J., Shaw, E. and Patrick, H. (1964) "Financial Structure of Korea". Study commissioned by the U.S. Aid Program on the occasion of the 1965 monetary reform, as quoted by Cole and Park (1983:201).

<sup>59</sup> The financial-asset-to-GNP ratio fell from 1.0% to 0.8% during 1962-64. After 1965 it began to grow fast reaching 2.1% in 1972. (Cole and Park, 1983:26).

<sup>60</sup> For instance, the 1962 credit guidelines required financial institutions to give special preference on loans to export and IS activities, together with business that produced daily basic necessities and contributed significantly to the growth or employment. 'Nonessential' consumption goods, luxury goods, entertainment and restaurant services were virtually ruled out as borrowers (Hong, 1979:112).

<sup>61</sup> See Hong (1979: 163), Cole and Park (1983:173) and Hong and Park (1986:167).

This overwhelming and discretionary control over credit was apparently used in the pursuance of four major aims: To boost manufacturing investment, to promote externality-prone activities such as exports, to foster dynamic comparative advantages in selected infant industries, and to promote conglomerates. With respect to manufacturing investment, in a bid to increase expected private returns, interest rates were held well below the opportunity cost (table A.13), and both commercial and development banks were forced to concentrate their resources on long term loans.<sup>62</sup> Short-term, working capital credit was supposed to come from the firm's internal earnings or from the unofficial curb market. Moreover, commercial banks, with a few exceptions, were not allowed to provide consumer credit.<sup>63</sup>

Exports, as noted earlier, were the government's top priority, and not only benefited from unlimited short-term credit—coupled with a series of other preferential loans—but also had negative real interest rates over the whole period (table A.13). Neoclassicals like to emphasise that the non-discretionary nature of the short-term export credit is an evidence of market-led resource allocation. This is, however, a mere drop of neutrality in an ocean of selectivity, since the export share of domestic credit was never more than 10% (table A.21) and the short-term, non-discretionary part of it was even more diminished.<sup>64</sup>

The infant heavy industries, which under a deregulated financial market and free trade regime were not likely to see much of the banks' money, also benefited (selectively) from

<sup>62</sup> Hong (1979:204) estimated that the interest subsidy was around 40% of gross fixed capital formation during 1962-66, and about 75% during 1967-71. The long-term loans assumed the form of continuous roll-over of short-term loans. See Cole and Park (1983: chap. 5) and Amsden and Euh (1990:16)

<sup>63</sup> See Hong (1979:116).

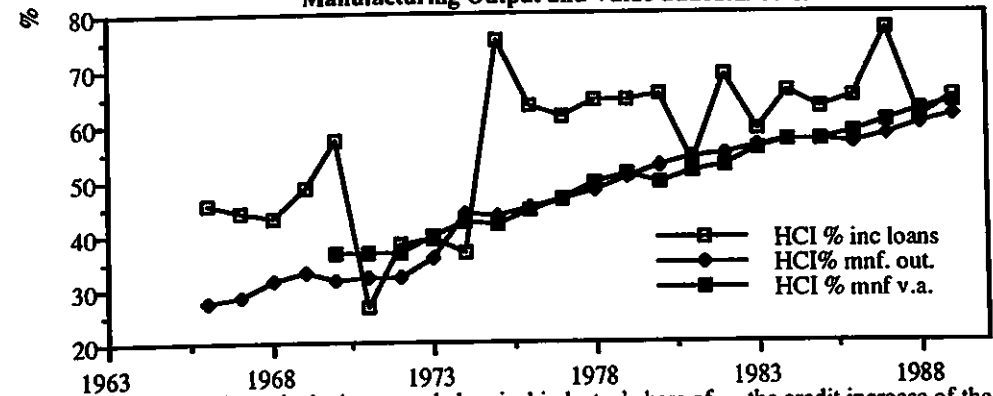
<sup>64</sup> The share of the latter in total export loans over 1970-72 was in average 43% (Hong and Park, 1986:165). Long term export loans were far from being automatic and had been approved not only by the banks but also by the 'competent minister' (Hong, 1979:124).

subsidised credit, particularly from the Korea Development Bank's equipment loans. Data on overall credit allocation shows that even though the light industry received the most,<sup>65</sup> more credit went to the heavy industry than would be justified by Korea's factor endowment. As illustrated by chart 1 below, the gap between the heavy industry's share of output or value added and its share of incremental credit allocation over the 1960s, was comparable to that of the 'HCI push' (1973-79). As shown in the next section, the World Bank (1987:41) drew attention to the latter gap, as evidence of significant 'distortions' in credit allocation (as opposed to a presumably 'neutral' 1960s).

Finally, the fact that credit allocation favoured large firms was already discussed in the previous section. We could just add that, beyond the benefits of intra-firm capital markets, by promoting conglomeration, the government also forced the banking system to perform the role that capital markets played in countries like England and U.S., centralising capital in the hands of the schumpeterian entrepreneurs, while at the same time divesting them of the part of the risk involved in manufacturing investment. In other words, the banks (and ultimately the government) played the part of the shareholders, with the advantage that they were not seeking short-term profits. As noted earlier, Zysman (1983) called this type of arrangement, a 'credit-based financial system with administered prices' as opposed to the liberal capital-market based model.

<sup>65</sup> Yearly average of 54% of total manufacturing credit over 1966-72 (BOKa).

Chart 1: HCI's Share of Incremental Credit Allocation, Manufacturing Output and Value-added:1966-89



Note: 1- HCI% inc. loans is the heavy and chemical industry' share of the credit increase of the commercial and development banks. From 1984, it includes NBFi and Special banks' loans.  
 2-Share of manufacturing output is in current prices and share of value-added is in 1985 prices.  
 Source : BOK (a), EPB (a) and Suh (1975:85)

*Human capital and S&T policies*

Apart from the financial sector, there are two other government's moves in the factor markets that are also overlooked by the 'neutral incentives' explanation, and cannot be left outside any attempt to understand Korea's success in the period and beyond. The first concerns the strong commitment to education. Even though this is generally accepted as an area where, given the externalities involved, government intervention is needed (so-called functional interventions), little attention is usually given to its role in supporting industrialization. A well-educated work-force is not a sufficient condition for a successful industrialization, but as Lall (1991b:28, vol.II) put it "it provides the absorptive base on which industrial skills can be created."

Despite inheriting a population whose educational attainments in 1960 was already above the per capita GNP norm,<sup>67</sup> the military gave first priority to education, focusing on quantitative and qualitative improvements on the technical and primary levels. Even though not everything went as planned, with quantity apparently prevailing over quality,<sup>68</sup> by the early 1970s the contrast between Korea's educational base and that of, e.g., the Latin American NICs was stark. For instance, Korea's illiteracy rate in 1970 had been reduced to 10.6% and the secondary enrolment ratio almost doubled to 41.3% (table A.1). In Brazil, the same figures for the same year were 39.4% and 26%, respectively (UNESCO).

Heavy investment in the 'absorptive base' was accompanied by decisive intervention in the creation of industrial skills or technological capability. As authors such as Lall (1992) and Pack and Westphal (1986) pointed out, even though indigenous technological effort plays a central role in the acquisition of technological capabilities, its existence is far from assured by market forces alone. Very briefly, this arises from two basic interrelated problems. First, because of market failures related to (a) the risk of 'unappropriability' of technology efforts, (b) the 'public goods' nature of some of the technology effort requirements (e.g. S&T infrastructure), (c) reciprocal pecuniary externalities and (d) R&D lumpiness and scale economies.<sup>69</sup>

Second, because the social costs of the two other major forms of acquiring technological capability, i.e. FDI and technology licensing, tend to be heavily underestimated by market prices. Advantages such as reduced risk and quick results, usually overshadow short and long-term drawbacks stemming, *inter alia*, from the aforementioned affiliates' truncated technology

<sup>67</sup> Harbison, F. H. et al. (1970) *Quantitative Analyses of Modernisation and Development*. Princeton University, Princeton. As quoted in Amsden (1989:217)

<sup>68</sup> McGinn et al. (1980:36 ff.), e.g., speak of larger class sizes, of the failure of vocational education to compete against the academic side, and of the lack of emphasis on science and technology. See also Amsden (1989, chap 9).

<sup>69</sup> See Lall (1991b, 1992), Pack and Westphal (1986) and Scherer and Ross (1990, Chap. 17)

capabilities, from the rents involved in the information-imperfect technology market, and from export and other restrictions facing licensees and affiliates.

Again, as if perfectly aware of these problems, the Korean government took measures that fostered investment in technological effort. That is, it restricted FDI and technology licensing; promoted other less costly and more complementary forms of technology transfer, e.g. capital goods imports and turn-key plants; fostered conglomerates capable of meeting the R&D financial requirements, of hedging R&D risk via diversification and of benefiting from R&D scale economies; and invested in R&D and in the S&T infrastructure.

As FDI and conglomeration policies were already dealt with, let us look at the other measures. In the case of technology licensing, after a brief and costly period of *laissez-faire*,<sup>70</sup> it was formally restricted in 1969. The new regulation established that all technology contracts had to be approved by the Economic Planning Board, had a 3% royalty ceiling and could only last for a maximum three years. In addition, it banned clauses involving, e.g., export restrictions or input procurement (Kim and Lee, 1990:88). The impact of this policy can be gauged by a comparison of Korea's data on technology licensing with those of other NICs. For instance, Westphal et al.'s (1985:190) estimates for 1970-71, put Korea's payments for disembodied technology at 0.04% of GNP, and Brazil's at 0.20%. On the other hand, thanks to the selective protection to the heavy industry, Korea had in the early 1970s one of the NICs' highest ratio of capital goods imports to investment (20%) (*ibid.*, p. 187).

As to investments in S&T and R&D, the first relevant moves seem to have been made in the second half of the 1960s, with the establishment of the Korea Institute of Science and Technology

<sup>70</sup> As Luedde-Neurath (1986:57) pointed out, Korea had some nasty experiences with technology licensing in the early 1960s, notably with cosmetic and pharmaceuticals. "The contracts were aimed essentially at obtaining the foreign trademark for use in the domestic market, and more importantly involved little more than simple repackaging of semi-finished products by the Korean partner".

(KIST) in 1966, the Ministry for Science and Technology (MOST) in 1967 and the Korea Advanced Institute of Science (KAIS) in 1971. The first institution was aimed at industry related applied research, the second was supposed to co-ordinate the S&T policy, and the third had the task of supplying highly qualified scientists.<sup>71</sup> This institutional build-up was accompanied by a gradual increase of R&D outlays, funded primarily by the government (table A.22). Given the light industry's weight during the period, the bulk of R&D outlays and institutional support were related to problems arising from the adaptation and use of imported embodied technology. Apart from this more practical and immediate benefit, these measures set the institutional and human capital stage for a decisive move into the technology-intensive heavy industries, whose advisability in the early 1970s was being suggested by a clear change in factor prices.<sup>72</sup>

### Summing up

Trying to summarise what has been said so far about Korea's 1960-72 policy regime, it seems clear that it was not market, industry or firm neutral, nor had low levels of protection for the domestic market. On the other hand, it appears evident as well that it allowed Korea to benefit from the advantages of an open economy (e.g. better resource allocation, scale and specialization economies, and access to frontier technology), without having to face the drawbacks of a free-trade, hands off regime (i.e. inability to fully exploit dynamic comparative advantages due to market failures). How could it be?

It seems to have been the result of a co-ordinated government action in the product and factor markets. A selective trade regime was set up, virtually segmenting export and domestic markets. The former was made liberal and industry neutral, while the second, protectionist and selective. This arrangement allowed exporters free access to producer goods at world prices, while

offering the light industries and selected sectors of the heavy industry an exclusive domestic market where to reap static and dynamic economies. This, however, could not have worked without interventions in other areas of the product and factor markets, which not only reconciled the regime's contradictory incentives but also made sure that the local firms' response would be optimised.

That is, conglomeration gave local firms access to the economies of scope and scale particularly necessary to exploit dynamic advantages in the heavy industry, and set the conditions for price discrimination, which boosted static advantages. The FDI policy was instrumental in at least three ways: in preventing TNCs from taking advantage of the protection at the expense of the infant local firms; in precluding a truncated technological development; and in assuring a prompt private sector's response to incentives. In the factor market, the discretionary credit policy was used to: reconcile the contradictory incentives of the product market; to boost manufacturing investment via subsidised interest rates and long-term financing; to forge the aforementioned local conglomerates; and to increase the expect private returns of externality prone activities, and infant industries. Finally, the policies towards human capital and S&T, assured that the process of acquiring technological capabilities would not be hampered by a poor stock of human capital, or by local-firms' under-investment in indigenous technological effort.

### **III-The heavy and chemical industry (HCI) drive (1973-79).**

The 1973-79 period is usually portrayed in the trade and development literature as the 'dark ages' of Korea's policy regime. The essence of the argument is that Korea, after seeing the light in the previous decade, inexplicably abandoned the outward-looking, hands-off strategy, to build its HCI. The argument goes on, saying that, fortunately, after having paid a *heavy price* in terms of misallocation of resources and (export) growth, Korea

<sup>71</sup> See Lee et al. (1991) for details.

<sup>72</sup> See below. The number of scientists and engineers increased four fold over 1960-70 Kim, L. (1989:3).

abandoned, in the early 1980s, this 'irrational' strategy and restored the quasi-free-trade regime.<sup>73</sup> Despite being dominant, this interpretation seems to be quite misleading. Even though the mid-1970s really seems to have marked a significant adjustment in the policy regime, its basic structure and orientation do not appear to have been altered. Secondly, even though there is evidence of misallocation of resources, the balance between cost and benefits does not seem to favour the former.

The first signs of adjustments in the regime came out with the third Five-Year Plan (1972-76), which unlike its predecessors, set specific investment and export targets for each of the selected HCIs.<sup>74</sup> The decision to target these industries is often explained on both economic and political grounds.<sup>75</sup> The economic justifications would have been, first, worries with the ever growing trade deficit —aggravated by the first oil shock— (table A.8) thought to be the result of the 'shallowness' of the industrial structure; and second the perception that Korea's comparative advantages were changing and that the adjustment to these changes would not be secured by market forces.

In fact, although exports have grown faster than imports (at 41.2% p.a. over 1960-72 against 23.0% for imports), it was not enough to prevent the worsening of the trade balance due to the exports' very small initial base. The minus side of giving exporters access to inputs and capital goods at international prices, turned out to be an ever declining net foreign exchange earnings per dollar of export, reflecting not only Korea's poor natural resource endowment but also the size of the capital and intermediary goods industry.<sup>76</sup>

The shift in comparative advantage was being signalled by a rapid growth in labour costs (table 5) *vis-à-vis* the so-called second tier NICs. A trend that was being compounded by rising protectionism in the developed countries towards labour-intensive goods.<sup>77</sup> The export prospects of HCI products, however, were perceived as being brighter not only because of the changes in the factor prices but also due to an allegedly Japanese decision to move way from pollution-prone and natural-resource intensive industries (Enos and Park 1988:34).

Table 5: Growth Rates in Labour Productivity, Wages and Unit Labour Costs in Manufacturing, 1965-1984.

	1965-73*	1974	1975	1976	1977	1978	1979	1980	1982	1984
Wages nominal	21.6	35.3	27.0	34.7	33.8	34.3	28.6	22.7	14.7	8.1
real <sup>2</sup>	9.8	8.9	1.3	16.8	21.7	17.3	8.8	-4.6	7.1	5.7
Lab. productivity	13.0	7.0	7.5	7.0	10.9	12.0	15.8	10.6	7.8	10.5
Unit lab. costs <sup>3</sup>	7.7	26.0	17.9	26.4	20.7	19.8	10.9	10.9	6.4	-2.2
Real unit labour costs <sup>4</sup>	-2.8	1.8	-5.7	9.1	9.7	4.7	-6.0	-14.0	-0.6	-4.3

\* Arithmetic average. <sup>2</sup> Nominal minus consumer price index. <sup>3</sup> Rate of change of nominal wage index/labour productivity index. <sup>4</sup> Rate of change of the real wage index adjusted by the rate of change of the labour productivity index. Source: Data for 1965-73 from Amsden (1989:201) and for the rest of the period EPB (a).

As to the political motivation, it would have stemmed from apprehensions about national security. The Nixon administration decision to reduce U.S. ground forces stationed in Korea and the opening of US relations with China would have persuaded the government to build its own defence industries.<sup>78</sup>

a more refined measure based on input-output data, estimated that the direct and indirect import content of Korean exports increased from 15.6% to 25.5% during 1963-73.

<sup>77</sup> In 1973, for instance, Korea introduced 'voluntary' export restraints on textile exports to the U.S. and in 1974, restrictions were extended world-wide with the signing of the Multi-Fiber Agreement. See Jung-ho (1990:20).

<sup>78</sup> The chairman of the Planning Council of the HCI Promotion Committee, in an interview with Jung-ho (1990:19), stated that defence needs and economic considerations were given weights of 20 and 80%, respectively.

<sup>73</sup> See, e.g., World Bank (1987, 1989:102), Balassa (1985) and Jung-ho (1990).

<sup>74</sup> The third five year plan set two specific targets to the HCI: to increase the HCI share of GNP from 35.2 to 51% over 1971-81, and to increase the HCI share of exports from 19% to 60% over the same period. Steel, chemicals, non-ferrous metals, machinery, automobile, shipbuilding and the electrical-electronic industry were listed as key industries. (Kim, J.H., 1990:4)

<sup>75</sup> See Jung-ho (1990), Kim, J.H. (1990) and World Bank (1987:38, vol. 1).

<sup>76</sup> The import content of exports (imports for exports divided by exports) rose from 5.8 to 48.2% over 1964-73 (Jung-ho 1990:23). Chenery et al. (1986:217), using

cont.

These economic and political aims prompted the government to adjust the policy regime, increasing protection to the HCIs, and channelling more resources in their direction. The objective of the adjustment, however, was not only to develop a HCIs for 'domestic consumption', but also to make them leading exporters. The solution adopted was very similar to that successfully applied to the light industry. FDI was kept at bay, while high protection in a highly concentrated domestic market was combined with access to credit conditional on export performance, and subsidies for exports. The very nature of the HCIs, however, requiring capital and technology in a large scale, and its impact on the competitiveness of downstream sectors, demanded greater selectivity in protection and credit allocation, greater investment in human capital and indigenous technological effort, and greater emphasis on technology licensing.

Adjusting intervention in the product market.

*The trade regime.*

On the export side, the need to adjust incentives to achieve the HCI aims coincided with an unprecedented boom in exports. Boosted by the high growth of the world economy and international currency realignments (table A.7), Korea's exports grew 50% in 1973, convincing the government that incentives could be streamlined and fiscal resources reallocated to the HCI program.<sup>79</sup> Apart from reducing credit and interest subsidies,<sup>80</sup> export incentives accruing from import rights were reformed to increase protection for the HCIs. Tariff exemptions for capital goods were confined to selected export and import industries.<sup>81</sup>

<sup>79</sup> The analysis of the mid 1970s adjustments in trade policy was based mainly on Hong (1979), Westphal (1979) and Yoo (1990).

<sup>80</sup> For instance, in 1973, the 50% reduction of corporation and income tax on export earnings was abolished, and interest rates on short-term export credit raised by two percentage points (table A.13) These credits were also limited to 85 % of the export value (it was approximately 95 %).

<sup>81</sup> Exporters though were allowed to pay the tariff in instalments. The exemption criteria were as follows: essentially for the manufacturing process, age of the technology and availability in the domestic market. Although capital

cont.

automatic exemptions for imported inputs were replaced by a 'drawback' system, and import-export links were phased out.

Although these changes led to a decline in export incentives (table A.12), they should not be interpreted as a policy 'u-turn' towards an inward-looking strategy. It was more of a strategic adjustment to foster HCIs and eliminate excessive profits, than a change in direction. The key elements of an export-oriented growth were still there. For instance, even though the official exchange rate was held constant over 1974-79, the PPP exchange rate remained above its 1968 level, then considered 'realistic' (table A.7).<sup>82</sup> Moreover, new export-promotion measures were introduced, offering fiscal and credit subsidies to trade companies (1975), and post-shipment financing for HCI exports, through the newly established Korea Export-Import Bank (1976).<sup>83</sup>

On the import side, the tariff structure was reformed and NTBs tightened. The former was adjusted to increase protection for the HCIs and reduce it for the rest of the industry. Overall the simple and weighted average rates declined slightly over the period (table A.10).<sup>84</sup> As to NTBs, they were considerably tightened over 1968-

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goods financed by foreign capital continued to be exempt from import duties, the government established minimum domestic content requirement for large plant facilities and for those built with foreign loans.

<sup>82</sup> The decision to fix the exchange rate resulted apparently from an attempt to control inflation and subsidise capital goods imports for the HCIs. The first oil shock in 1973 led to a period of high inflation. During 1974-75, the WPI grew in average 34.5% p.a., well above the 1965-73 average (8.8%) [BOK (a)].

<sup>83</sup> The promotion of trade companies (TC) was aimed at reducing Korean exporter's dependency upon Japanese TCs, lowering transaction costs and facilitating access to international credit. Incentives included, immediate access to short-term loans without letters of credit, relaxed controls on inventories of imported inputs and increased allowances of foreign exchange to conduct overseas marketing (Westphal, 1979:268). The TCs ended up being not more than a new label for the *jaebols* and in the early 1980s their incentives were abolished (FEER, June 1983). The TCs increased their share of exports from 12 to 50% over 1975-83. In 1990, however this share was reduced to roughly 40% (Rhee and Pursell, 1984:148 and FEER 1990, 1 March).

<sup>84</sup> During 1973-79 there were three major tariff reforms, in 1973, 1977 and 1979. In the first reform, the special tariff (introduced in 1964 to eliminate

cont.

78, notably to capital and consumer goods (table A.14). These changes meant that import controls—until then confined to consumer goods and selected HCI goods not used in export production—were expanded to cover most of the HCI sectors, irrespective of the market of destination. This seems to be confirmed by the results of interviews conducted by the World Bank during 1975-76, reported by Westphal (1979:271):

...It appears that competing imports of heavy industrial products have been effectively prohibited in numerous cases, even when the prospective importer is engaged in export activity. The products include basic chemicals and metals as well as mechanical engineering products. For the last group, the machinery producers' association determines eligibility for an import license, subject to arbitration by Ministry of Commerce and Industry, for items in the restricted list. The criterion used is that equipment with domestically produced similar cannot be imported unless the terms on which it can be purchased, including price, quality, and delivery date, are not competitive with those for the imported item.

The last part of Westphal's report draws attention to the fact that the additional protection given to HCIs was not unconditional. As with the light industry in the previous period, protection was linked to world prices, but this time not only through export performance but also by price controls.<sup>85</sup> Along with higher tariffs and tighter NTBs, the HCIs were also favoured by fiscal and other pecuniary incentives, based on sector-specific

windfall profits produced by NTBs) was abolished, but more significant reductions in the simple and weighted average rates had to wait for 1977 and 1979 reforms, particularly the latter. However their impact would only be felt in the 1980's, after the HCI push was over. See Kim, K. (1991:48).

<sup>85</sup> In this respect, the case of the Hankook Machine Industrial Co., analysed by Enos and Park (1988, chap. 3), is quite illustrative. This company was taken over by a *jaebol* in 1976, and the new management asked the government to impose a ban against the imports of medium-sized diesel engines, one of the company's most important products. The government agreed with the demand but asked in exchange the right to control the price of the product. By 1978 the whole domestic market for the product was being supplied by Daewoo.

promotion laws, including tax holidays, special depreciation and purpose-built estates and infrastructure.<sup>86</sup>

ERP estimates for 1978, for what they are worth,<sup>87</sup> suggest that all these changes reinforced the selectivity implicit in the 1960-72 trade regime (table 6). Effective protection rates for HC industries—transport equipment, durable goods, machinery and intermediate goods II—perhaps except for the last one, were either increased or remained relatively high. Furthermore, as in 1968, incentives in manufacturing continued to be biased towards exports.

**Table 6: Korea's Effective Protection Rates<sup>1</sup> for the Domestic market, 1968-1982.**

Sector (ISIC)	1968	1978 <sup>2</sup>	1978 <sup>3</sup>	1982
Agriculture	19	57	77	74.
Mining	4	-1.5	-26	-2
Processed Foods	-18	-44	-29	-48
Bever. and Tobacco	-19	33	28	15
Construc. Material	-11	12	-15	51
Interm. Products I	-25	37	-38	62
Interm. Products II	26	21	8	40
Consumer Nondurab.	-11	67	31.5	43
Consumer Durables	64	243	131	52.5
Machinery	44	44	47	32
Transport Equipment	163	327	135	124
Manufacturing	-1	32	5	28
All Industries	11	39.7	30.6	n.a

<sup>1</sup> Direct price comparison, Balassa method. <sup>2</sup> Estimated by Young, S. (1984) <sup>3</sup> Estimated by Nam (1984). Note: For definitions of Ind. groups see table 1. Source: Kim and Westphal (1982:230) for 1968; Young, S. (1984) "Trade Policy Reform in Korea: Background and Prospect." KDI as quoted in World Bank (1987:35, vol. 1) for 1978 and 1982, and Nam (1984:201) for 1978.

<sup>86</sup> See Hong (1979:83), World Bank (1987:42, vol. 1) and Enos and Park (1988:36).

<sup>87</sup> As with Kim and Westphal's (1982), Nam and Young's estimates also used direct price comparisons. Moreover, as Nam acknowledged, the estimates for 1978 are even more problematic because of the pervasive price controls imposed in 1977. The divergences between Young and Nam's results, reinforce our doubts about the accuracy of the instrument.



*Industrial organisation policies.*

As noted in the previous section, right from the beginning of the outward-oriented regime, the government opted for promoting local conglomerates, apparently aware of their effectiveness in overcoming key market imperfections in the product and factor markets. This conviction seems to have become stronger with the decision to move into the HCI. Not surprisingly. Faced with an industry characterised by high risks, huge capital requirements, long investment maturation and significant economies of scale both at the plant and firm level, it would have been economic suicide to raise an infant industry based on Marshallian firms. Another option would have been the costly Latin American solution of 'protected' inward FDI. This, however, as show later, was unequivocally ruled out by the government.

This renewed emphasis on the *jaebols* involved only marginal changes in the policy regime. After a decade of 'big business' policy, a hard core of large and highly diversified local firms was already in place. The main instruments continued to be credit and investment licensing. Tables 2 and 7 show that the SMFs' share of total credit and their access-to-borrowing ratio declined even further in the first half of the 1970s. The former continued to dwindle in the second half of the decade, whereas the latter remained below the large firms' ratio, notwithstanding a significant improvement.<sup>88</sup> Data on economic concentration

<sup>88</sup> As pointed out before, these figures underestimated the *jaebols'* bias since smaller subsidiaries were included among the SMF.

also suggests that the 1960-72 trend was maintained, with the competitive markets share of total shipments falling to 26% in 1977 (table A.16). This development put Korea's levels of concentration well above those of Japan and others NICs such as Taiwan (table A.23).

**Table 7: Access to Borrowing by Each Sector. Korea 1972-84<sup>1</sup>**

	1972	1974	1976	1978	1980	1982	1984
Total mnf.	45.41	45.22	40.97	39.29	38.55	32.53	28.17
L. firm (a)	45.72	45.65	41.36	39.69	39.25	32.26	27.84
S firm (b) <sup>2</sup>	27.27	24.44	34.98	37.02	33.79	33.87	30.40
(b)-(a)	-18.45	-21.20	-6.38	-2.67	-5.46	1.61	2.56

<sup>1</sup> Ratio of total bank loans and foreign loans over total asset of each sector. <sup>2</sup> Small and medium business is defined as firms with fewer than 300 employees. Source: Financial Statement Analysis, BOK, as quoted by Cho and Cole (1986:26).

Like the conglomeration policy, the approach to FDI was not significantly changed but restrictions were made official and apparently reinforced, given the abrupt decline of investments after 1973 (chart A.1). These adjustments seem to have been triggered by a significant rise in FDI over 1972-73<sup>89</sup>, and tend to confirm the government's option to minimise its reliance on foreign firms. The 'officialization' of the restrictive policy came in the form of an amendment to the FCIL (1973), whereby a 'new' set of criteria for FDI approval was introduced. These criteria, which led to a FDI 'positive list' similar to that of pre-1967 for imports, consisted of a series of market, ownership, localisation and scale restrictions that continued to virtually rule out projects that competed with domestic firms in the external and internal market, or projects that the majority of the capital was owned by foreign firms.<sup>90</sup>

<sup>89</sup> This rapid expansion seems to be caused by the diversion of Japanese investment from Taiwan to Korea, following Japan's normalisation of diplomatic relations with mainland China (Il-Hwan 1987:4).

<sup>90</sup> See Koo (1985:178). Moreover, restrictions on capital repatriation were also introduced, limiting its withdrawal to two years after the initial investment, and restricting the annual repatriation to less than 20% of total investment (Bark, 1989:16)

Data on the foreign firms' sectoral distribution, ownership structure and share of output and exports, indicate the continuity of the FDI restrictive policy. The share of output and exports, for instance, increased significantly between 1973-78, but remained quite marginal by LDCs' standards (table 3).<sup>91</sup> The sectoral distribution seems to have followed the move towards the HCI (table A.20), with investment shifting from sectors such as textile and apparel to chemicals and electrical and electronic goods. Finally, the overwhelming majority of the projects continued to be majority owned or co-owned by local companies (table A.19).

### Adjusting intervention in the factor markets

#### *The financial markets*

The adjustments in the policy towards the financial markets were confined mainly to the direction of credit allocation. The credit-based system remained in place, the banks remained in the government's hands, loan allocation continued to be discretionary, and interest rates remained subsidised. The bulk of the resources, though, was concentrate on the HCI targets and on the agents that would carry out these investments: *the Jaebols*.

The changes in credit allocation can be said to have begun in 1972 with the Presidential Emergency Decree. This decree can be viewed both as a government's response to the deleterious effects of an IMF sponsored stabilization (1970-71), and as a preparatory measure for the implementation of the HCI investments.<sup>92</sup> The combination of a restrictive monetary policy and a maxidevaluation (1971), in an environment of highly leveraged conglomerates, led to a financial crisis that not only slowed the economy down but also put the HCI investments in danger.

<sup>91</sup> These figures, though appear to have been strongly affected by the 1972-73 surge. For the sake of international comparison, during 1977-79, the stock of FDI as a percentage of GNP was 4.7% for Argentina, 6.4% for Brazil, 5.6% for Mexico and 3.2% for Korea (Westphal et al. 1985: 191).

<sup>92</sup> The stabilization was prompted by Korea's rapid increase in foreign borrowing during 1968-69, reflecting the gap between the foreign and domestic interest rates (table A.13). See Cole and Park (1983) and Amsden (1987).

Keeping with tradition, the government avoided a market solution, and chose to bail out the debt-ridden conglomerates and to reduce interest rates even further (table A.13).<sup>93</sup>

The reasoning behind these measures seems to have been, first, that without financially sound conglomerates, a move towards the HCIs, based in local private firms, would not be possible. And second, that widespread business failures would damage Korea's credit standing in the international market, and accordingly, deprive the HCI 'push' of an important source of capital.

Despite the drastic nature of the 1972 measures, the government's perception appears to have been that they would not be enough to carry out the industrial restructuring. They were, therefore, complemented by an increase in the *Jaebol* and HCI biases of the loan allocation policy. As the former was already discussed in the previous subsection, let us concentrate on the latter. As can be seen in chart 1, the HCI bias shot up to unprecedented levels, fuelled by a relative and absolute increase of the so-called 'policy loans' (table A.21). These loans, which in their overwhelming majority were linked to HCI investments, received a boost with the establishment of the National Investment Fund, in 1974.<sup>94</sup>

It is also worth noting that despite the greater HCI and *jaebol* bias, credit allocation continued to favour exports. The share of preferential credits to exports in total domestic credits almost doubled during the period (table A.21).

#### *Human capital and S&T policies*

Without neglecting the need to constantly improve the 'absorptive' base—illiteracy was virtually eradicated in the 1970s and all other human capital indicator showed enough

<sup>93</sup> See Cole and Park (1983:158).

<sup>94</sup> The NFI was set up to finance both fixed and working capital mostly of HCIs. During 1974-79, roughly 60% of the NFI loans were to HCIs constituting 3 to 4.5% of the total domestic credit (World Bank 1987:111, vol. 2).

improvement to keep Korea on the top of the NICs' league<sup>95</sup>—the government, with the HCI targets in mind, set out to strengthen engineering and technical education, and to improve the S&T infrastructure to boost domestic R&D capability. A number of research institutes specialised in HCI sectors were then established, and the 'Technology Development Promotion Law', which included a series of fiscal incentives to private R&D, was introduced.<sup>96</sup> The results, at least quantitatively, seem impressive. The R&D share of GNP rose significantly reaching 0.86% in 1980, with the private sector accounting for a growing part of it. The R&D share of sales almost double over 1976-81, and the number of researchers per capita more than trebled over 1972-76 (table A.22).<sup>97</sup>

This renewed emphasis on indigenous technological effort was accompanied by a substantial increase in technology licensing, reflecting the HCIs' higher imported technology requirements.<sup>98</sup> Yet, contracts continued to be carefully screened and approved according to a set of priorities<sup>99</sup>, in a continuous effort to overcome informational imperfections, and to strike the right balance between the various and complementary ways of achieving technological capability.

<sup>95</sup> Together with Taiwan, Singapore and Hong-Kong. See table A.1 and Lall (1991a).

<sup>96</sup> MOST (1988) and Lee et al (1991). The specialized institutes included shipbuilding, marine resources, electronics, telecommunications, machinery and metals, chemicals and standards. The incentives of the Technology Development Promotion Law included tax exemption for R&D funds and special depreciation for R&D equipment.

<sup>97</sup> For the sake of comparison, the R&D share of sales in Brazil in 1978 was less than 0.2% (Braga and Matesco 1986) while in 1981 Korea it was 0.7.

<sup>98</sup> Technology licensing outlays over 1967-71 were \$ 16.3 million. It then shot up to \$96.5 million over 1972-76, and during 1977-80 reached \$ 344.2 million (Kim and Lee 1990:94). Yet, Korea's royalty payments remained well below other NICs such as Mexico and Brazil. During 1977-79, Korea's payments for disembodied technology were only 0.17% of GNP, while Brazil's and Mexico's were 0.33% and 0.23%, respectively (Westphal et al. 1985:191).

<sup>99</sup> See Enos and Park (1988:36).

### Success or failure?

As stressed in the introduction of this section, the HCI period is often viewed as marking a shift towards a more selective and inward-looking strategy. However, as shown, not only the HCI policies were not inward-looking, but there was not such a thing as a neutral, hands-off policy in the 1960s. Therefore, far from representing a rupture, the HCI strategy can be interpreted as a continuation of an interventionist, selective and export-oriented policy regime. Its results, though, remain to be assessed.

As stated elsewhere, the task of assessing the outcome of a specific policy regime in a dynamic perspective is fraught with difficulties, not least because the counterfactual question cannot be properly answered.<sup>100</sup> Yet, most critics of the HCI strategy—usually looking from a neoclassical viewpoint—seems to be in no doubt about its negative results regarding resource allocation and export growth.

The World Bank (1987:45, vol. 1), for instance, agrees that the HCI policies were consistent with Korea's emerging comparative advantage but has 'mixed feelings' about the results. Changes in the industrial structure would have "occurred too rapidly and at excessive cost" and the substitution of "bureaucratic judgement for market tests" would have led to idle capacity and lower ICORs (incremental capital-output ratio). Likewise, Balassa (1985) argues that the bias of credit allocation towards the HCI, coupled with an overvalued exchange rate, would have resulted in overcapacity in the HCI and damaged the light industry performance, adversely affecting economic and export growth. Along similar lines, Jung-ho (1990:99) maintains that, "By employing the HCI policy, Korea has paid a high price in terms of the weakened export competitiveness of the light industry" and adds that, "The net effect of the HCI policy on the export competitiveness of the HCI seems to have been nil or negative."

<sup>100</sup> See World Bank (1987:45, vol. 1)

The belief, though, that the government's handling of the HCI drive was problematic, is not a privilege of Neoclassicals. There seems to be a widespread consensus that the demand for some investments was overestimated, too many companies were licensed to enter particular industries and too many industries were targeted at the same time.<sup>101</sup> What generally distinguishes the neoclassical criticism is its rather gloomy picture of the HCI drive outcome, and its underlying assumption that the economy, particularly exports, would have performed better had the incentive regime been neutral and more outward-looking. Yet, if the aforementioned microeconomic misallocations of resources are viewed from a macroeconomic and dynamic perspective, the neoclassical negativism does not appear to be warranted.

First, the macroeconomic performance was quite impressive. GNP grew 9.6% p.a. whereas manufacturing output reached 17.2% p.a., roughly matching the previous period performance (table A.3). The fly in ointment was inflation, whose annual average rose to 20.5%. Yet this figure was not that far from the 'neutral' period average (16%). The current account showed in 1977 the first surplus since 1965 and, despite heavy investment and foreign borrowing, the debt service ratios declined over 1972-79 (table A.8).<sup>102</sup>

Second, HCI policies were remarkably successful in expanding the HCI's share, not only in manufacturing output but also in manufactured exports. During 1972-80, the former increased from 32 to 55%, whereas the latter rose from 24 to 46%. In 1984, HCI products were already accounting for more than half of Korea's exports (table A.2). Moreover, the HCI import ratio fell from 39 to 24% over 1974-80 (table A.4), suggesting, on the one hand, an irrefutable industrial deepening, and on the other, a

considerable selectivity in this process, since the level of imports remained well above that of Latin American NICs.<sup>103</sup>

Third, when export performance is examined, the picture that emerges is far from disappointing. True enough, export growth declined. The annual average rate fell from 36.5 to 19.9% between the 1960-72 and 1973-79 periods. However, this does not seem to be related to the strategy adopted, whose often mentioned problems—lack of credit for the light industries and an overvalued exchange rate—appear to have been overestimated. As noted earlier, the PPP exchange rate remained at a level considered "sufficient to sustain rapid export growth."<sup>104</sup> As to the credit bias, it is true that most of the incremental credit went to the HCIs. However, it is also true that a similar situation occurred in the 'neutral' period and there was no talk of credit starvation. Moreover, despite the obvious differences in capital intensity, the light industry's access-to-borrowing ratio during 1973-79, was on average higher than the HCIs'.<sup>105</sup>

The decline in export growth appears to be better explained by other supply and demand variables of the export equation. On the supply side, the growth of the real wages above labour productivity after 1976 (table 5), might have squeezed profits, particularly in the labour-intensive light industries, discouraging exports.<sup>106</sup> To have raised the exchange rate to make up for the higher labour cost, would have hindered the

<sup>103</sup> In 1979, Brazil' HCI import ratio was 8.4% against 23.8% in 1980 Korea (tables A.4 and B.7).

<sup>104</sup> Westphal (1979:271). Moreover, Won-Am Park states that even though the won, on a PPP basis, was overvalued against the U.S. dollar throughout the whole 1963-1979 period, the degree of overvaluation was higher during 1963-72 than afterwards (*Exchange Rates, Wages, and Productivity in Korea*. The Korean Economic Review, vol. 2, 1987 p.19 quoted in Mihn 1988:31).

<sup>105</sup> They were 41.0 and 40.8%, respectively (World Bank 1987:116. Vol. II). Moreover, as Hong (1979:71) argued, the fact that the HCI investments were carried out by the same entrepreneurs who had been engaged in light manufacturing, casts doubt over the 'starvation' argument.

<sup>106</sup> The profitability of the light industry (the ratio of profits minus financial expenses over capital stock) fell from 9.9% to 3.8% over 1973-79. (World Bank, 1987: 120 Vol. II).

<sup>101</sup> See, e.g. Amsden (1989), Michell (1988) and Westphal (1990). Kim, J.H. (1990:13) draws attention to the fact that most of the HCI investment was carried out in a short span of time (1977-78), placing unnecessary strain on the economy. On a sectoral level, the heavy machinery industry is one of the most cited government's HCI 'mistakes', leading to overcapacity and uncompetitive prices. See World Bank (1987:46), Enos and Park (1988) and FEER (1981:44, June 5).

<sup>102</sup> For details of the macroeconomic performance see Amsden (1987).

adjustment of the export composition to changes in the relative factor endowment. On the demand side, the sharp reduction in the world trade growth after the first oil shock, and the rise in protectionism that accompanied it, seem to have played a major role in reducing export growth. The growth of world exports fell from 8.7 to 4.6% p.a. between the two periods, whereas the share of Korea's exports to developed countries under-restriction rose from 26.7 to 32.2% over 1976-79.<sup>107</sup>

If the aforementioned factors are taken into account and if we allow for the fact that Korea's exports outperformed those of the developed countries and other Asian superexporters (table 8), the portrayal of the HCI policies as a disaster for exports is unwarranted. In fact, the export performance was quite remarkable, particularly that of the HCIs, which, despite their infant condition, outperformed the light industries, significantly increasing their share of total exports (table A.2).<sup>108</sup>

**Table 8: Export performance of the East Asian NICs: 1974-79**<sup>1</sup>

Countries	export value (US\$)	export quantum
Korea	29.4	16.1
Taiwan	23.8	14.1
Singapore	27.0	11.4
Hong Kong	17.6	11.7
Developed Market Economies	16.4*	n.a

<sup>1</sup> Arithmetic averages of annual growth rates.\* Average annual growth rate: 1975-79. Source: Data from IMF and World Bank as cited by Balassa (1985:166) and UN (ITSY).

As in the 1960-72 period, the implausible combination of high protection and export growth was made possible by linking the latter and access to credit to the former, by fostering

conglomeration, and by selective protection. Protection gave the HCIs guaranteed access to static (production and R&D) and dynamic economies in the domestic market.<sup>109</sup> Conglomeration made sure that these economies would be optimised at the firm level, and that an early entry to the export market was possible through cross-subsidisation and price discrimination. Selectivity gave infant exporters access to producer goods, while avoiding a too heavy burden to upstream industries and to the country's limited capital and human capital resources. As before, this arrangement was complemented by FDI protection, subsidised and discretionary credit for exports and manufacturing investment, and government direct intervention and incentives for indigenous technological effort.

When looked from a static viewpoint, this export-cum-protection strategy does not appear to be economically sound. Resource allocation is distorted and a heavy burden is imposed on domestic consumers. However, as Westphal (1982: 273) pointed out, if the usual assumptions of constant static and dynamic returns are dropped, the results can be welfare improving. Higher export growth can lead to dynamic and static economies that, in turn, would reduce unit costs and ultimately lead to lower domestic prices. Moreover, as HCIs are largely characterised by oligopolistic structures, the strategy of forcing the entry of local firms into the domestic and international markets might also shift profits from foreign to local producers.<sup>110</sup>

The third relevant point about the HCI policy assessment, concerns the declining ICORs (table 9). As the standard Heckscher-Ohlin model shows, a declining productivity of capital does not necessarily mean inefficiency. Any economy whose relative factor endowments are changing is bound to present a long term increase in the productivity of the 'ex-abundant' factor, matched by less productive 'ex-scarce' factor. However, due to short-term macroeconomic fluctuations and market failures,

<sup>107</sup> World Bank (1990) and Chang (1989:144). The light industry was the most affected by the import restrictions. The textile and clothing, e.g., had their share of restricted exports increased from the already high 48% in 1976 to 51% in 1981.

<sup>108</sup> Overall, Korea's share of world manufacturing exports rose from 0.8 to 1.45% over 1975-80 (UN ITSY, HIT). Fujita and James (1989), using the source-of-growth methodology, showed that during 1973-80, the export expansion effect in the growth of the HCI's output was second only to domestic demand expansion effect.

<sup>109</sup> For a formal and stylised model of import protection as export-promotion see Krugman (1984).

<sup>110</sup> See Brander (1986).

**Table 9: Korea's Average Incremental Capital Output Ratios 1970-88\***

	1971-73	1974-77	1978-81	1982-84	1984-88
All industries	2.26	2.70	6.54	4.41	2.76
Manufacturing	1.37	1.40	2.63	1.61	n.a.

\* Changes in output are lagged by one year. Both output and fixed investment are in 1980 constant prices. Source: World Bank (1987:152, vol.1) for 1971-84 and Lall (1991b:16) for 1984-88

this is not a smooth and inexorable process. For instance, due to static and dynamic increasing returns, a LDC moving into the heavy industry (despite comparative advantages in the technologically mature sectors) will probably have the productivity of its capital stock sharply diminished, insofar as the MES will be larger than the initial market, and because of teething problems.

Korea's option for an outward-oriented strategy made this fall particularly acute, since scale economies and the pressure to be competitive, led to HCI plants whose capacities were well beyond what the domestic demand could absorb.<sup>111</sup> On the other hand, the data available shows that, by acting this way, it avoided the experience of inward-oriented NICs, where the temporary fall in productivity was seldom overcome because of the size of the domestic market and the lack of international competition. For instance, table 9 reveals that after a rising sharply over 1978-81—reflecting also the 1979-80 recession—ICORs declined steadily during the 1980s, to levels close to those of the 'neutral' period. Data on the HCIs capacity utilisation show a similar trend (table A. 24), and it is noteworthy that for the manufacturing sector as a whole, rates appear to have been very close to the international

<sup>111</sup> This seems to have been particularly the case of steel and shipbuilding. See Amsden (1989 chap. 11 and 12). Jung-ho (1990: 28), quoting a document from the HCI Promotion Committee, stated that "plants were to be of 'international scale' to reap the economies of scale that were important in the heavy and chemical industries. It was considered desirable to import the cutting edge technologies rather than the 'appropriate' technology from abroad."

norm despite the peculiarities of the HCI strategy and the teething problems.<sup>112</sup>

Finally, a few words about the so-called counter-factual case. As noted earlier, there is no doubt that policy mistakes happened and that HCI drive successes could have been achieved at lesser cost. Given that a Pareto-optimum situation is only a theoretical possibility, one can always argue that it could have been better. However, there is little evidence to support the hypothesis that Korea could have exploited its dynamic HCI advantages, or even that it could have had a better economic and export performance, had it pursued a neutral regime. First, to assume that a smooth, 'stage-approach' development<sup>113</sup> would have been possible, one has to overlook the market imperfections stemming from the dynamic and static economies of scale, and non-homogenous products that characterise the HCIs, which, in turn, are compounded by imperfect markets for capital and technology. This means that barriers to entry were high, and that without government intervention Korean firms' chances to succeed would have been slim.<sup>114</sup> In fact, despite all government support and the rise in labour costs, the HCI average rate of return over 1973-80 (5.1%) was very close to the light industry's (4.2%), reflecting the difficulties in entering the industry.<sup>115</sup>

Second, given the aforementioned obstacles, it seems reasonable to assume that had the government adopted a hands-off policy, the transition to a more capital-intensive industrial and

<sup>112</sup> This is illustrated by a comparison with the U.S. shown below. (USA=100)

Manuf.	1970	1972	1976	1977	1978	1979	1980	1982	1984
cap utiliz.	83.2	78.6	90.4	94.7	99.0	91.6	87.0	98.7	100.

Source: Table A.24 and OECD (1989).

<sup>113</sup> See Balassa (1981) and Little (1982).

<sup>114</sup> This point is acknowledged even by the usually restrained World Bank (1987:47, vol. 1) who argues that, "Without the virtually unlimited government support that was offered to the HCI investments, no private agent would have been willing to bear the obvious risks."

<sup>115</sup> Rate of return is defined as operating profit plus non-operating income minus financial expenses, over total assets. BOK (b) and EPB (b).

export structure would have been not only delayed but also reduced in scope. This, in turn, given the conditions of the labour market during the period, would have been more of a hindrance than a help to the light industries. As pointed out by Bai (1982), Korea's Lewisian turning point, seems to have occurred in the mid-seventies when real wages started to grow consistently above productivity (table 5).<sup>116</sup> *Ceteris paribus*, a delay in the HCI drive would have put even more pressure on the labour market, eroding even further Korea's comparative advantage in labour intensive goods vis-à-vis second-tier NICs, while investment in HCI sectors, giving the market failures, would have been slow to respond to factor prices. The overall result, then, would have been a poorer export and growth performance than the one that actually happened.

Two pieces of evidence seem to support this hypothesis. First, data in tables 10 and 11 show that notwithstanding a near three-fold increase in Korea's capital-labour ratio in manufacturing over 1966-80 (Hong 1987:314), its unit labour cost grew well ahead those of Taiwan and Singapore and the wage rate gap with the second tier NICs rose sharply during the second half of the 1970s.<sup>117</sup> Second, even though incentives favouring HCIs were dropped in the early 1980s (see next section), HCI outperformed light exports by a large margin. The former grew 17.4 % p.a. during 1980-88, while for the latter, 9.6% p.a.<sup>118</sup> In this context, it does not seem to be hard to predict what would have happened with the overall export performance, had exports remained concentrated on labour-intensive goods.

<sup>116</sup>Bai (1982:131) shows that the labour supply elasticity declined significantly in the mid-seventies while the job opening-applicant ratio surged. The labour share of value-added also started to grow rapidly after 1975 rising from 23% to 32% in 1979 (EPB b).

<sup>117</sup>Despite the wage hike, Korea's wage rate in the early 1980s was still just a fraction of those of the developed countries and therefore still a significant edge in the technologically mature capital-intensive industries. For instance, the 1980 Korea's hourly compensation rate in the steel industry was only 9.2% of that of the U.S. (UNIDO 1988). Dornbush and Park (1987) use a Ricardian model with a continuum of goods to develop this point.

<sup>118</sup>EPB (a).

Table 10: Korea and Second Tier NICs Average Wage Rate, 1975-87.					Table 11: East Asia's Unit of Labour Cost Index, 1976-79.	
	1975	1980	1985	1987	Annual Change (%)	1976-79*
Korea	100	100	100	100		Korea 27.5
Indonesia	47	26	27	19		Taiwan 9.4
Thailand	83	49	55	50		Singapore 3.9
U.S. dollars, Korea =100 Source: UNIDO.					*1975 prices. Source: Kim, J.H. (1990b:36)	

All in all, by targeting the HCIs, the government prevented an even steeper rise in labour costs than the one occurred during the 1970s, which would have compromised even further the export performance of the light industry. Moreover, by pre-empting a move in factor prices, helping the private sector to bridge the financial and technological gaps between the light and heavy industry, the government opened the way for Korea's swift adjustment to its changing comparative advantage, placing the country in a better position to exploit it.

#### IV- The liberalisation (1980-1990).

In the early 1980s, puzzlement would have been the probable state of mind of an occasional observer of the Korean economy, versed only on its neoclassical description, on being informed of the government intentions to liberalise the economy. In fact, it would have been no easy matter to grasp the purpose of the liberalisation in an economy that was portrayed as one of the best examples of an outward-looking, neutral and free trade-like regime. The neoclassical answer to this paradox was to blame the HCI period. The liberalisation would have been, then, a response to the policy mistakes of the 1970s and not to those of the 1960s. Not surprisingly, as will be shown, the government's official explanation also followed along these lines.

The last year of the HCI period was marked by a serious political and economic crisis. Fuelled by the hectic pace of investments, wage increases above productivity (table 5) and by the building up of foreign reserves, inflation (WPI) jumped from 9 to 18.6% over 1977-79 forcing the government to act. In April 1979, a stabilization plan was announced, but was compromised by the second oil shock and by the president assassination in October. The ensuing political and economic turmoil was aggravated in

1980 by the perverse combination of a poor harvest and an international interest rate shock, which were the last straws that pushed the economy into stagflation and BP problems. In this year, GNP fell by 3.7%, WPI growth shot up to 39%, and the current account deficit reached 8.8% of GNP.<sup>119</sup>

When the new administration took over in May 1980, it was keen to distance itself from the political and economic difficulties inherited from its predecessor. The blame for the economic crisis was then conveniently laid at the door of a policy that tried to 'pick winners' and to substitute 'bureaucratic judgements for market tests', even though the political and international elements of the crisis were also quite obvious. A draft of the Fifth Five-Year Plan (1982-6) issued in 1981 stated that Korea would 'return' to a fully fledged outward-looking policy. This would mean that, "Investment choices will be left to the initiative of the private sector and the government will provide only the general framework in which such choices will be made by private entrepreneurs in co-operation with their bankers and financiers."<sup>120</sup> An ambitious program of reforms was then launched that would limit government intervention in the product and factor markets to 'functional' failures (e.g. R&D and unfair competition).

Liberalising the product markets

*Trade reforms*

Trade liberalisation began in earnest 1983,<sup>121</sup> after the government had successfully tackled the macroeconomic

<sup>119</sup> See table A2. For details of the macroeconomic crisis see Amsden (1987), Jung-ho (1990) and Kim, S. K. (1991).

<sup>120</sup> Quoted by Balassa (1991:51).

<sup>121</sup> The first attempt to liberalise trade happened in 1978, as part of an anti-inflationary policy. Even though it led to a noticeable reduction on NTBs and tariffs, the Korean economy began the 1980s, still highly protected from imports. In 1982, nearly 74% of manufactured imports were under NTBs, and 74 % of the AA items were raw materials (table A.14). The simple average tariff, 24.7% (table

cont.

crisis.<sup>122</sup> The program consisted basically of two five-year advanced liberalisation schedules, one for NTBs, and one for tariffs. The former envisioned the import liberalisation ratio, on an item basis, increasing from 80.4% in 1983 to 87.7 % by 1985 and to 95.4 % by 1988. In sectoral terms, light and intermediate product industries were to be the first to be liberalised (Nam 1985:25). Tables 12 and A.9 show that both macro and sectoral targets were virtually attained, except, perhaps for primary goods.

**Table 12: Korea's Import Liberalisation Ratio by Industry (1983-89) (%)<sup>1</sup>**

Industry	1983	1985	1988	1989
Primary goods	73.2	78.2 (77.8)	75.3 (80.5)	74.2
Chemicals	94.4	95.6 (95.7)	100 (99.6)	100
Textiles	80.4	93.1 (90.4)	98.8 (97.8)	99.5
Steel & metal	90.9	95.6 (94.9)	100 (100)	100
Machinery	68.7	83.0 (83.2)	100 (100)	100
Electric & electronic	53.6	73.8 (73.9)	100 (100)	100
Others	81.2	82.8 (83.7)	94.9 (88.2)	94.9
Total	80.4	87.7 (87.7)	94.7 (95.4)	95.5

<sup>1</sup>Total restricted items divided by total importable items (CCCN 8 digit). Numbers in parentheses are planned. Source: Young (1988:27), Koo (1984:24), World Bank (1987, vol. 1:61), KFTA (1988:4) and Kim, J.H. (1990:10).

As for tariffs, the average rate was to be reduced from 23.7% in 1983, to 20.6% by 1984 and 16.9% by 1988.<sup>123</sup> As shown in table 13, tariff rates in 1988 were a bit off target, particularly given the

A.10), was still well above the 6% OECD average. Moreover, ERP estimates show a substantial increase over 1978-82 (table 6). See Kim, S. (1991).

<sup>122</sup> The stabilization policies involved, first, a 17% devaluation associated with a wage squeeze. Second, interest rates were raised, access to domestic and foreign credit restricted and the budget deficit virtually eliminated. These measures led to a rapid drop in inflation (WPI) which fell to 0.2% in 1983. In addition, boosted by the devaluation and by a strong import demand in the U.S., exports resumed high growth while imports faltered, improving the current account condition (table A.8). See Amsden (1987).

<sup>123</sup> Moreover, the program projected a reduction in the dispersion of the tariff rates, bringing, in 1988, the overall range of 0-150 % down to compressed sub ranges of 5-10 % for raw material, 20 % for intermediate products and capital goods, and 20-30 % for consumer goods. IMF(1984:300).



increase in the coefficient of variation that was supposed to go down. Yet, it can be said that, overall, the changes in tariff protection were very much in line with what was planned. The announcement of the tariff schedule, coincided with the reform of the tariff deduction scheme, which aimed at attenuating its industry-specific character. Except for the export drawback, deductions were then limited to 55-65% of the tariff rate and restricted to facility equipment and machines. In addition, the list of sectors entitled to these incentives was shortened, with the narrower category of 'new technology' industries replacing the 'strategic' one.<sup>124</sup>

**Table 13: Korea's legal Tariff Rates by Sector, 1979-93**

	1979	1983	1984	1988	1989	1993
Agricultural products	n.a	31.4	29.6	25.2	20.6	(16.6)
Non agricultural goods	n.a	22.6	20.6	16.9	11.2	(6.2)
Raw material	n.a	11.9	n.a	9.5	n.a.	n.a.
Intermediate goods	n.a	21.5	n.a	17.1	n.a.	n.a.
Finished goods	n.a	26.4	n.a	18.9	n.a.	n.a.
All products	24.7	23.7	21.9 (20.6)	18.1 (16.9)	12.7	(7.9)
Coeff. of variation <sup>1</sup>	0.69	n.a.	0.61	0.64	n.a.	(0.75)

Note: Numbers in parentheses are planned. <sup>1</sup> Standard deviation divided by the mean.  
Source: Young (1988:30), KFTA (1988b), EPB (1989), IMF (1984) and table A.10.

On the export side, the aim was to limit the amount of subsidy to match the decline in protection. This was done mainly by raising, in 1982, interest rates on export loans to the level of the general rate (tables A.13 and A.12).<sup>125</sup> Yet, exporters continued to benefit, *inter alia*, from preferential access to short (until 1988

<sup>124</sup> World Bank (1987:71, vol. 1) and Rhee (1987). The new technology industries comprise machine parts, general machinery, electrical machinery and electronic materials.

<sup>125</sup> According to Kim's (1991) estimates shown in table A.12, net export subsidies were eliminated in 1983. However, this tends to be misleading since the interest rate subsidy was calculated using the commercial banks' general loan rate, which, notwithstanding the liberalisation, was still controlled by the government.

and in the SMF's case up to now) and long term loans, and from tax free reserves.<sup>126</sup>

The cut in subsidies was accompanied by the introduction of a 'dirt-floating' exchange rate, linked to a multicurrency basket. This system led the PPP exchange rate to rise during 1984-85, probably offsetting the reduction on export subsidies (table A7). From 1986, though, given the diplomatic pressures caused by a huge commercial surplus with the U.S., the government was forced to appreciate the won, even though, in a PPP basis, it remained below its historical average. In March 1990, after being identified under the U.S. trade act as 'currency manipulator' (MTI 1990b:18), the Korean government adopted the so-called 'market middle rate system' that was supposed to be intervention-free.<sup>127</sup>

### Industrial organisation reforms

The government's long-standing 'interference' with the development of the industrial structure was also to be abandoned or 'neutralised'. That is, the anti-FDI, pro-*jaebol* and sectoral biases that until then had marked the government industrial policy were no longer desirable.

The reforms began with the FDI policy. In 1980, new sectors were opened to foreign firms and restrictions on projects wholly owned by foreigners were relaxed (Koo, 1985:179). In 1984 the positive list turned negative. As with import controls, all the

<sup>126</sup> Young (1987, 1989) and (USTIC 1985). As of April 1989, the major tax free reserves were for overseas market development, price fluctuations and export goods inventory. As for long term credits, they are provided by the Korea Eximbank for post-shipment financing or imports of producer goods, usually at an interest rate below that of the international market. Finally, exporters also continued to benefit from institutions like the KOTRA and Korea Traders association.

<sup>127</sup> According to this system, the exchange rate is set each day based in the middle rate prevailing in the interbank market in the previous day within "certain" limits. The liberal nature of this new scheme seems to be disputable. As the Financial Times (1990:11) put it by "giving the overwhelming power of the Bank of Korea in the tiny foreign exchange market—average turnover US\$ 200 million—claims that they can no longer influence the exchange rate are being treated with scepticism at home and abroad."

sectors not in the 'negative list' were to be 'fully' open to FDI, although not necessarily automatically approved.<sup>128</sup> The negative list was to be phased out until the early 1990s. As of 1989, the government was claiming that 97.5% of the manufacturing sectors was open to FDI. In addition, the restrictions on capital repatriation and on foreign ownership ratios were also abolished, and the range of tax incentives available expanded (Bark 1989:15).<sup>129</sup>

The next in line was the conglomeration policy. In 1981, the government passed a new law—the Anti-Monopoly and Fair Trade Act—devised to tackle market imperfections impeding trade and fair competition. It was supposed to mark the end of decades of tacit support to the *jaebols*, either through the financial market or by investment licensing. This act was followed later on by other anti-jaebol measures concerning: finance (in 1984, the top thirty conglomerates' share of total bank credit was frozen, and groups whose debt-equity ratio exceeded 500% have their access to new credit blocked); diversification (from 1985); and cross-investments (investments in affiliated companies were limited to 40% of a corporation's net assets in 1987). Moreover, from 1985, a number of sectors were reserved exclusively to SMF, mainly among suppliers of small parts and components to the machinery sector.<sup>130</sup>

<sup>128</sup> To qualify for the AA system, the project had to have a foreign equity share of less than 50%, amount up to US\$ 3 million, and not require tax exemptions.

<sup>129</sup> See Il-Hwan (1987:8) for incentive details. In March 1991, a Notification System was implemented and FDI incentives substantially reduced. This new system is supposed to automatically approve projects in the liberalised sectors, whose foreign ownership is less than 50%. In these cases, the foreign investors "will be able to start operations by simply notifying the contents of their investment to the authorities concerned." (MOF 1991:7) On portfolio investment, the government began in 1981 to open the market to foreign investors through domestic investment trusts. Direct dealing by foreigners, though, was postponed to the first half of the 1990s. Exchange controls only began to be relaxed as late as 1987, but were tightened in 1989 when the current account surplus, which arose in 1986, began to wither away. See Amsden and Euh (1990) and BOK (1985:8).

<sup>130</sup> See FEER (1985, December 12 and 1988, September 29) and World Bank (1987, vol. I: 93).

Apart from the financial sector reforms (taken up later), the sectoral bias of the government's policy was to be tackled mainly through changes in fiscal incentives, which were to be reduced and made sector neutral. At first, direct tax incentives (e.g. tax deductions) were phased out and replaced by indirect ones (e.g. preferential depreciation). These, in turn, were concentrated on 'functional' activities, notably R&D, with industry-specific incentives being restricted to fewer 'strategic' sectors (Rhee 1987).<sup>131</sup> In 1986, the search for neutrality went further with the seven existing industry-specific promotion laws being replaced by the Industry Development Law. This law, instead of naming 'strategic' industries, only specified two broad categories entitled for government support, i.e., sectors that "would be difficult to attain international competitiveness despite a comparative advantage for the Korean economy" and "structurally inefficient declining industries in which Korea is gradually losing competitiveness." Government intervention in these categories was limited to 3 years.<sup>132</sup>

### Liberalising the factor markets

#### *Financial sector*

On the financial market, the liberalisation began with a package of measures aimed at minimising the government's controls over credit allocation, and at reducing its jaebol and HCI biases. This package included the privatisation of the commercial banks (1981-83), the relaxation of the requirements for establishing non-banking financial institutions (NBFI), and the unification and overall increase of the interest rates (table

<sup>131</sup> The selected strategic industries were naphtha cracking, iron and steel, machinery, electronics shipbuilding and aviation industry. As of 1984, the functional incentives included accelerated depreciation, preferential fiscal treatment of reserves for various purposes and losses, and exemption or reduction of income taxes. The activities eligible included SMF investment, R&D and overseas investment or other overseas operations (Bohn-Young 1984:36).

<sup>132</sup> Kim, J. (1989:35). The decisions to intervene in a specific sector were now to be made not only by government ministries but also by 21 new advisory councils under the Ministry of Trade and Industry (MTI) acgts, made up of entrepreneurs, academics and public researchers (World Bank 1987, vol. I).

A.13). These measures were complemented by the decision to earmark 35% the commercial bank credit and 55% of the local bank loans to SMFs, and to phase out the policy loans (including short-term export loans), which, as result, had their share of domestic credit reduced from around 60 to 45% over 1979-86 (table A.21).<sup>133</sup> These measures were apparently successful in reducing the HCI and large firm biases in credit allocation (chart 1 and table 7).

In a second stage, the government sought to reduce the firms' 'excessive' dependence on credit by complementing the initial package with incentives and restrictions to expand equity financing. This was done mainly by the enforcement of lower debt-equity ratios and by the introduction of tax breaks for stock ownership. This drive towards equity financing affected particularly the *jaebols*, which, as said before, had a freeze imposed on new loans since 1984. These measures led to an immediate reduction on the firms' debt-equity ratio, but despite the stock market boom in 1987, the ratios remained well above those of the OECD (table A.25).<sup>134</sup>

#### *Human capital and S&T*

The government conversion to liberal economics did not go far enough to negate the existence of market failures in human capital formation and S&T. Adopting the 'weaker version' of the neoclassical approach (Lall 1991a), the rhetoric was that interventions in these areas were 'functional' or sector neutral, and accordingly, did not distort relative prices. Predicting, then, a further shift in comparative advantage towards technology-intensive sectors, the government stepped up investments in engineering and scientific education, R&D and S&T infrastructure. Both the R&D share of GNP and the number of

<sup>133</sup> For details see, e.g. BOK (1985), Cole and Cho (1986) and Kang (1989).

<sup>134</sup> In 1980, the stock market as a percentage of GNP was a meagre 7%. It started then to grow steadily reaching 14.3% in 1986, and jumping to 72.5% in 1989. In 1984, the same figure for Japan was 48.0% (Amsden and Euh, 1990, and World Bank, 1987:111, vol. I).

researchers per capita more than doubled over the period (table A.22).

There were, though, important changes in the implementation of this policy. In a bid to increase private R&D outlays, financial and fiscal incentives were greatly increased, which undoubtedly contributed to the rise in the private sector's share of total R&D from 32 to 81% over 1980-88.<sup>135</sup> There were also institutional changes, with state research institutes being merged for the sake of greater efficiency in R&D management, and the division of labour between these institutes, universities and the private sector were more clearly defined. Universities were to concentrate on basic science; government institutes were to provide a link between the universities and the private sector, while focusing on the development 'core and original' technology of 'national interest'; and private firms were to undertake 'commercial' R&D (MOST 1988 and Lee et al. 1991).<sup>136</sup>

Alongside the drive to promote indigenous technological effort, restrictions on technology licensing were eased, with the government raising the ceiling on the value of contracts needing approval, and exempting an increasing number of industries from the restrictions (Enos and Park 1988:37). As a result, and given the changes in the industrial structure, royalty payments more than doubled between 1977-81 and 1982-86.<sup>137</sup>

<sup>135</sup> The preferential tax treatment for R&D (i.e. tax credit or exemption, tariff exemption and preferential depreciation) was extended to foreign engineer's wages, corporation tax of research institutes, reserve funds for technology development, research facility investments, job training expenses, imports of R&D equipment, royalties from technology sales and venture business. The financial incentives included preferential loans from the KDB and Small and Medium Industry Bank, direct subsidies from special government funds, as well as loans and equity investments from venture capital companies set up by the government (Rhee 1987).

<sup>136</sup> Other measures included the set up of 'science towns' (4 were planned until the year 2000) to take advantage of externalities associated with localisation, and a 'Long Range Plan of Science and Technology towards the 2000's', which, *inter alia*, envisage R&D expenditures at 3% of GNP. See Most (1988).

<sup>137</sup> Kim, L. (1989:5). Since June 1988, screened contracts have been those with a duration over 3 years and with royalties exceeding \$100,000 or 2% of sales. Tax exemptions were limited to 'high tech' industries (MOST 1988:41).

Assessing the results.

*Overall performance*

Considering the evidence above, it seems undeniable that Korea has moved into a policy regime closer to the neoclassical ideal. The burning questions, though, are to what extent and under what circumstances. To answer these questions becomes particularly important given Korea's impressive export, BP and overall macroeconomic performance during the liberalisation.

Exports grew 12.2% p.a. over 1980-89, outperforming those of the 'world' (4.1%) and middle-income countries (5.4%).<sup>138</sup> On the import side, despite the liberalisation, Korea was not flooded by imports, nor suffered any significant industrial dislocation. Table 14 shows that after seven years of liberalisation, imports had not made any substantial gain on the domestic market, except for lumber & wood, non-metallic, chemicals and textile & leather. Even in these sectors, the rise in import penetration appears to have been more related with Korea's lack of natural resources and the move towards resource-intensive sectors, than with the dislocation of local producers.<sup>139</sup>

The dislocation-free hypothesis seems to be further confirmed by three other pieces of evidence. First, by the data on sectoral production and employment, showed in table 15. The picture that emerges from this table—with all sectors presenting significant growth in output, employment and establishments—is in sharp contrast, e.g., to Chile's experience of the 1970s.<sup>140</sup> There, the liberalisation program led to a radical change in the industrial structure, with seven out of 20 manufacturing sectors having lower levels of production in 1980 than in 1970 (Edwards, 1985:232). Second, by the stability of Korea's import composition, which in 1989 was still dominated by capital and intermediate

**Table 14: Korea's Import Penetration Ratios, 1980-87.**

Sectors	imports / domestic production				imports / domestic supply			
	1980	1983	1986	1987	1980	1983	1986	1987
Agriculture	21.9	17.4	14.5	15.7	18.8	15.5	13.2	14.2
Mining	536.9	517.8	324.6	330.9	85.0	83.4	77.0	77.5
Food, bev. & tobacco	7.5	5.6	5.7	6.6	7.1	5.4	5.6	6.5
Textile and leather	5.4	7.3	7.7	8.4	7.9	11.5	12.4	13.6
Lumber and wood	2.3	4.8	8.5	8.8	3.1	5.2	8.9	9.4
Paper, printing.	16.9	12.1	14.6	14.8	15.3	11.2	13.3	13.6
Chemicals	15.6	17.2	20.1	21.9	14.9	16.4	19.6	21.1
Nonmetallic	4.4	7.0	8.5	8.3	4.9	7.3	8.6	8.5
Basic metal	21.8	18.7	22.6	22.7	21.6	19.0	21.3	21.1
Metal and machinery	50.3	37.3	35.2	34.9	42.4	36.5	36.0	36.5
Other manufacturing	7.5	7.4	5.5	5.6	13.8	13.8	12.6	14.5

Source: Bank of Korea, Korea's Input-Output Tables.

goods (table A.15). Finally, by the estimates for the income elasticity of imports, which reveal that both the elasticity range

<sup>138</sup> Table A.8 and World Bank (1990:204). Korea's share of world manufactured exports rose from 1.4 to 2.5% over 1980-87 (UN ITSY, HIT).

<sup>139</sup> The figure for textile and leather was heavily influenced by the lack of raw material for the leather industry. For instance, in 1983, the import penetration ratios for textile, apparel and leather products were 19%, 4%, and 58%, respectively.

<sup>140</sup> Information at a more disaggregated level is scarce, but the few existent studies also suggest that, at least until 1985, the adjustment cost was limited. See Young (1986:55) and Rhee (1987:65).

## Texto para Discussão

and its average declined between the 1970-79 and 1980-88 periods.<sup>141</sup>

**Table 15: Korea's Rate of Growth in Production, Employment and Number of Establishments by Industry, 1980-89 (%).<sup>1</sup>**

Industry	Production (1985 Won)	employment	establishments (units)	Change in the share of total Manuf. value added (%) <sup>2</sup>
Food, bev. & tobacco	7.7	2.3	0.2	-5.2
Textile and leather	6.4	2.4	7.6	-4.2
Lumber and wood	8.8	4.8	4.3	-0.2
Paper, printing.	8.9	6.9	4.2	0.0
Chemicals	9.1	5.1	8.4	-3.0
Nonmetallic	9.0	2.7	3.3	-1.4
Basic metal	11.5	3.0	5.4	2.0
Metal & machinery	18.7	8.2	11.2	14.1
Other manufacturing	7.4	5.9	1.1	0.4
Total manufacturing	11.6	4.8	7.3	-

<sup>1</sup> Annual compound average rate. <sup>2</sup> 1980-1988. Total does not add to zero due to rounding. Source: EPB (a) and EPB (b).

If Korea was not flooded by imports, it was not swamped by FDI either. Table 16 show that, despite the more liberal legislation, by

<sup>141</sup> For the 1970-79 period, the average elasticity (arithmetic mean) was 1.26 and varied between 0.95 and 1.35, whereas for 1980-88 the average was 0.74 and the range 0.64-0.83. The regression equations for the two periods were,  
 (1)  $M = -0.99 + 0.33 \text{ GNP}$   
 (-0.84) (13.4)  
 $R^2 = 0.96$   
 (2)  $M = 7.86 + 0.25 \text{ GNP}$   
 (5.10) (16.5)  
 $R^2 = 0.98$   
 , whereas M is imports and GNP is the gross national product both at 1985 US dollars.

the end of the 1980s, its FDI indicators continued to trail badly those of the other NICs and second-tier NICs. Figures for the foreign firms' shares of each industrial sector were not available, but if we take into account that the FDI share of gross domestic capital formation during 1979-85, was below that of the 1966-78 period, an educated guess would be that Korea's industry has not suffered from denationalisation either (table A.17).

**Table 16: Foreign Direct Investment Stocks: Values and Relative to GDP.**

Country	Year	Stock <sup>1</sup>	% of GDP	Country	Year	Stock <sup>1</sup>	% of GDP
Korea	1987	2.8	2.3	Mexico	1987	19.3	13.6
Taiwan	1988	8.5	8.1	India	1984*	1.1-1.5	0.6-0.7
Hong Kong	1985*	6.0-8.0	20-26	Thailand	1986*	4.0-5.0	10.5-13.1
Singapore	1986	9.4	53.8	Indonesia	1987	7.9	11.3
Brazil	1987	28.8	9.6	Kenya	1984	0.6	12.0

<sup>1</sup> US\$ 10<sup>9</sup> \*estimated. Source: Lall (1990, table 4)

The overall result of these trends, limited inflow of FDI notwithstanding, was a dramatically improved BP, with Korea having in 1986, not only its first trade balance surplus since the Korea war, but also a current account surplus. As both surpluses persisted for four years, Korea was able to reduce considerably the burden of its foreign debt (table A.8). To complete the rosy picture, the external balance improvement took place in a high-growth (10% p.a.) and low-inflation environment (5.2% p.a.), with the economy roughly matching the growth performance of the previous periods, while presenting a superior inflation record (table A.3).

If the neoclassical assessment of the HCI drive is accepted, the rational follow-up would be to attribute all this remarkable economic performance to the efficiency gains produced by the liberalisation. One could say that the reinstatement of a neutral, outward-looking incentive regime led the economy back to the right relative prices, and the rapid export and overall growth that followed were its logical consequence.<sup>142</sup> The trouble with this

<sup>142</sup> Rhee's (1987) and Yoo's (1990) analyses follow along these lines.

interpretation, though, is that it has both empirical and logical problems.

First, as the previous sections have shown, one could not talk of a return to an outward-looking, hands-off policy since the HCI strategy was solidly committed to export growth, and Korea had never had a neutral incentive regime.<sup>143</sup> Second, despite the 'distortions', the performance of Korea's exports and economy during the 1960s and 70s was as good as that of the 1980s, except perhaps for inflation. And third, if it is assumed that Korea's policy regime really shifted to a neutral mode during the 1980s, and that is the reason the Korea economy performed so well, why there was no major structural adjustment? Or to put it differently, if Korea's experience with intervention during the HCI drive was a complete failure, why was the transition to a market-led economy virtually dislocation-free?

A more consistent explanation, capable of dealing with these points raised above, has to take into account both the efficiency of the past government interventions, and the timid character of the liberal reforms

*The efficiency of previous interventions.*

It can be said that the government intervention, not only in the 1970s, but also in the 1960s, prepared the way to the 1980s liberalisation. By using financial, fiscal and trade instruments to overcome market failures in the product and factor markets, the government created the conditions by which a transition to a more liberal economy would be particularly beneficial. Without

<sup>143</sup> These points are amazingly underpinned by later statements of the Korean government. For instance, in 1989, the deputy prime minister described the economic policy of the 1960s and 1970s as follow: "The economic policy regime of those days has also given rise to a mercantilist trade policy. Exports were promoted, and imports restricted, to save scarce foreign exchange and to promote import substitution. Imports were large, not due to import liberalisation, but rather because they were the necessary minimum; importing to encourage market competition or to increase consumer welfare have only recently become considerations." EPB (1989b: 4). Underlining is ours.

strong local firms—nurtured by decades of protection, abundant long-term credit, export-orientation discipline, and supported by an increasingly sophisticated human capital stock and S&T infrastructure—liberal reforms would have played havoc in the Korean manufacturing sector, hampering the economy ability to adjust to changes in comparative advantages. On the other hand, after achieving a competitive and diversified industrial structure, continuation of widespread intervention would be ill-advised because key market failures had already been overcome, and because of the danger of 'government failure' in administering an increasingly complex economy.

The lack of major dislocations during the 1980s liberal reforms comes as an important evidence to support this interpretation. As Chile's experience has shown, had government intervention not been efficient and market-failure oriented, Korea would have found it difficult to maintain a virtually uninterrupted two-digit export growth for another decade, let alone its overall growth and inflation record. The limited adjustment costs, however, cannot be entirely ascribed to the efficiency of the government's past policies. It has also a bearing on the gradualist approach of the reforms, and on the government persisting determination to intervene, both functionally and selectively, wherever market failures were still relevant despite the liberalism of its rhetoric.

*How gradual and liberal were the reforms?*

*The product market.*

Beginning with trade reforms, Korea took more than a decade to do less than Chile did in five years. While the latter removed all the NTBs and reduced all tariffs to a uniform 10% in a 5-year period (Edwards, 1985:231), the former, as late as 1987, had close to 30% (in value terms) of manufactured imports still under NTBs, and at least 27% of the importable items under some sort of contingency measures (tables A.14 and A.26). In 1988, its average tariff was still 18%, and the tariff structure was anything but uniform (table 13).

Behind these figures seems to have been a strategy that was both cautious and selective. Cautious because local firms were not only given plenty of time to adjust to competition in their home market, but were also assured by safeguards in the trade legislation that any major dislocation would be avoided.<sup>144</sup> Selective because industries where the static and dynamic advantages of a protected domestic market were substantial were the last to be liberalised, and in some cases only partially. The 'new technology' industries are a case in point. They were favoured with special laws that effectively barred imports of items like computers, telecommunication equipment, semiconductors, machine tools and electronic consumer goods.<sup>145</sup>

After 1987, the prudence and selectivity of the government's strategy was somewhat compromised by heavy pressure from Korea's biggest trade partner—the U.S.—which forced a swift removal of NTBs and contingency safeguards (tables A.14, A.9 and A.26).<sup>146</sup> Yet, in 1990, the government showed that it was not prepared to live passively with the vagaries of a free trade regime, particularly when this means competing with foreign firms,

<sup>144</sup> Import liberalisation was accompanied by a build-up of 'contingency' safeguards. The government added a new 'adjustment' tariff (up to 100% of the legal tariff) to the already existent arsenal of 'emergency' tariffs, import quotas, import surveillance, special laws, anti-dumping and countervailing duties. See World Bank (1987:71, vol. 1) and Young (1987:52) for details.

<sup>145</sup> In the case of computers, for instance, the government introduced in 1982 a presidential order placing all computer related imports under strict MTI and Electronics Industry Association supervision. This regulation effectively prohibited imports of mini, micro and personal computers, together with its peripherals and parts. The imports of 'mainframes' were permitted only if accompanied by technology transfer. Moreover, the regulation gave MOST the power to require governmental agencies to purchase Korean-made computers and peripherals where appropriate. The imports of computers were finally liberalised in 1988, but the government procurement scheme remained in place. The rest of the sectors mentioned were all granted with similar legislation. See, e.g. Chung (1986), Allgeier (1988) and Evans and Tigre (1989).

<sup>146</sup> See MTI (1990b) and Young (1988, 1989) for details of the Korea-US trade relations. In addition to NTB removal, an administrative reform was carried out in 1987, that was supposed, *inter alia*, to make contingency protection less restrictive. Both import surveillance and contingency measures were placed under the control of commissions sponsored by the MTI and the MOF, respectively. See IMF (1988:301) and Young (1987, 1989).

which have time, scale, technology, a well functioning capital market and a developed S&T infrastructure on their side (and not seldom their own governments). Therefore, amid a return to a trade and current-account deficit caused by the combined action of speedier liberalisation, currency appreciation, and higher labour unit costs, Korea resorted again to NTBs to stop imports, particularly of consumer goods.<sup>147</sup> The NTBs took the form of a tacit anti-import campaign, which used the *jaebols'* tight control over distribution to curb imports.<sup>148</sup>

On the industrial organisation side, the reforms could not be more pragmatic. Despite all the talk about enhancing the role of the price mechanism, the government continued to play a key role in shaping Korea's industrial structure and controlling the influx of FDI. This was already evident in the beginning of the decade, when the government decided to bypass a market solution to correct the HCI drive excesses. Commercial banks were 'persuaded' to support mergers and capacity reduction programs in the distressed sectors, whatever their expected returns. The underlying reasoning, as Young (1986:52) put it, seems to have been that industrial adjustment had to precede import liberalisation and not vice-versa. As in its 'damned' past, the government was again trying to prevent that the weakness of the capital markets and their short-termism put years of capability building in danger.<sup>149</sup>

<sup>147</sup> See tables A.7 and A.8.

<sup>148</sup> FEER (1990, July 19), for instance reports two incidents occurred during 1990, involving U.S.-made refrigerators and cars. It is worth noting that up to 1989, the reforms did little to establish a more competitive market in foreign trading, wholesale and retailing. Until that year, trade licenses were conditional on export performance and were restricted to foreign companies that had production facilities in Korea. In addition, only nine out of 66 retail and wholesale business categories were open to foreign investors. See EPB (1989).

<sup>149</sup> The major industries involved in the 1980-83 restructuring program were: heavy power-generating equipment (reduction in the number of producers); motor Vehicles (mergers and market segmentation); shipbuilding (market segmentation); fertilisers (mergers and capacity reduction); electronic exchange (reduction in the number of producers); smelting of copper (mergers); shipping (mergers and capacity reduction). See, e.g., World Bank (1987, vol. 1), Rhee (1987) and FEER (1981, June 5).

The government determination to continue to intervene was also written 'all over' the 1986 Industrial Development Law (IDL), despite assurances to the contrary.<sup>150</sup> The use of loose categories such as 'sunrise' and 'sunset' industries, left plenty of room for the government to intervene to avoid the occasional socially damaging market solution. That is what happened for instance, between July 1986 and December 1987, when no fewer than eight industrial sectors were designated for a three-year rationalisation program under the IDL provisions, with the government bailing-out financially distressed firms, and defining the sectors' number of competitors and overall capacity.<sup>151</sup> Again, in a context of imperfect capital markets, the government seem to have had no anxieties to avoid the risks of a long-drawn-out market solution, with its potentially disruptive effects in terms of bankruptcies, asset-stripping and denationalisation.

On the issue of conglomeration, the same pragmatism seems to have prevailed. With the *jaebols* being the backbone of Korea's economy and with market imperfections such as economies of scale and scope being neither temporary nor 'reparable', it is not surprising that the government's actions fell well short of its rhetoric. To begin with, the Fair Trade Act did not restrict conglomeration (Lee 1986). Second, the majority of the credit and diversification restrictions, were either relaxed by the government or skirted by the *jaebols*. In the case of the former both things apply, since they were periodically relaxed according to the economy's performance and the industry's restructuring needs, and the *jaebols* used the financial liberalisation to diversify into the financial sector. As to diversification, restrictions were apparently side-stepped by starting-up

<sup>150</sup> The World Bank (1987:106, vol. 1), c.g. stated that the IDL lacked, "A mechanism for explicitly picking winners."

<sup>151</sup> The sectors selected were textile & fabrics, ferro-alloys, dying and fertiliser, as sunset industries; and automobiles, diesel engines, heavy electrical equipment and heavy construction equipment as the sunrise ones (Kim, J.H. 1989). In an interview with FEER (August 4, 1988), Korea's finance minister stated that between 1986-87, the government bailed-out 78 bankrupt companies, with the government and commercial banks writing-off US\$1.36 billion in debts, and rescheduling, for periods as long as 30 years, another US\$8.4 billion.

nominally independent companies using 'retired' senior executives (FEER 1988, Sept. 29). More to the point, as noted earlier, the government's own restructuring exercises continued to promote concentration as a means to achieve efficient market structures.<sup>152</sup>

No wonder economic concentration continued to rise. Both the top 5 and 30 *jaebols* increased their share in total shipments during 1977-85.<sup>153</sup> In 1985, the competitive markets' share of the total shipments still amounted to only 37.8%, slightly better than in 1977, but still lower than in 1970 (table A.16). In addition, the ratio of the top 10 *jaebols*' sales to GNP climbed from 48.1 to 68.3% over 1980-89.<sup>154</sup>

Finally, on FDI deregulation, the government did not take the naive view that Korean firms were prepared to face the imperfect TNCs competition in its own market, without any sort of safeguard. Despite the changeover to the negative list and the increase in the number of deregulated sectors, when one takes into account other scant but telling evidence, the general impression is that the government continued to be very much in control, deciding when, where and in what terms FDI would take place.

For instance, investments in sectors not listed were still subject to screening, unless it was majority owned by local firms, and relatively small (under \$3 million). Investments would not be allowed to go forward if the sector in question was under

<sup>152</sup> A 1988 EPB survey revealed market entry regulations in 84 industries, price controls in 26, equipment regulations in 10 and quantity regulations in 15 (PCRER, 1988: 75).

<sup>153</sup> Lee et al (1986) and PCRER (1988). The data for exports present a similar trend, with the share of the five largest groups increasing from 24% to 27% during 1977-85, despite the two-digit export growth (FEER September 29, 1988).

<sup>154</sup> FEER (1990, March 1). This indicator cannot be taken as an absolute measure of economic concentration because of the double-counting problem. Further evidence of the increase in concentration is the 1988 presidential report that emphasised that, "Conglomerates dominate entire markets not only for materials, manufacturing, and assembly but also for sales, trade, finance, and real estate by taking advantage of superior financing ability and information resources." PCRER (1988:72).



'rationalisation requirements', which, as of January 1989, included key sectors such as textiles, ferro alloy, fertilisers, automobiles, diesel engines, heavy electrical equipment and heavy construction equipment (MTI 1990b). Still depending on the sector aimed, investments could also face export, local content and local equity participation requirements.<sup>155</sup> Lastly, at least until 1987, foreign investors had to live without effective protection for intellectual property. It was only in 1987 that Korea enacted a series basic intellectual property laws, but even then problems of enforcement led the government to establish the Intellectual Property Rights Task Force in December 1988.<sup>156</sup>

#### Factor markets

In the financial markets, as the above analysis might have already suggested, the government continued to have a strong influence in credit conditions and allocation, despite the commercial banks privatisation and other deregulating measures. Behind this apparent contradiction lies what can be called a two-track financial deregulation. Whereas the NBFIs had establishment requirements, loan allocation policy and interest rates semi-deregulated in 1985, the commercial banks, as late as 1990, still had to cope up with Ministry of Finance's suggestions concerning their officers, loans and interest rates.<sup>157</sup>

<sup>155</sup> For example, as of 1985, 100% foreign owned electronics manufacturers were obliged to export at least 50% of their production (USITC 1985), whereas up to January 1990, sectors like excavators, heavy electrical equipment, diesel engines, optical fibres and electronic switching systems were subject to local equity participation requirements (MTI 1990b). Korean companies that were authorised to sell foreign goods or use licensed trade marks were also subject to export requirements. See USITC (1985). These and other restrictions were somewhat relaxed in the beginning of the 1990s, under the 'Super 301 Accords' with the U. S. .

<sup>156</sup> EPB (1989:23). As if the regulations were not enough, foreign investor also had to face an unsympathetic bureaucracy very keen on tax audits on foreign companies. See Financial Times (1990, May 16) and FEER (1989, June 15).

<sup>157</sup> In December 1988, the ceiling on most lending and deposit rates for instruments with maturities of more than two years were lifted. However, restrictions on short term deposits remained (Financial Times 1990, May 16).

Even though this asymmetry of the financial reforms can be justified on the grounds of the banks' high proportion of non-performing loans (mainly for shipbuilding and construction), there is no doubt that it also allowed the government to maintain control, directly or indirectly, over the majority of the loanable funds.<sup>158</sup> In fact, some of the key 1960s' and 1970s' characteristics of the financial system were well and alive during 1980s.

For instance, credit allocation continued to be highly selective. Resources continued to be channelled into manufacturing investment, 'strategic' sectors and activities, at rates still below the private opportunity cost. As noted earlier, banks were forced, their financial health notwithstanding, into a virtually permanent industrial 'restructuring' program. The 'new' technology sectors were particularly favoured, and exporters continued to have preferential access to credit. Moreover, as the unification of interest rates was not accompanied by their deregulation, bank credit continued to carry a reduced but still significant financial subsidy. As of 1989, the difference between the general loan and the deregulated corporate bond rates, ranged from 2.7 and 5.7% depending on the client credit-worthiness.<sup>159</sup>

Moreover, there are signs that credit allocation continued to favour large firms. Even though, as noted earlier, the anti-jaebol and pro-SMF measures seem to have had some success in reducing this bias until 1984 (table 7), we have already given two good reasons to believe that this is tendency was reversed after 1985. That is, the periodical relaxation of the credit controls, and the *jaebols'* diversification into the financial sector. The first reason is particularly relevant after 1985, when credit controls were significantly relaxed because of the collapse of one major conglomerate. This seems to be confirmed by the data available.

<sup>158</sup> The government direct and indirect control over loanable funds (ratio of the deposits at commercial banks and development institutions to total deposits) was 71% in 1980, 70.2% in 1985 and 42% in 1989 (BOK c). Table A.21, in turn, shows that as of 1986, the share of policy loans was still 45%.

<sup>159</sup> KDI (1991:24). As of 1986, the gap concerning the curb market rates was also sizable, amounting to 14.3% in real terms (table A.13).

which shows that the top ten *jaebols'* share of total borrowing jumped from 25 to 53% over 1986-89 [FEER (1988, Sept. 29) and (1990, March 1)].

The second reason was very much a result of the government two-track liberalisation. The NBFIs not only were deregulated faster, but were also freed of the ownership limitations imposed on banks. Therefore, the conglomerates had the opportunity to diversify into a segment of the financial sector, which, given their relatively freer asset management and interest-rate policies, increased their share on total deposits from 10 to 18% over 1980-89 (BOK 1990c, Feb.). It was not possible to find reliable data on the NBFIs ownership structure, but even government officials agree that they are entirely dominated by the *jaebols*.<sup>160</sup>

These characteristics of the financial reforms seem to indicate that despite suggestions that their final objective was a financial system based on the liberal, capital-market based model of the U.S. and U.K., in practice though, they have moved in the direction of a credit-based financial system along the Japanese lines, where the short-termism and myopic behaviour of the capital-markets are compensated by heavy involvement of the banks in the financing of manufacturing investment, forced by strong government 'guidance' and conglomerate ownership.<sup>161</sup>

The last point on the factor market liberalisation concerns the 'functional' S&T policy. Even though, in theory, the government's higher investments and incentives could have benefited all firms in all sectors, in practice, 'strategic' technology-intensive industries were the main beneficiaries. For

<sup>160</sup> BOK (1985:25), for instance, states that "...most of insurance companies, and large short-term credit companies are owned or controlled by the industrial groups". Despite regulations that limited the maximum ownership of any single shareholder to 8% of the total capital, not even the commercial banks seem to have escaped from *jaebol* dominance. As of 1986, the top 10 *jaebols* held together between 22.4% to 56.5% of each commercial bank's capital. Individual holdings in certain cases were as high as 23.8%. See World Bank (1987:92, vol. 1)

<sup>161</sup> In 1991, the government was again using its control over banks to force the *jaebols* to reduce the scope of their business and increase therefore the advantages of specialisation. See Korea Economic Journal (1991, April 29).

instance, on top of import protection noted earlier, industries such as computers, semiconductors, telecommunications and machine-tools were particularly favoured by government procurement, and by direct subsidies coming from special government funds, set up to develop 'key technologies'. Most of these funds were linked to the so-called 'National R&D Projects', where the developing costs were usually split between the government and hand-picked private firms, with the former typically bearing most of the expenses.<sup>162</sup> So, under the guise of 'functional' S&T policies, the government not only continued to intervene to prop up local technology effort, but it did so by clearly targeting industries seen as having the potential to bring externalities and dynamic comparative advantages.

#### Summing up.

From the arguments outlined above, it seems quite clear that, despite the official rhetoric, the Korean government conversion to the liberal cause was far from dogmatic. For all the advances towards a more liberal regime, one cannot help noticing that far from becoming an anathema, government intervention continued to be used selectively, and to be largely driven by the aim of giving local firms the best possible chance of succeeding in the domestic and international markets. Market solutions or liberal models were only adopted when the government was sure that, instead of letting local firms disadvantaged because of imperfections in both local and international markets, it would increase their competitiveness.

<sup>162</sup> During 1982-88, the government invested \$311 million in National R&D projects against \$218 million for the private sector. As of September 1989, the MITI was about to set-up a new five-year technology development project that would include microelectronics, machine tools, robotics, aerospace, new materials, fine chemicals, laser and biotechnology [FEER 1989, Sept. 28]. In an interview to Korea Trade & Business (November 1989), the director of MITI Import Policy Division explained why the government was targeting technology-intensive industries. "The comparative advantage of the industries among the Asian newly industrialised economies will be shifted from textile, shipbuilding and iron & steel, to knowledge-intensive industries such as automobile, machinery and electronics in the 1990s. On the other hand, advanced countries will keep the comparative advantage in areas such as biotechnology and aerospace."

In the product markets, the government continued seek protection, within the trade relations constraints, to that industries where dynamic and static economies of scale were relevant, and this included not only trade barriers but also FDI protection. Likewise, it did not hesitate to intervene to reshape the industrial structure towards more efficient and sustainable configurations, avoiding the risks of a protracted and costly market-led solution. In the factor markets, equity financing and private ownership of the financial system were encouraged, but on the other hand, in order to protect the industry from the short-termism and myopic behaviour of the capital markets, the bank's commitment to long-term financing was promoted by the governments' heavy hand and by conglomeration ownership. Finally, indigenous technological effort was encouraged not only by functional measures but also by targeting the technology-intensive industries where the existence of externalities was expected to promote the technological capabilities of the whole industry.

***V-The overall picture.***

The history of Korea's industrialisation can be traced back to the first decades of this century when under Japanese occupation a sizeable and diversified industrial structure was built. Although impressive, the shortcomings of this 'colonial industrialization' became clear after WWII, when the Japanese withdrawal left Korea with limited industrial skills, with a poorly integrated industrial structure and without its main market. The North-South split followed by the civil war made things worse, with Korea losing most of heavy industry and power supply to the North, and having what was left of its industrial base, destroyed. The government's response was to adopt an IS 'strategy', which succeeded in rebuilding the light industry and in improving the human capital stock, but that failed to deliver growth and reduce dependency on aid. This, however, appears to have been not so much the result of a 'disastrous' industry and trade bias, but the inexorable outcome of a situation that combined the difficulties of learning and reconstruction, with a government more interested in its political survival, than in removing the market failures blocking industrial and economic development.

The 1960s saw the military taking over and responding to the failures of the 1950s with what became known as an outward-oriented policy regime. Building on the industrial reconstruction of the IS period, this strategy was remarkably successful in promoting industrial, export and economic growth. Neoclassicals were quick to attribute this success to the allegedly neutral, hands-off and outward-looking traits of the new regime. Yet, even though the regime was undoubtedly outward-oriented, and the economy was opened up, it was not market, industry or firm neutral, nor protection for the domestic market was low. Behind this paradox was concerted government action to overcome market failures in the product and factor markets, which allowed Korea to fully exploit the advantages of an open economy, without the drawbacks of a free-trade regime.

In the product market, a selective trade regime was set up, which granted exporters free access to producer goods at world prices, while offering the light industries and selected heavy industries an exclusive domestic market where to reap static and dynamic economies. This was complemented, first, by a conglomeration policy that optimised these economies at firm level, and that allowed an early entry to the export market via cross-subsidisation and price discrimination. And second, by a restrictive FDI policy, which protected local firms and capabilities from the imperfect competition of TNCs, and secured a prompt private sector's response to local incentives. In the factor market, government intervention ensured that manufacturing investment and exports would not be hindered by the lack of proper financing or interest rates above the socially desirable, and was also instrumental in forging local conglomerates. Finally, intervention also prevented the acquisition of technological capabilities from being hampered by a poor stock of human capital, poor S&T infrastructure or by local-firms' under-investment in indigenous technological effort.

In the 1970s, concerned mainly with factor price changes, the government promoted a shift in the industrial structure towards the HCs. Contrary to what Neoclassicals claim, this 'push' did not involved major alterations in the policy regime. It remained outward-oriented—the very reason of the 'push' was to maintain high export growth in the face of changing comparative

advantages—and there was no significant change in the pattern of government intervention. There were though some adjustments. Given the scale of HCI market imperfections, adjustments were made in the policies towards the product and factor markets to help local firms to overcome the high entry barriers. That is, HCIs were granted greater, but still selective, import and FDI protection; preferential credit was concentrated on these industries and on the agents that would carry out the investments: the *jaebols*; and, to meet the HCI technological requirements, government investment in human capital and S&T was stepped up.

Even though policy mistakes happened, the 'HCI push' results had little to do with the apocalyptic picture that its critics like to paint. Industrial, export and economic growth were maintained at two digits, thanks to the exceptional performance of the HCIs, which, despite their infancy, began to export very early in the day, boosted by government incentives and the *jaebols*' ability to cross-subsidise and price-discriminate its products. By targeting the HCIs, the government avoided a situation where a steep rise in labour costs would have fatally compromised the competitiveness of the light industry, whereas, given the market imperfections in the HCIs, the private sector would have been, at best, slow to respond to the factor price changes. The overall result would have been a poor industrial and export performance, not only in the 1970s but throughout the 1980s.

Finally, in the 1980s, the government moved to liberalise the policy regime, amid a misleading and politically convenient criticism of state intervention in the previous decade. If anything, by overcoming market failures in the product and factor markets, state intervention had created the conditions by which liberalisation would be particularly beneficial. This and the gap between the government's rhetoric and its action have to be taken into account when one examines the remarkable industrial and export performance of the Korea economy during the 1980s. It seems quite clear that the government, notwithstanding its rhetoric, continue to intervene selectively to ensure that 'irreparable' market failures did not prevent Korea from fully exploiting its static and dynamic comparative advantages.

Appendix

**Table A.2: Shares of Heavy and Chemical (HCI) and of Light Industries in Korea's Manufacturing Output, Value Added and Manufactured Exports. 1953-89**

Variable	Industry	1953	1960	1972	1976	1980	1988	1989
manufacturing output <sup>1</sup>	HCI	20.7	25.2	32.0	44.4	51.9	59.6	60.9
	Light	79.2	74.8	68.0	55.6	48.1	40.4	39.1
manufacturing value added <sup>2</sup>	HCI	n.a	n.a	36.7	43.9	49.2	62.0	63.5
	Light	n.a	n.a	63.3	56.1	50.8	38.0	36.5
manufactured exports <sup>3</sup>	HCI	19.9	7.2	24.2	33.1	45.6	55.5	n.a
	Light	80.0	92.8	75.8	66.9	54.4	44.5	n.a

<sup>1</sup> At current prices. <sup>2</sup> At 1985 constant prices. <sup>3</sup> At current prices.  
 Note: HCI includes industrial chemicals, petroleum refineries, other nonmetallic mineral products, basic metals, fabricated metal products, machinery, electrical electronic machinery and appliances, transportation equipment and precision equipment according to the Korean Standard Industry Classification. Source: Economic Planning Board as quoted by Suh (1975:204) for 1953 and 1960, and EPB (a) and KFTA (1989) for 1972-89.

**Table A.1: Korea's Selected Human Capital Indicators. 1940-1988.**

	illiteracy rate	primary			secondary			tertiary		
		≥14 <sup>1</sup>	WF <sup>2</sup>	Enr. ratio <sup>3</sup>	≥14	WF	Enr. ratio	≥14	WF	Enr. ratio
1944	86.7	11.3	53.0*	n.a.	1.7	7.4*	n.a.	0.2	.*	n.a.
1953	78.0	n.a.	n.a.	59.6	n.a.	n.a.	16.7	n.a.	7.6	3.1
1960	27.9	36.0	53.0†	86.2	17.3	33.9†	26.6	2.5	6.1†	6.4
1970	10.6	39.9	67.4	102.8	31.7	26.4	41.3	5.5	7.3	9.3
1980	-	n.a.	49.1	101.0	n.a.	43.0	76.0	n.a.	7.8	15.8
1986	-	n.a.	41.2#	100.2	n.a.	48.6#	90.0	n.a.	10.2#	34.2
1990	-	n.a.	n.a.	108.0	n.a.	n.a.	87	n.a.	n.a.	39.2

Notes: 1) Education attainment of the population aged 14 and over. 2) Education attainment of the work force (WF). From 1970 onwards figures for primary education includes no schooling. 3) Enrolment as a percentage of the age group. \*1946 †1963 #1983  
 Source: Kim, L. (1989) for 1953-1986 and UNESCO for 1990 data on enrolments and literacy. Data on education attainment for over 14, McGinn et al (1980:111); and Amsden (1989:222) for the work force.

**Table A.3: Korea's Basic Macro Indicators. 1953-89 (%)**

Periods	(a) GNP growth	(b) Mnf. output Growth	(c) GPCF/GDP	(d) GNP deflator
1953-59	4.6	14.7	n.a.	8.9†
1960-72	9.9	20.5	19.5	16.0*
1973-79	10.8	17.2	26.9	20.5
1980-84	8.4	12.0	30.8	8.2
1985-89	11.5	13.8	29.4	4.3
1980-89	10.0	13.1	29.4	5.2

Note: (a), (b) and (d) real least square averages. (c) arithmetic average.  
 † 1955-60. \*1961-72. Source: EPB (a) and BOK.

Import ratios <sup>1</sup>	1953	1960	1965	1972	1974	1980	1983
	Total mnt.	10.2	12.1	10.2	15.3	24.1	16.8
HCI	26.0	33.3	23.6	33.0	39.0	23.8	23.8
Light	6.0	5.0	3.7	7.1	12.7	8.1	8.4

Export ratios <sup>2</sup>	1953	1960	1965	1972	1974	1980	1983
	Total mnt.	1.1	0.8	5.3	17.9	26.5	17.5
HCI	1.0	0.6	3.5	14.0	22.3	19.0	22.0
Light	1.1	0.9	6.3	19.8	31.7	18.3	19.9

<sup>1</sup> Imports divided by the total domestic supply. <sup>2</sup> Exports divided by total output. Notes: a) heavy and chemical industry (HCI) includes nonmetallic minerals, metallurgy, machinery, electrical and communication equipment, transport equipment, chemicals, and pharmaceuticals. b) Ratios are the weighted average (output) for the two-digit sectoral data (Korean Industrial Classification). Source: SUH, T.S. (1975:84ff) for the 1953-1974 period, and Bank of Korea Input-Output Tables for the rest of the period.

Year	Sector				total
	Agriculture	Industry	Manufacturing	Services	
1953	42.3	8.4%	7.9	48.7	100
1960	35.2	15.6	13.5	49.2	100
1965	37.6	19.9	14.4	42.5	100
1972	26.8	23.5	18.4	48.8	100
1980	14.9	31.0	22.2	54.1	100
1989	10.2	31.9	22.6	57.9	100

Note: current prices.

Source: Suh (1975:277) for 1953-60 and EPBa.

Categories	1960	1965	1972	1980	1987
Total exports	31.8	175.0	1624.0	17488.6	47206.6
primary & semi-manf I	27.5 [86.5]	68.4 [39.0]	265.3 [16.3]	1736.4 [10.0]	3433.1 [7.2]
manufactured products <sup>2</sup>	4.3 [13.5]	106.6 [60.9]	1358.7 [83.6]	15752.2 [90.0]	43773.5 [92.7]

<sup>1</sup> Includes SITC divisions n° 0,1,2,3,4,9,6,8. <sup>2</sup> Includes SITC divisions n° 5 to 8 minus 68. Note: Numbers in square brackets are the shares in total exports.

Source: U.N. International Trade Statistical Yearbook, Various years.

Year	Export <sup>2</sup>	Import <sup>3</sup>	Official-rate
1956	248.0	138.3	n.a.
1958	286.3	163.0	n.a.
1960	311.7	232.3	166.6
1962	265.0	251.0	220.4
1964	273.3	259.0	229.1
1966	268.0	279.7	254.9
1968	252.7	258.3	236.8
1970	258.3	261.0	242.5
1972	294.0	299.0	282.9
1974	298.3	305.3	291.4
1976	269.3	279.7	263.3
1978	263.7	278.7	258.3
1980	257.0	265.3	250.3
1982	256.7	269.7	254.5
1984	257.0*	273.0*	280.0
1986	n.a.	n.a.	311.4
1988	n.a.	n.a.	305.7

<sup>1</sup> Three year moving average except for 1988. 1965 prices. Each exchange rate is multiplied by the ratio of the weighted average of the major trade partners' WPI (US and Japan) to the Korean WPI. The Japanese WPI was adjusted by the index of the exchange rate of the yen to the dollar. <sup>2</sup> Includes official exchange rate, export premia, direct subsidies and interest rate subsidies. <sup>3</sup> Includes official exchange rate, tariff and foreign exchange tax collections and export premia. \* 1983 only. Source: Data from Krueger (1979: 48 ff.) for 1955-58, Frank et al. (1975: 70) for 1958-62, Kim, K. (1991: 24) for 1962-83; and EPB (a), IMF (b) and OECD (1989) for 1984-88.

Year	Exp. Growth (%) <sup>1</sup>	Imp. Growth (%) <sup>1</sup>	Trade Balance <sup>2</sup> US\$10 <sup>6</sup>	Current Account %GDP	Debt ratio <sup>3</sup> %	Year	Exp. Growth (%) <sup>1</sup>	Imp. Growth (%)	Trade Balance <sup>2</sup> US\$10 <sup>6</sup>	Current Account %GDP	Debt ratio %
1952	n.a.	n.a.	-187	n.a.	n.a.	1972	45.5	0.8	-898	-3.5	33.9
1953	n.a.	n.a.	-306	n.a.	n.a.	1973	75.2	48.4	-1015	-2.3	31.5
1954	n.a.	n.a.	-219	-6.2	n.a.	1974	16.5	36.1	-2391	-10.8	32.0
1955	26.6	37.3	-323	-8.7	n.a.	1975	4.3	-2.8	-2193	-9.0	40.5
1956	33.1	8.5	-362	-11.7	n.a.	1976	45.2	15.3	-1059	-1.1	36.7
1957	-14.4	11.4	-420	-10.5	n.a.	1977	22.7	16.1	-764	0.0	33.7
1958	-23.8	-15.7	-362	-8.7	n.a.	1978	17.4	28.5	-2261	-2.1	29.7
1959	17.4	-19.7	-284	-7.5	n.a.	1979	5.5	20.9	-5283	-6.7	31.7
1960	64.8	13.0	-311	-9.3	n.a.	1980	1.7	-4.1	-4787	-8.8	44.7
1961	24.6	-7.9	-275	-8.6	n.a.	1981	11.2	7.3	-4878	-7.0	48.3
1962	33.9	33.3	-367	-2.4	n.a.	1982	0.8	-9.0	-2398	-3.7	52.6
1963	58.7	33.1	-474	-5.3	4.06	1983	10.5	6.7	-1747	-2.0	53.2
1964	36.5	-28.0	-285	-0.9	5.29	1984	16.9	14.3	-1387	-1.6	53.2
1965	46.7	14.3	-288	0.3	6.81	1985	4.1	2.2	-853	-1.0	50.9
1966	38.2	49.7	-466	-2.8	10.3	1986	18.0	4.4	-3131	-4.5	43.2
1967	28.0	39.1	-676	-4.5	13.6	1987	32.4	25.8	-6414	-7.6	27.6
1968	38.5	43.0	-1007	-8.4	20.0	1988	23.6	22.1	-8886	-8.2	17.9
1969	31.7	19.9	-1200	-8.3	24.0	1989	-2.2	12.9	913	2.4	14.5*
1970	29.5	5.1	-1148	-7.7	25.5	1990	n.a.	14	-1854	n.a.	n.a.
1971	24.0	17.0	-1326	-8.9	30.0						

<sup>1</sup> % 1980. <sup>2</sup> Customs clearance basis. <sup>3</sup> Debt service divided by exports. \* Preliminary.

Source: Krueger (1979), U.N., EPB a, EPB (1990) and KDI (1991).

year <sup>1</sup>	Positive list			Negative list			Total	AA/Total (%)	AA - S.I./Total <sup>4</sup>
	AA	Restr.	Prohib.	AA	Restr.	Prohib. <sup>3</sup>			
1961	1015	17	305	-	-	-	-	-	-
1962	1377	121	433	-	-	-	-	-	-
1963	109	924	414	-	-	-	-	-	-
1964	496	n.a.	631	-	-	-	-	-	-
1965	1495	124	620	-	-	-	-	-	-
1966	2307	127	2446	-	-	-	-	-	-
1967/Jul. 24 <sup>2</sup>	2950	132	362	(156)	(1114)	(42)	1,312	(11.9)	(11.9)
Jul. 25	-	-	-	792	402	118	1,312	60.4	52.4
1969	-	-	-	723	530	74	1,312	55.1	47.1
1971	-	-	-	721	518	73	1,312	55.0	47.0
1973	-	-	-	683	556	73	1,312	52.1	44.7
1975	-	-	-	649	602	66	1,312	49.5	41.6
1977	-	-	-	691	560	61	1,312	52.7	40.8
1979	-	-	-	683	327	-	1,097	67.6	56.2
1981	-	-	-	5,579	1,886	-	7,465	74.7	60.7
1983	-	-	-	6,355	1,560	-	7,915	80.4	66.6
1985	-	-	-	6,945	970	-	7,915	87.7	78.2
1987	-	-	-	7,407	508	-	7,915	93.6	n.a.
1989	-	-	-	n.a.	n.a.	-	7,915	95.5	n.a.
1991*	-	-	-	n.a.	n.a.	-	7,915	97.3	n.a.

<sup>1</sup> The data refers to the second half of the years. <sup>2</sup> The numbers in parentheses represent the results of a reclassification of the negative import system to make it comparable with the positive one. However, some authors like Luedtke-Neurath (1986:76) argue that the commodities classifications of the two systems were not comparable, and accordingly the results of the reclassification tend to underestimate the number of AA before 1967. The details of the classification of the positive list were not available, while the positive list used 4-digits SITC until 1977, 4-digits BTN until 1980 and 8-digit CCCN since 1983. <sup>3</sup> The category of prohibited items was abolished in 1978. <sup>4</sup> AA items minus the items subjected to special laws, divided by total importable items. Special laws consistent with GATT regulations were not included. \* Planned. Source: Frank et al. (1975:45,59) until 1970, Kim, K. (1987:28) for 1970-84 and special law items; and EPB (1989/1990) for 1984-91.

Texto para Discussão

**Table A.10: Korea's Simple and Weighted Average Legal Tariff Rates, 1952-79**

Average rates(%)	1952	1957	1962	1968	1973	1977	1979
weighted <sup>1</sup>	n.a.	35.4	49.3	56.7	48.1	41.3	34.4
simple	25.4	30.2	39.9	39.1	31.5	29.7	24.7
coeff. variation <sup>2</sup>	0.70	0.70	0.77	0.71	0.70	0.61	0.69

<sup>1</sup> Average rate weighted by the value of production in 1975. <sup>2</sup> Standard deviation divided by the mean. Simple average rates only. Note: special tariffs (1964-73) were not included.  
Source: Kim, K. (1991:43)

**Table A.11: Korea's Export Promotion Measures: 1950 onwards**

Type of incentive	Duration	Type of incentive	Duration
<b>1. Tax incentives</b>		<b>Type of incentive</b>	<b>Duration</b>
Commodity tax exemption	April 1950	Fund for exports of primary products	September 1960
Business tax exemption	January 1967	Foreign currency loans	May 1967
Reduction of corporation and income tax by 50% on earnings from exports	January 1961-1972	Financing export on credit	October 1969
Accelerated depreciation on allowance for fixed capital	January 1961	4 - Other Promotion Schemes	
Tax credit for foreign market development expenditures	August 1969	Foreign exchange deposit system	June 1949 - Jan. 1961
Tax credit for losses due to operations in foreign markets	March 1973	Trading license based on export performance	January 1953
<b>2. Tariff incentives</b>		An export bonus with preferential foreign exch.	1951 - May 1967
Tariff exemptions on capital equipment for export production	March 1964-Dec. 1973	Direct export subsidy	1955-56 & 1961-63
Tariff payment on an instalment basis for capital used in export promotion	January 1974	Discount on railroad freight rates	1958 -
Tariff exemptions on raw material and input for export production	April 1959 - June 1975	Monopoly rights on exports of specific items in specific areas	April 1960 -
Tariff drawback on imported raw materials used for export production	July 1975	Creation of exporters associations on various export products	September 1961 -
Wastage allowance	July 1965	Financing Kotra	1962 -
<b>3. Financial incentives</b>		Export-import link system	1951-55 and 1963-
Financing for collection of export goods	Feb 1948-July 1955	Discount on electricity rates	1965 - 1976
Export shipment financing	1950 - 1955	Waiver insurance for shipping	1965
Export promot. fund financed by counterpart fund	November 1959 - Jan. 1964	Local letter of credit system	March 1965
Financing imports of materials to be used in export production	October 1961	Differential treatment of traders based on export performance	February 1967
Export credits (trade credits before 1961)	June 1950	Export insurance	January 1969
Financing suppliers of U.S. off-shore military procurement	September 1962	General trading companies	May 1965
Fund to promote the export industry	1964 - 1969	Exportbank	June 1976 -
Fund to convert small and medium-sized firms into export industries	February 1964	Export targets by industry	1962-

Source: Hong (1979:54) and Frank et al (1975:40)

**Table A.12: Estimates of Korea's Export Subsidies per Dollar of Export, 1958-83 (%)**

year	Net <sup>2</sup>	Gross <sup>3</sup>
1958	2.4	130.4
1959	2.6	172.0
1960	1.9	137.3
1961	6.7	18.2
1962	8.6	16.6
1963	9.1	45.8
1964	4.5	31.3
1965	3.7	14.8
1966	4.6	19.0
1967	7.4	23.0
1968	6.6	28.1
1969	6.4	27.8
1970	6.7	28.3
1971	6.6	29.6
1972	3.2	26.8
1973	2.2	23.7
1974	2.1	21.2
1975	2.7	16.7
1976	2.5	16.9
1977	1.9	19.2
1978	2.3	19.5
1979	2.3	20.2
1980	3.3	21.3
1981	2.2	n.a
1982	0.4	n.a
1983	0.0	n.a

<sup>1</sup> As a percentage of the official exchange rate.  
<sup>2</sup> Equals direct cash interest rates (1958-64)+ direct tax reduction (1962-73) + interest rate subsidy.  
<sup>3</sup> Equals net subsidy + export dollar premium (1958-61, 1963-64)+ indirect tax and tariff exemptions (1962- ).  
Source: Data from Kim, S. K. (1991 :33).

**Table A.13: Korea's Selected Interest Rates 1963-86. (end of the period,%)**

year	General Loan Rate <sup>1</sup>		KDB equip-ment <sup>2</sup>		Exports		Foreign loans		Curb Market		Return to fixed assets in Mnf. <sup>3</sup>
	nom.	real <sup>4</sup>	nom.	real <sup>4</sup>	nom.	real <sup>4</sup>	nom.	real <sup>5</sup>	nom.	real <sup>4</sup>	real
1963	15.7	-3.9	n.a	n.a	n.a	n.a	n.a	n.a	52.56	32.9	33
1965	14.0	4.1	10.0	0.1	6.5	-3.4	5.5	19.8	58.8	48.9	34
1967	24.0	17.6	10.0	3.6	6.0	-0.4	5.8	-0.5	56.4	50.0	37
1969	24.6	18.2	12.0	5.6	6.0	-0.4	6.1	3.1	51.2	44.8	28
1971	22.0	13.2	12.0	3.2	6.0	-2.6	6.6	9.6	46.3	37.3	23
1973	15.5	8.6	12.0	5.1	6.5	-0.4	7.5	2.3	39.2	32.0	34
1975	15.5	-11.1	12.0	-14.6	8.0	-18.5	7.3	0.0	41.3	15.0	29
1977	16.0	7.0	13.5	4.5	8.0	-1.0	6.0	-3.0	38.1	29.1	33
1979	19.0	0.2	13.5#	-5.3	9.0	-9.8	12.1	-6.7	42.4	23.8	n.a.
1981	17.0	-3.4	16.5	-3.9	15.0	-5.4	16.8	24.1	35.3	14.9	37*
1983	10.0	9.8	10.0	9.8	10.0	9.8	9.7	17.1	25.8	25.6	n.a
1985	10.0	9.1	10.0	9.1	10.0	9.1	8.4	13.4	24.0	23.1	n.a.
1986	10.0	11.5	10.0	11.5	10.0	11.5	6.9	8.4	24.3	25.8	n.a.

<sup>1</sup> Discount on bills up to one year, non-prime rate. <sup>2</sup> Korea Development Bank loans for equipment. <sup>3</sup> Non-labour share of value-added divided by fixed assets (Hong 1979:171). <sup>4</sup> Deflated by the WPI. <sup>5</sup> Labor (90 days) + Exchange rate depreciation - WPI. \* 1980-82 average. Fixed assets include net working capital. #1978. Source: Bank of Korea "Economic Statistics Yearbook." Various years; Amsden and Eub (1990:63) and (Hong 1979:171).

**Table A.14: Korea's Total and Sectoral Import Liberalisation (AA) Ratio in Value Terms: 1968-87**

AA ratios (%)	% AA items in the sector's total imports.					% of the sector's AA items in total AA imp. <sup>4</sup>				
	1968	1976	1978	1980	1987	1968	1976	1978	1980	1987
food and beverage	83.4	67.6	49.0	54.2	70.2	17.8	20.7	8.8	7.9	5.2
raw material	78.9	63.9	66.2	90.4	73.5	38.1	71.4	62.4	72.6	28.6
manufactures <sup>1</sup>	40.0	10.6	19.8	28.8	71.8	44.0	14.6	28.9	19.3	57.7
consumer goods	36.9	5.7	9.8	16.5	67.4	1.6	0.5	0.8	0.6	3.6
intermediate goods	20.2	12.8	15.6	32.2	65.0	8.4	8.6	9.5	10.2	17.7
capital goods	53.3	8.9	24.1	27.0	75.2	33.9	5.4	18.6	8.4	36.4
All industries (AI)	55.6	37.1	38.8	61.6	74.2	100	100	100	100	100
AI minus gov. items <sup>2</sup>	40.6	12.1	17.7	25.6	n.a.	-	-	-	-	-
AI in item terms <sup>3</sup>	57.6	51.0	61.3	68.6	93.6	-	-	-	-	-

<sup>1</sup> Manufactures includes capital, consumer and intermediate goods.<sup>2</sup> All industries exclusive of items whose importation is directly or indirectly carried out by the government.<sup>3</sup> AA imports items divided by total imports items, as in the last column of table IV. <sup>4</sup> Total might not equal 100 % because of rounding.  
Source: Luedde-Neurath (1986:141 ff.) for 1968-80 and 1988 Statistical Yearbook of Foreign Trade, 1988 Import-Export Notice for 1987.

**Table A.15: Korea's Composition of Imports by End Use(%).1960-1989**

	1960	1969	1974	1978	1982	1986	1988	1989
Food and Bev.	9.2	17.0	12.2	6.7	7.2	5.3	5.2	5.3
Cons. goods	15.4	4.7	2.9	3.8	2.8	4.3	4.4	4.7
durables	n.a.	4.0	2.6	3.4	2.5	3.8	3.7	n.a.
non-durables	n.a.	0.7	0.3	0.4	0.3	0.5	0.7	n.a.
Ind. supplies <sup>1</sup>	49.6	46.5	57.6	55.5	64.1	54.2	53.4	53.6
Capital goods	11.7	31.6	26.9	33.7	25.6	35.9	36.7	36.4
Export use	n.a.	n.a.	n.a.	n.a.	23.9	40.3	41.2	36.4
Domestic use	n.a.	n.a.	n.a.	n.a.	76.1	59.7	58.8	63.6

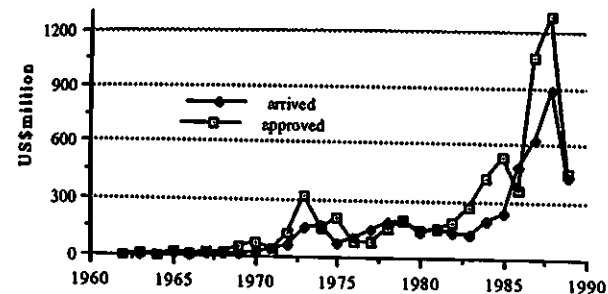
<sup>1</sup> Includes raw material, fuel and intermediate goods. Note: a) % ages may not add to 100 % because of non specified goods. Source: Data for 1960 was based on Krueger (1979:72), Korea Foreign Trade Association (1989) for 1969-1988 and KDI (1991) for 1989.

**Table A.16: Korea's Market Concentration, 1970-85.<sup>1</sup>**

	monopoly			oligopoly			competition			total		
	1970	1977	1985	1970	1977	1985	1970	1977	1985	1970	1977	1985
Nº of commodities	442	475	534	774	807	1421	276	264	561	1492	1546	2516
Commodity ratio % <sup>2</sup>	29.6	30.7	21.2	51.4	52.2	56.5	18.5	17.1	22.3	100	100	100
Shipment ratio % <sup>3</sup>	8.7	12.7	9.4	51.4	61.2	52.8	39.8	26.1	37.8	100	100	100

<sup>1</sup> Monopoly = CR<sub>1</sub> > 80%, S<sub>1</sub>/S<sub>2</sub> > 10.0. Oligopoly = CR<sub>2</sub> > 80%, S<sub>1</sub>/S<sub>2</sub> > 3.0, S<sub>3</sub> < 5.0 or CR<sub>3</sub> > 60. Competition = CR<sub>3</sub> < 60%, where CR<sub>i</sub> is the accumulated market concentration of the i leading firms, and S<sub>i</sub> is the market share of the i<sup>th</sup> firm. <sup>2</sup> Number of items produced in each type of market structure divided by the total number of items. <sup>3</sup> Value of items shipped in each type of market structure divided by the total amount shipped.  
Source: Lee Kyu Uek (1988) "The Current State of Economic Concentration and the Fair Trade Policy.", as quoted by Presidential Commission on Economic Restructuring (1988:72).

Chart A.1-Trends of Foreign Direct Investment in Korea, 1962-89



Source: Ministry of Finance as quoted in Bark (1989:3)

**Table A.17: Net FDI as a Share of Gross Domestic Capital Formation (GFC) and Net Capital Inflows (NCI) in the East Asian NICs 1966-85.**

	1966-72	1973-75	1976-78	1979-82	1983-85
<b>Korea</b>					
FDI (US\$ 10 <sup>6</sup> )	28.2	90.5	87.7	53.5	137.2
% of GFC	1.6	1.7	0.8	0.3	0.6
% of NCI	4.3	5.6	10.9	1.1	7.4
<b>Taiwan</b>					
FDI (US\$ 10 <sup>6</sup> )	36.9	59.3	78.7	136.7	229.9
% of GFC	2.9	1.4	1.2	1.1	2.0
% of NCI	25.8 <sup>b</sup>	15.4	a	a	a
<b>Singapore</b>					
FDI (US\$ 10 <sup>6</sup> )	83.1 <sup>c</sup>	532.0	423.0	1186.6	1158.9
% of GFC	12.7 <sup>c</sup>	26.4	17.3	21.7	14.5
% of NCI	23.4 <sup>c</sup>	78.1	107.6	104.0	281.3
<b>Hong-Kong</b>					
FDI (US\$ 10 <sup>6</sup> )	n.a.	n.a.	183.6	613.9	641.9
% of GFC	n.a.	n.a.	4.4	6.5	8.3
% of NCI	n.a.	n.a.	64.1	50.0	54.5

<sup>a</sup> net capital outflow. <sup>b</sup> 1966-70. <sup>c</sup> 1967-72.  
Note: For Korea, Taiwan and Singapore, total FDI figures are taken from balance-of-payments data, which ideally include equity capital, reinvested earnings, and other capital movements. NCI = - (current account balance) + (unrequited transfers). For Hong-Kong, total disbursement of DFI by OECD members only; NCI = total financial flows by OECD, OPEC and multilateral agencies.  
Source: Haggard (1990:208) except for b which was taken from Stallings (1990:62).

**Table A.19: Korea's Cumulative Ownership Distribution of Foreign Investment, 1968-83 (%)<sup>1</sup>**

year	Minority Owned and Co-Owned	Majority Owned	Wholly Owned	total
1968	67.1	24.7	15.2	100
1972	63.9	16.9	19.2	100
1976	57.0	15.2	27.9	100
1980	62.8	14.3	22.9	100
1980 excl. FEZ*	67.1	14.3	18.5	100
1983	54.0	12.1	33.7	100

<sup>1</sup>Distribution calculated using the amount of investments in U.S. dollars.\* Free Export Zones.  
Source: Economic Planning Board as quoted by Koo (1982:46) for 1968-80 and USITC(1985:141) for 1983.

**Table A.20: Sectoral Shares of Foreign Direct Investment in Korea, 1962-89 (% approval basis)**

	1962-66	1967-71	1972-76	1977-81	1982-86	1987-89
Agriculture	—	0.9	0.9	0.7	0.3	0.5
Mining	—	—	0.5	0.2	0.2	0.1
Services	2.1	14.6	21.7	32.2	46.8	34.8
Manufacturing	97.9	84.5	76.9	66.9	52.7	64.6
food	6.5	1.0	2.6	7.3	9.1	4.2
textile & apparel	2.2	11.3	24.7	1.0	1.8	2.2
chemicals	—	12.9	25.4	29.2	12.7	25.8
pharmaceuticals	—	1.6	0.3	3.1	7.9	5.1
petroleum	10.9	20.5	4.7	2.0	0.5	3.6
metals	—	9.7	6.8	7.5	2.9	2.0
machinery	6.5	9.7	6.0	12.0	5.8	10.1
electrical goods and electronics	15.2	21.0	15.3	25.7	27.2	31.5
transport equipment	—	2.2	5.9	8.1	27.4	10.7
Others	58.7	9.7	7.9	3.9	4.5	4.8
Total US\$ million	47	219	878	721	1,767	2,342.9

Source: Ministry of Finance as quoted by Kim, Il-Illwan (1987:6) and Bark (1989:10).

**Table A.21: Share of Policy Loans in Total Domestic Credit, Korea 1963-86\***

year	(1) All Policy Loans	(1a) Exports	(1b) Earmarked	(1c) Unearmarked
1963	70.3**	3.3	n.a.	n.a.
1965	74.3**	4.0	n.a.	n.a.
1967	65.0**	7.3	n.a.	n.a.
1969	51.0**	9.3	n.a.	n.a.
1971	49.9	6.1	21.2	22.5
1973	54.0	9.5	23.9	20.7
1975	52.8	10.0	20.1	22.6
1977	55.8	10.4	19.8	25.7
1979	59.3	11.0	18.3	29.9
1981	57.0	12.2	16.4	28.4
1983	53.4	12.6	16.5	24.2
1985	49.7	12.8	17.7	21.5
1986	45.0	n.a.	n.a.	n.a.

\* Except for 1986, the annual figures are three-year moving averages.\*\* Denominator does not include Bank of Korea's loans.  
(1) = (1a)+(1b)+(1c) divided by total domestic credit (TDC= all loans and discounts to the private sector by the Bank of Korea, deposit money banks, Korea Development Bank and Korea Eximbank).  
(1a) = loans for foreign trade by deposit money banks and all loans by Korea Eximbank divided by TDC.  
(1b) = loans funded by government funds and the loans for agricultural industries, small and medium-sized firms, home building, etc...divided by TDC  
(1c) = loans funded by the National Investment Fund (1974), loans in foreign currency, and all loans by the Korea Development Bank, divided by TDC.  
Source: Data from Kwack and Chung (1986 :130) and Hong (1979:128) for 1963-69 and from Yoo (1990:42) for the rest of the period.

**Table A.22: Korea's Selected R&D Indicators**

	1963	1967	1970	1972	1976	1980	1981	1986	1988
R&D/GNP (%)	0.24	0.38	0.48	0.29	0.44	0.86	0.65	1.82	2.0
government	97.0	86.0	77.0	66.0	64.0	68.0	42.0	19.0	20.0
private sector	0.3	14.0	23.0	34.0	36.0	32.0	58.0	81.0	80.9
R&D/Sales (%)	n.a.	n.a.	n.a.	n.a.	0.36	n.a.	0.67	1.63	n.a.
Researchers (10000 pop.)	n.a.	1.4	n.a.	1.7	3.3	n.a.	5.4	11.3	13.7
Government (%)	n.a.	n.a.	n.a.	46.5	30.8	n.a.	24.4	16.3	n.a.
Universities	n.a.	n.a.	n.a.	36.0	41.2	n.a.	40.9	34.0	n.a.
Private sector	n.a.	n.a.	n.a.	17.4	27.9	n.a.	34.6	48.7	n.a.

\*Estimate Source: MOST (1988) and MOST as quoted in Kim (1989:7) and Lee et al. (1991:1432)

**Table A.23: Overall Concentration Rate by Shipment in Korea, Japan and Taiwan 1970-82**

	Korea		Japan	Taiwan	
	top 50	top 100	top 100	top 50	top 100
1970	33.8	44.6	n.a.	n.a.	n.a.
1975	n.a.	n.a.	28.4	15.8	21.7
1977	35.0	44.9	n.a.	15.2	22.4
1980	n.a.	n.a.	27.3	16.4	21.9
1982	37.5	46.8	n.a.	n.a.	n.a.

Source: Lee et al (1986).



Texto para Discussão

**Table A.24: Korea's Capacity Utilization Rate by Selected Industries: 1976-84**

ISIC	1970	1972	1976	1978	1980	1982	1984
Manufacturing	65.9	65.1	74.7	81.4	69.5	69.4	80.6
Light ind.	40.2*	70.6*	59.7	81.8	69.2	64.0	74.0
Food, bev. and tob	70.4	66.3	80.7	86.9	80.3	80.2	79.1
Textile							
Heavy ind.	61.8	62.1	88.7	102.7	85.0	80.0	87.9
Industrial Chemicals	72.5	71.7	85.6	90.6	63.8	68.2	78.1
Non-metallic mineral	60.1	58.9	79.4	89.5	74.5	75.3	87.9
Iron and steel	n.a.	n.a.	70.3	72.6	56.8	69.0	81.7
Nonferrous metal	n.a.	n.a.	n.a.	n.a.	39.9	43.3	53.8
Fabricated metal	62.2	53.5	71.4	71.1	46.8	52.4	64.8
General machinery			83.3	79.3	65.3	65.2	87.6
Electrical machinery			36.8	40.4	41.9	58.1	78.7
Transport equipment	n.a.	n.a.					

\* Excludes tobacco. Note: data sources did not disclose the measurement criteria. Source: For 1970-72, World Bank (1987:178, vol. 1) and for 1976-84, S. Young, and S. Rhee (1986) 'Korea's Industrial Adjustment and Import Liberalization Policies' - KDI and World Bank as cited by Amuden (1987).

**Table A.25: Debt-equity ratios in Manufacturing of Korea, Japan, USA and Germany: 1965-87\***

year	Korea <sup>1</sup>	Japan <sup>2</sup>	US <sup>2</sup>	Germany <sup>2</sup>
1965	104.0	n.a.	n.a.	n.a.
1967	156.7	n.a.	n.a.	n.a.
1969	266.6	388.3	82.3	155.7
1971	345.3	416.0	87.0	174.7
1973	300.7	444.0	89.3	187.3
1975	340.0	478.3	86.7	206.0
1977	360.7	458.2	89.1	224.0
1979	410.6	404.2	98.0	239.2
1981	441.7	338.1	104.1	240.7
1983	362.9	279.2	106.4	214.6
1985	347.3	239.9	119.5	221.7
1987	329.0	203.9	133.1	221.7

\* Three-year moving average. <sup>1</sup> Liabilities divided by net-worth. <sup>2</sup> Liabilities divide by net-worth until 1977 and liabilities divided by capital over 1978-87. Source: BOK, Financial Statement Analysis, various years for Korea. For the other countries, Jones (1987:158) for 1968-78 and Bank of Japan (1990) for 1979-87.

**Table A.26: Coverage of Korea's Contingent Import Control, 1981-1989**

Measures	1981	1982	1983	1984	1985	1986	1987	1989
Tariffs <sup>1</sup>	100	12	104	23	7	2	7	n.a.
(1) Emergency (2) Adjustment	-	-	-	13	7	5	-	-
(1)+(2) / total import items (%)	4	0.2	1.3	0.5	0.2	0.1	0.1	n.a.
NTRs	205	209	174	168	160	162	n.a.	22
Imp. diversification <sup>3</sup>	20.3	20.7	17.2	16.6	15.8	15.0	n.a.	2.2
% total imp. items	193	201	161	125	118	106	57	25*
Surveillance <sup>4</sup>	2.6	2.7	2.1	1.6	1.5	1.0	0.7	0.4*
% total imp. items	n.a.	1950	n.a.	n.a.	1875	n.a.	n.a.	n.a.
Special Laws <sup>5</sup>	n.a.	26.1	n.a.	n.a.	23.6	26.0	n.a.	19.0*
% total imp. items	n.a.	26.1	n.a.	n.a.	23.6	26.0	n.a.	19.0*

<sup>1</sup> In number of items at the 8 digit level of CCCN. <sup>2</sup> 1981-85 as of July 1 of each year, 1986-87 as of December of each year. Emergency tariffs can be placed on any item. Adjustment tariffs are for newly liberalised items. <sup>3</sup> Aimed at reducing bilateral trade imbalances. Eliminated as of January 1, 1989. <sup>4</sup> Liberalised items placed under government observation. <sup>5</sup> 1988 CCCN. <sup>6</sup> Liberalised items on 'welfare' and national security grounds. \*1988 Source: World Bank (1987, Vol. 1: 67), Young (1986:29), EPB (1989), Kim, S. (1987:21) and IMF (in).

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