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Beyond Industrialization

New Approaches to Development Strategy Based on the Service Sector

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Abstract

Industrialization occupies a central place in the rich tapestry of development theory and practice. Although that place has varied over time, many have agreed with Nicholas Kaldor that the kind of economic growth that leads to high real income per capita can only occur through industrialization. This paper argues that it is becoming increasingly difficult for most developing countries to achieve rapid growth through industrialization, and especially through export oriented activities. But the key mechanisms seen as driving the industrial take-off in much of the literature (internal increasing returns, transfer of labour into higher value activities and pecuniary externalities) are alive and well, and are evident in services as well as in industry. Furthermore, China is actively trying to move from a strategy based on industrialization to one based much more on agriculture and services, as the costs of the current pattern of industrialization become prohibitive, and India has demonstrated that rapid growth based primarily on the services sector is possible. Thus more attention needs to be given to strategies based on the expansion of the agricultural and services sectors, and to the ways in which better services in rural areas and higher rural output can combine to achieve rapid growth and improved human welfare in poor countries.

Keywords: industrialization, services, development strategy, rapid growth

JEL classification: O11, O14

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1 Introduction

Most of the countries that are now developed achieved that status in large part through a process of industrialization, involving a substantial shift of capital and labour into industrial activity, and a rapid increase in the share of industrial value added in GDP during the development process. As a result industrialization occupies a central place in the rich tapestry of development theory and practice, although that place has varied as those theories and practices have changed over time. Many of the writings of the so-called 'high development theory' period of the 1940s and the 1950s were concerned with the conditions for industrialization, and Kaldor wrote (1966: 54) that 'there can be little doubt that the kind of economic growth which involves the use of modern technology and which eventuates in high real income per capita, is inconceivable without industrialization'.

Thorbecke (2007) provided a valuable survey of the evolution of development doctrine since the heydays of the 'industrialization-first' era of the 1950s, showing how the prevailing doctrines responded not only to intellectual trends but even more so to the major crises in the world economy. He argues that in the 1960s and 1970s there was a growing reaction against the emphasis on industry-first and the GNP measure of outcomes, with renewed focus on agriculture, on poverty alleviation, on employment strategies and on a broad range of measures to promote human capital and welfare. During the 1980s much stress was placed on stabilization in the wake of problems for developing countries arising from the oil shocks, two global recessions and the Mexican crisis of 1982. But as that decade proceeded, development doctrine, reflecting broader economic trends, began to emphasize free market themes, including a stress on outward orientation intended to encourage exports and industrialization in labour-intensive consumer goods. This theme was given impetus by the World Bank's 1993 report *The East Asian Miracle*, which stressed the role of strong growth in industrial investment, exports and output, supported by investment in human capital and in infrastructure and by a high savings rate, in driving rapid economic growth. Strong expansion of exports into open markets in key economies has been central to East Asian growth, so that the industrialization model is closely linked to the benefits of free trade and comparative advantage. In the current decade Thorbecke sees less emphasis on 'big ideas', important progress in technical areas, a clearer realization that human development is the ultimate goal of economic development, and an imperative to shape development strategies in the light of the reality of globalization.

This need to shape development strategies in the light of the reality of globalization – and especially in the light of China's extraordinary expansion over the past two decades and the emerging impact of its trade on other developing countries – provides the motivation in this paper for revisiting the role of industrialization in the contemporary development process. At the level of development theory, many studies have addressed aspects of the way in which a self-sustaining transition from a traditional to an industrial economy can be achieved. These include, for example, Young (1928), Rosenstein-Rodan (1943), Lewis (1954) and Kaldor (1967). As Krugman (1992) points, some of these models have been formalized using the analytical resources embodied in endogenous growth theory and new trade theory. One such paper, on which I draw here, is that of Murphy, Sheifler and Vishny (1989), who provide a formalization of Rosenstein-Rodan's model of big-push industrialization.

In thinking about industrialization, it is important to remember that economic development is a process of sustained increase in average living standards or overall human welfare in a given country. It is thus, in principle, an open question whether industrialization is the most appropriate means for a particular country, or for most countries at a given time, to achieve increased average living standards. It is also an open question whether, in a given case, current statistical measures (such as real GDP per person) provide a reasonable proxy for living standards and human welfare. Furthermore, it is clear that there are personal, social and environmental costs associated with industrialization, so that the net impact on human welfare is also an important issue.

The case I will argue is that it is becoming increasingly difficult for most developing countries to achieve more rapid growth through industrialization, and especially through export oriented activities, and this difficulty is likely to increase further. But the key mechanisms seen as driving the industrial take-off in the paper noted above and in much of the related literature (internal increasing returns, transfer of labour into higher value activities and pecuniary externalities) are alive and well, and do not relate only to the industrial sector. Furthermore, China is actively trying to move from a strategy based on industrialization to one based much more on agriculture and services, as the costs of the current pattern of industrialization become prohibitive, and India has demonstrated that rapid growth based primarily on the services sector is possible. Thus more attention needs to be given to strategies based on the expansion of the agricultural and services sectors, and to the ways in which better services in rural areas and higher rural output can combine to achieve rapid growth and improved human welfare in poor countries.

In what follows I develop this argument by briefly considering four building blocks: models of industrialization and the experience of the advanced countries (section 2); the nature of China's recent development path (section 3); some constraints on development through industrialization (section 4); and the search for a new strategy based on agriculture and services in China, and the reality of service-driven growth in India (section 5). Conclusions are presented in section 6.[1]

2 Industrialization, development and the East Asian model

2.1 A model of industrialization

Murphy, Sheifler and Vishny (1989) employ a two sector model, with a cottage production sector, operating in competitive conditions at constant returns to scale, and a factory sector which operates advanced technology, with increasing returns to scale due to the presence of fixed costs internal to the firm. With fixed costs there is imperfect competition, and they assume a single monopolist for each industry. Higher wages are paid in the factory sector than in the farm sector, to compensate for the disutility of farm work. The productivity gain from using the advanced technology is assumed to exceed this compensating wage differential, and this assumption is critical to achieving the key results. Both types of workers have the same unit elasticity of demand for manufactures across all products. Thus there are potential pecuniary externalities for expanded

[1] For a recent discussion of some similar themes see Dasgupta and Singh (2007).

manufacturing production: increased production (and wages) in one industry will increase the demand for the products of other industries, other than through profit distribution.

In each industry there is a cottage sector available and there will be a monopolist operating if demand is sufficient. If he enters the monopolist is forced to adopt limit pricing, that is to meet the price charged by the cottage sector. The model then shows two equilibria, one in which no sectors industrialize and the other in which all sectors industrialize. Which situation occurs will depend on the size of the fixed costs, relative to productivity gains, incurred in using the increasing returns on technology and on the level of demand. For some levels of fixed costs, both equilibria will be possible and in these cases the economy is capable of a 'big push', that is sustained growth as all of the surplus labour is absorbed in the factory sector. The reason for this is the pecuniary externality arising from the fact that the wage premium paid by the manufacturing firm adds to demand for the products of other sectors, even if the firm itself is not profitable. Murphy, Sheifler and Vishny (1989) consider other versions of this model, including ones in which increased activity by some firms generates higher future profitability for other firms and in which it helps to defray fixed infrastructure costs.

In these models the source of the multiple equilibria is the pecuniary externalities generated by imperfect competition with large fixed costs, in the context of unlimited supplies of labour at the going industrial wage rate. On the policy side, Murphy, Sheifler and Vishny infer that a government programme which ensures that many sectors industrialize simultaneously can boost income and welfare substantially, even when investment in any one sector appears unprofitable. This is especially so for an economy whose access to foreign markets is restricted by high transportation costs or trade restrictions. They cite South Korea as an economy that has successfully implemented such a coordinated programme of industrialization.

There are many other models within the endogenous growth literature which bear on the issue of development. For example, many follow Romer (1990) in building models based on the idea of external increasing returns due to specialization that goes back to Young (1928), to show how endogenous investment in R&D and technology can drive growth. Durlauf (1993) uses technological rather than pecuniary externalities with internal increasing returns to replicate the 'leading sectors' theory of Hirschman (1958). Azariadis and Drazen (1990) have replicated a 'stages of growth' path similar to that of Rostow (1960), in a model with human capital externalities linked to a training regime in which private rates of return on human investment depend positively on the existing average quality of human resources.

There is also the question of trade. The Murphy-Sheifler-Vishny (1989) model is for a closed economy, and they argue its relevance by pointing to the major role for domestic demand in most markets. In a more general sense, one central theme of many endogenous growth models is that, while the benefits of trade in terms of global growth are enhanced relative to the standard competitive model, these benefits do not necessarily flow through to individual countries. When growth is driven by innovation, learning by doing or other externalities and these effects are geographically concentrated, initial conditions can generate major long-term differences between countries in comparative advantage and in growth potential. If the industries in which a country is specialized are deficient in relevant respects (e.g. have a lower capacity for learning by doing, have lower returns to or lower capacity for R&D or have lower levels

of other externalities) then free trade will inhibit the growth of the small country, because it will tend to concentrate activity in areas of comparative advantage with lower capacity to generate growth.

Returning to the Murphy-Sheifler-Vishny model of industrialization, the three key requirements for self-sustaining industrialization are:

- fixed costs and increasing returns in industrial production, internal to the firm;
- surplus labour in the traditional sector, and a willingness of that labour to shift to the industrial sector at the going industrial wage rate; and
- the resulting pecuniary externalities, as the demand arising from higher wage incomes increases the demand for products of all industries.

While recognizing the many complexities touched upon above, I will concentrate on these requirements for the rest of this paper.

2.2 Employment shares in industrialization

It may be worth commenting briefly on the relevance of these requirements to the history of key developed countries. The relevance of increasing returns to both scale and scope, internal to the firm, to the development of the USA, UK and Germany has been amply demonstrated by Chandler (1990) among others, and he shows that these increasing returns apply to distribution as well as production. The existence of pecuniary externalities is also widely acknowledged, with authors such as Murphy, Sheifler and Vishny (1989) noting that these externalities can be accentuated by urbanization, which might be associated with a high elasticity of demand in a wide variety of manufactures. Here we focus on the third requirement, the shift of surplus labour from agriculture into industry.

The industrial revolution originated in the UK which was the first in modern times to build an industrial economy. This process began in the eighteenth century, and was well advanced by 1820. By that year the share of total employment in British agriculture

Table 1
Share of employment in industry in total employment,
selected countries, 1820-2005

	UK	Germany	USA	Japan	Korea	China
			(Per cent of total employment)			
1820	32.9	na	15.0	na	na	na
1870	42.3	28.7	24.4	na	na	na
1913	44.1	41.1	29.7	17.5	na	na
1929	45.2	na	29.4	20.9	na	na
1950	44.9	43.0	33.6	22.6	na	na
1970	39.5	na	28.5	35.3	16.3	10.2
1985	26.2	37.8	23.3	34.6	34.7	20.8
2005	20.5	31.0	17.0	27.5	26.9	23.8

Sources: 1820-1950: Maddison (1995: 39 and 253);

1970-93 (excluding China): OECD STAN Database 2002;

2005: OECD Statistics (//stats.oecd.org) for Germany, Japan and Korea; NBSC (2006*)* for China; data for 2005 for USA and UK estimated by the author from national sources.

had already fallen to 37.6 per cent, and nearly one third of all employment was in industry (Table 1). As the growth in industry continued to drive the expansion of the economy through the nineteenth and early twentieth century, the share of total employment located in industry reached 45.2 per cent in 1929, immediately prior to the depression, and by that time the share of agriculture in total employment had fallen to 7.7 per cent. These proportions remained fairly stable through to the 1950s. But after about 1970, as the structure of the world economy began to change, industry began to give way rapidly to services in terms of employment – by 2005 industry provided only 20 per cent of all jobs, and nearly 80 per cent of total employment in the UK was in services.

This broad pattern, of a strong expansion in industrial employment fed by a transfer from agriculture but sooner or later displaced by surging employment in services, is apparent in one way or another in the development process of all the major advanced economies. Germany followed a similar path to Britain a little later, with the industry share of employment reaching 41 per cent in 1913 and 43 per cent in 1950, before falling to 31 per cent by 2005. The service sector was important much earlier in the USA, but the industry share rose from 15 per cent in 1820 to nearly 30 per cent by 1913, and peaked at close to 35 per cent in the early 1950s. But by 2005 only about 17 per cent of US jobs were in industry. Japan's development process began later, and in 1913, 60 per cent of employment was in agriculture and only 17.5 per cent in industry. But the industry share rose rapidly during the first three quarters of the twentieth century, peaking at about 37 per cent in 1973 before declining gradually to 27.5 per cent in 2005.

It is interesting to consider the case of Korea in the prime decades of its rapid development, between 1970 and 1990. In these two decades Korea not only grew very rapidly (real GDP growing by 8.1 per cent per annum) but experienced rapid structural change. In 1970, 51.5 per cent of Korean employment was in agriculture (a figure comparable to that of China in 2000), with only 16.3 per cent in industry and 32.1 per cent in services. By 1990 the employment share in agriculture had fallen nearly two-thirds to 18.3 per cent, with more than half of that decline being reflected in rising manufacturing jobs. By 1990, 35 per cent of Korean jobs were in manufacturing, while the services share had risen to 47 per cent.

In other words, even as late as the 1980s Korea was following the traditional development path in an accelerated fashion, with a pronounced shift of jobs from agriculture to secondary industry, and also to services. Over a period of only two decades, the share of jobs in manufacturing more than doubled, absorbing more than half of the movement of jobs out of agriculture. But in the 1990s the trend reversed equally sharply, with the manufacturing share falling from 35 per cent in 1990 to 27 per cent of all jobs by 2005. By that year, with about 8 per cent still in agriculture, about 65 per cent of all Korean jobs were in the services sector.

These data are supportive of Kaldor's proposition (1967) that rapid growth in manufacturing is a characteristic of an intermediate stage of development, from immaturity to maturity. But they also bring out how early this maturity was reached in the advanced countries (some 50 years ago for USA, UK and Germany), the extent of the shift to services that has taken place in those countries since that time and the degree of shift to services over the past decade even in such a late entrant to industrialization as Korea. The implications of these trends for contemporary development paths remain to be explored. But they do suggest the hypothesis that pursuing a development strategy

based on industrialization in the early years of the twenty-first century may be a much more difficult task than even three decades ago, as sustained rapid growth in industrial employment is difficult to achieve in an open world economy.

3 The nature of China's growth, 1979-2006

In the wake of the achievements of Japan, South Korea and other countries in East Asia, China's remarkable growth since the 'opening to the market' in 1979 is often seen as a prime example of the East Asian model at work, and as a contemporary example of rapid growth through industrialization. China's growth, it is said, has been driven by rapid expansion in industrial output, supported by high levels of investment, strong growth in exports, a high level of savings and pro-active government at both central and local levels. But before we conclude that China is the classic case of development through industrialization there are certain matters that deserve further examination.

Table 2 provides a summary of the key sectoral growth rates of real GDP since China's opening to the market in the late 1970s. During the immediate post-reform decade, to about 1988, both agriculture and services grew rapidly, as a loosening of controls in these sectors led to strong expansion. Naughton (2007) graphically describes how the early move to a contracting system in agriculture in 1979, and the de facto reinstatement of the household farming system, generated sharp increases in the production of grain

Table 2
Sectoral growth rates in GDP, China, 1978-2006

	Agriculture	Industry	Services	Total
		(%)		
1978-88	5.6	11.0	12.9	10.1
1988-2006	4.1	11.5	9.4	9.5
1978-2006	4.6	11.3	10.6	9.7

Note: These data are based on annual real growth rates expressed in 'comparable prices'. For details see text.

Source: NSBC (2006, 2007).

Table 3
Sectoral shares of real GDP, five-year periods, China, 1979-2006

	Agriculture	Industry	Services	Agriculture	Industry	Services	Agriculture	Industry	Services
	At opening values (each period), %			At 1988 values, %			At 2005 values, %		
1979	31.0	47.1	21.9	38.0	40.4	23.8	41.3	29.7	29.0
1989	20.3	51.1	28.6	25.2	43.7	31.1	28.2	32.9	38.9
1997	12.4	62.2	25.4	16.2	55.9	29.0	18.8	43.7	37.5
2001	10.1	63.4	26.5	13.3	57.3	30.4	15.5	44.9	39.5
2006	7.6	66.5	25.9	10.8	60.4	30.6	12.0	48.3	39.7

Source: NBSC (2006, 2007).

and other farm products. Given that most of industry was embodied in large state-owned firms where a contract system had more limited effects, the impact of reform in industry was much more gradual, and over the decade to 1988 services grew more rapidly than industry (12.9 per cent per annum by comparison with 11 per cent per annum). But from about 1988 the more familiar paradigm applies, with the average growth rate of industrial value added over 1978-2006 (11.5 per cent) being about two percentage points higher than that of services and of the economy as a whole. Nevertheless, overall growth rates of agricultural and services value added of 4.6 per cent and 10.6 per cent over nearly three decades 1978-2006 constitute a striking achievement.

Reflecting the rapid expansion of industry in the command economy period from 1949-78, by 1978 the Chinese economy was already industrialized, at least in the sense that industry provided 48 per cent of GDP at current prices in that year. But this was an economy with administered quotas and prices and with few exports, with neither the quality nor the price of the output tested in competitive markets. This fact, combined with the strong fall in the relative price of manufactured goods that took place after the mid-1980s, makes it difficult to provide realistic estimates of sectoral contributions to the change in China's GDP. The National Bureau of Statistics of China (NBSC) publishes data for real growth rates in GDP (in total and for the sectors) in 'comparable prices', which involves valuing year 2's net value added in terms of year 1's prices, and so on, on a rolling basis, as well as indices compiled from these growth rates. These series can be used to create 'volume' measures by multiplying the index numbers by the current price values for any chosen base year. But the choice of base year will influence both the level and the change in the resulting series. Data drawn on three base years are reported in Table 2, one for five year periods using the values for the opening year of each period as the base, one for an intermediate year (1988) and one for 2005. Following the argument of Naughton (2007) that the latest year prices are likely to be closest to world market prices, figures on a 2005 base are used in Figure 1.

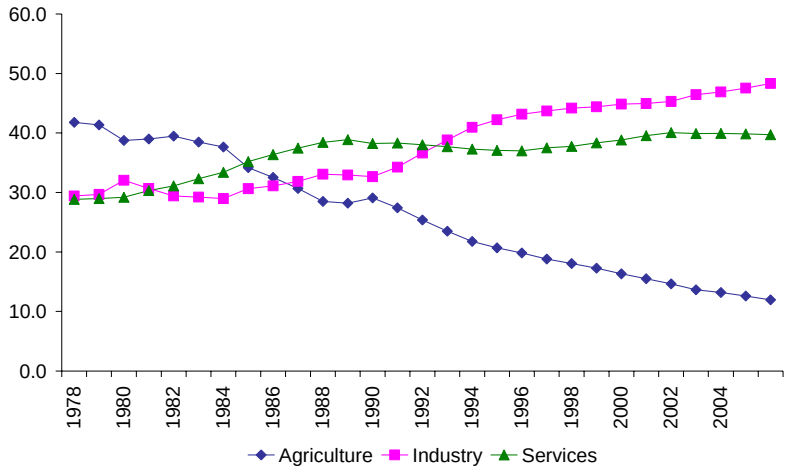
Panel A of Figure 1 shows the absolute shares of the three sectors in real GDP over 1978-2006, while Table 3 shows various estimates of the shares of the sectors in real GDP for selected years from 1979-2006. While the estimates differ markedly, they show four distinct periods, with the falling share of agriculture common to them all. Using the 2005 values as illustrative, from 1979 to 1989 the share of services rose by 10 percentage points while the share of industry was virtually flat; from 1989 to 1999 the share of industry rose by nearly 14 percentage points while the share of services fell; from 1997 to 2001, a period of subdued industrial growth in China, the services share rose more rapidly than that of industry; finally, rapid growth in the industrial share resumed over 2001-06. Overall, and in spite of these data issues, it is fair to say that industry has been the central contributor to China's growth, certainly after 1990, but that services have also grown very rapidly.

This emphasis on the periods before and after 1990 is highlighted by the real value added per employee data in Panel B of Figure 1. Up to 1990 labour productivity in the three sectors grew at similar, modest rates – 2.8 per cent, 3.6 per cent and 3.3 per cent per annum for agriculture, industry and services respectively. After 1990 all growth rates have been more rapid, but that in industry has been, at 10.3 per cent per annum,

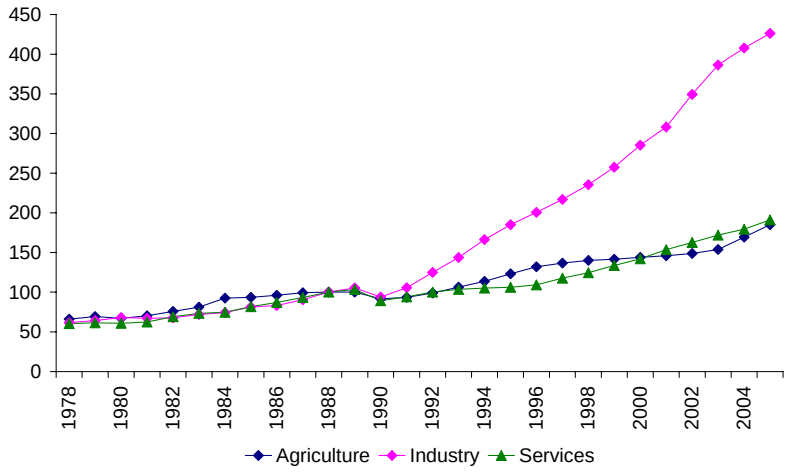
twice that in agriculture and industry (5.1 per cent and 5.3 per cent, respectively).[2] All these rates of productivity increase are impressive, but in industry output growth of 12.6 per cent per annum over 1990-2006 was achieved with a growth of only 2.1 per cent in employment.

Figure 1
Value added shares, labour productivity and employment shares, by major sector, China, 1978-2006

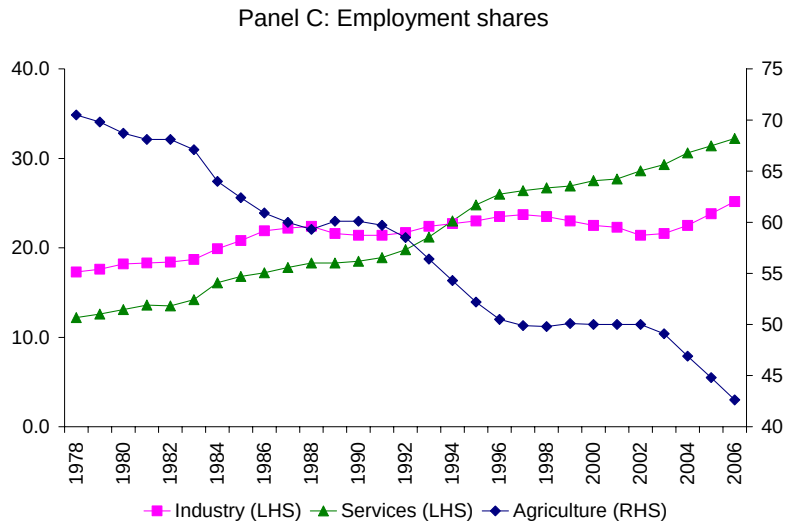
Panel A: Value added shares (2005 values)



Panel B: Labour productivity (index 1988=100)



2 There are many complexities to be addressed in interpreting these data. There is a break in the Chinese employment data in 1990, although this has little impact on the trends discussed here. The employment shakeout in state-owned manufacturing enterprises after about 1996 was massive, and must be a significant contributor to the trends noted here. Finally, since 2004 the official data report a more rapid growth in employment in industry, with a slowing of productivity growth to about 5 per cent, and a sharper decline in employment in agriculture, implying annual gains in rural value added per employee of about 10 per cent per annum in recent years. It is too early to be sure what these recent figures actually mean.



Source: NBSC (2006, 2007).

Thus in employment terms (Panel C), the story since 1978 is primarily one of services rather than industry. Between 1978 and 2006 the agricultural share of employment fell by 28 percentage points, from 70.5 per cent to 42.6 per cent. Most of the falling share went into services, the share of which rose by 20 percentage points (from 12.2 per cent to 32.2 per cent) and 8 percentage points went into industry. Most of the increase in the industrial share took place before 1986, and for nearly two decades between 1986 and 2004 there was no increase in the share of industrial employment. This is hardly the traditional industrialization model at work.

4 Some constraints on development through industrialization

In this section some of the factors that place constraints on greater involvement by the developing countries in manufacturing trade are reviewed, and their recent position in global trade in manufactures is noted.

4.1 Intensified competition in world manufacturing trade

Perhaps the most obvious factor is the greatly increased competition in world trade, with rapid growth in exports from China and the transition economies of Eastern Europe adding to strong competition from the newly industrialized countries (NICs). As Table 4 shows, by 2005 the manufactured exports of this group totalled over US$1.4 trillion, having increased by 14.3 per cent per annum (double the rate of such exports from all other countries) over 1990-2005, and by 15.6 per cent per annum in the world trade boom since 2000. Growing competition from these sources of supply must put increased pressure on the exports of developing countries, while also leading to increased import penetration.

By far the most important case is that of China, whose longer-term export orientation has been given new impetus by its entry into the WTO in 2001. Between 2001 and 2005 China's total merchandise exports grew by 30 per cent per annum, from US$266 billion in 2001 to US$762 billion in 2005; as a result, China's share of world trade (excluding

Hong Kong) nearly doubled from 3.9 per cent in 2000 to 7.3 per cent in 2005 (WTO 2006). This rapid growth has continued since 2005, with exports increasing 27.2 per cent in 2006 and by 26.7 per cent in the first half of 2007 relative to the same period of 2006. China's share of world merchandise trade could reach 15 per cent by 2015, and continue to rise thereafter, and a very high proportion of China's exports are manufactured goods. But China's growth has also led to a rapid growth in its imports (which increased by 27 per cent per annum, from US$244 billion in 2001 to US$792 billion in 2006).

Such surging trade growth must inevitably have major impacts on other countries, both developed and developing. Given the nature of China's growth and trade, there is a theoretical expectation that this impact will vary sharply across countries (Ianchovichina and Walmsley 2005). In Japan and the NICs of Asia (such as South Korea and Taiwan), which produce intermediate and capital goods for use in China, the boost to exports to China should more than offset increased competition in their export markets. A similar effect is evident in Australia, where induced investment in resources seems to have more than offset increased competition in manufactured goods. But in poorer countries, competing with China in world markets for consumer goods but with more limited ability to supply China's import needs, the impact could be sharply negative.

In one of the few empirical studies of these issues, Eichengreen, Rhee and Hui Tong (2007) find support for this differential impact in an econometric study of 13 Asian economies. They find a general tendency for China's exports to crowd out exports from other Asian countries, but that this is largely confined to consumer goods. For example, a 10 per cent increase in China's exports of textiles leads on average to a 4 per cent fall

Table 4
Global manufacturing exports, by selected countries and regions, 1990-2005

	Manufactured exports (US$billion)			Rate of growth of manufactured exports (% per annum)		
	1990	2000	2005	1990-2000	2000-05	1990-2005
OECD countries	2041.2	3676.4	5339.0	6.1	7.7	6.6
Rapid export growth regions						
SE Asian NICs	129.9	389.4	546.1	11.6	7.0	10.0
China	46.0	222.3	702.6	17.1	25.9	19.9
Transition economies	16.2	74.4	169.4	16.5	17.9	16.9
Total	192.2	686.2	1418.1	13.6	15.6	14.3
Other developing countries						
Brazil	16.1	31.8	61.6	7.0	14.1	9.3
India	12.5	34.6	69.8	10.7	15.1	12.1
South Africa	8.3	20.2	30.7	9.3	8.7	9.1
All other countries	93.1	238.1	334.8	9.8	7.1	8.9
Total	114.0	293.0	435.2	9.9	8.2	9.3
World	2347.4	4655.6	7192.3	7.1	9.1	7.8

Note: Data for China exclude exports from Hong Kong, but include China's exports to Hong Kong. The world total excludes exports from Hong Kong that are re-exports of imports from other countries, notably China.

Source: WTO (2006).

in textile exports from other Asian countries. They also find a strong tendency for increased exports from these countries to China, but this is mainly in the market for capital goods. Thus China's rapid growth has positive effects on its high-income neighbours but negative effects on the less-developed countries in the region. Their findings for Indonesia are mixed, with a positive effect through intermediate goods (defined as including energy supplies) broadly offsetting substantial crowding out of consumer goods exports. This study uses data only up to 2003 and a simple capital/intermediate/consumer goods classification, but nevertheless provides some confirmation for concerns that China's rapid trade growth could have adverse effects for some poorer developing countries.

4.2 Fragmentation and increasing technological requirements in manufacturing

A wide range of changes in the nature of global manufacturing that have taken place over the last 10-15 years also make it more difficult for developing countries outside East Asia to expand manufactured exports. One important such change is the rise of so-called fragmentation trade, whereby parts, components and finished goods are often assembled in different places under the over control of a global integrator. Such fragmented or networked trade may take different forms in different industries – such as production of components to agreed specifications in the ICT and motor vehicles industries, or sub-contracting by tender of final production to a pre-determined design and specification in the TCF industries – but is now very important overall. For example, in a study of trade in machinery and transport equipment, Athukorala (2006) found that the share of parts and components in total machinery and transport imports globally was 44 per cent, and that for the countries of East Asia as a whole it was just on 50 per cent.

These and related factors mean that other developing countries face two challenges to rapidly expanding exports: gaining access to the networks that control a rising share of world manufacturing trade (and doing so at a price that is profitable) and achieving the technological level for production to the exacting quality standards now required in world markets. Again it seems likely that the demands for quality and performance, and for the availability of the production technology that can meet these demands, will increase further, for example as a new round of performance specifications are imposed to reduce energy use and to make products more environmentally sustainable.

4.3 The position of manufacturing in poorer countries

In spite of these constraints, developing countries outside East Asia have achieved some growth in exports of manufactures, as indicated in Tables 4 and 5. India, Brazil and South Africa have each increased their share of global manufacturing exports over 1990-2005, India substantially (from 0.5 per cent to 1.0 per cent) and Brazil and South Africa more modestly (0.7 per cent to 0.9 per cent and from 0.35 per cent to 0.43 per cent, respectively). The share of manufactured exports captured by all other developing countries also rose from 4.0 per cent in 1990 to 4.7 per cent in 2005, with the major contributors being machinery and transport and ICT exports from developing countries in South East Asia and chemicals and clothing exports from other developing countries. But after 2000, as the impact of China began to intensify, trends in these countries diverged sharply. Over 2000-05 exports of manufactures from both Brazil and

India continued to grow at rates above the global figure, and their shares increased. But growth was below the global average for South Africa, and the share of all other developing countries in world manufactured exports fell from 5.1 per cent in 2000 to 4.7 per cent in 2005. As a result, the share of all developing countries outside the rapid export growth regions fell over this five year period.

Another perspective on the role of manufacturing is the distribution of real manufacturing value added (MVA) across countries, and Table 6 summarizes some recent estimates. Outside the industrialized countries, China and the NICs, all developing countries accounted for only 3.5 per cent of world MVA in 2006. While this is a significant increase on their share in 1996, the rate of increase has slowed since 2001 and is small in relation to the growth of China. On these estimates China captured an increased 2.2 percentage points of world MVA between 2001 and 2006, while the rise for all other developing countries was only 0.2 percentage points.

Table 5
Shares of global manufacturing trade, by selected countries and regions, 1990-2005

	Share of manufactured exports (%)		
	1990	2000	2005
OECD countries	87.0	79.0	74.2
Rapid export growth regions			
SE Asian NICs	5.5	8.4	7.6
China	2.0	4.8	9.8
Transition economies	0.7	1.6	2.4
Total	8.2	14.7	19.7
Other developing countries			
Brazil	0.7	0.7	0.9
India	0.5	0.7	1.0
South Africa	0.4	0.4	0.4
All other countries	4.0	5.1	4.7
Total	4.9	6.3	6.1
World	100.0	100.0	100.0

Note: Data for China exclude exports from Hong Kong, but include China's exports to Hong Kong. The world total excludes exports from Hong Kong that are re-exports of imports from other countries, notably China.

Source: WTO (2006).

Table 6
Distribution of real manufacturing value added, by major country grouping

	Industrialized countries	Newly industrialized countries	China (excluding Hong Kong)	All other countries
		(% of world total)		
1996	79.6	13.0	4.6	2.8
2001	77.5	13.1	6.1	3.3
2006	73.3	14.8	8.3	3.5

Source: UNIDO database.

These data clearly require closer and more detailed analysis, but they appear to support the view that, while manufacturing will continue to play an important role in the growth of many countries, in current conditions 'big-push' industrialization is unlikely to drive the growth of any new developing countries outside East Asia in the foreseeable future.[3] Indeed, when enhanced import competition is also included, the existing manufacturing sectors in some countries could be under threat.

5 Development strategies based on agriculture and services

The final building block of my argument concerns the role of alternative strategies based on agriculture and services in the two major developing countries of the world: China is urgently seeking to develop such a strategy and India has, in fact, been implementing one.

5.1 Towards a new development strategy in China

In the Eleventh Five Year Plan (2006-11) China decided to pursue fundamental changes in its development strategy in the light of emerging problems. These problems – ranging from heavy energy use and serious pollution, uncontrolled fixed asset investment, and limited benefits being delivered to many in the population and growing inequality, especially in access to health and education – have led the government to search for policies to create a 'balanced and harmonious society' as the key national priority. Some of the issues being widely discussed within China include:

- the limited improvement in living conditions being achieved in rural areas, where the majority of the population still live, and the social tensions to which that may give rise;
- the pervasive impact of pollution and environmental damage, to the point of seriously reducing quality of life;
- the massive reliance on energy, and the costs involved in securing energy supplies to meet burgeoning demand;
- the deepening inequality in various dimensions, including east-west and urban-rural divergence as well as rising inequality in urban areas;
- constraints on the growth of education and health, and the growing importance of private income in gaining access to these essential services;
- high rates of household savings, in part a response to the need to accumulate funds to meet anticipated education and health expenses; and
- the macroeconomic vulnerability of the economy, with growth driven by soaring exports and high rates of FDI leading to excessive exposure to global trends and to acute problems in managing the exchange rate and domestic monetary conditions.

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3 Within East Asia such growth may be possible in Vietnam, where close links to China and other rapidly growing countries in East and Southeast Asia may enable Vietnam to be integrated into rapidly expanding trade and industrial activities in the region.

Many of the issues with the present expansion have been recognized by the Chinese government, and are being actively addressed in the process of implementing the Eleventh Plan. In his March 2006 *Report on the Work of the Government*, Premier Wen Jiabao said of the issues arising from the Tenth Plan period (2001-05):

> The main problems were an unbalanced economic structure, weak capacity for independent innovation, slow change in the pattern of economic growth, excessive consumption of energy and resources, worsening environmental pollution, serious unemployment, imbalance between investment and consumption, widening gaps in development between urban and rural areas and between regions, growing disparities between certain income groups, and inadequate development of social programmes. We need to work hard to solve all these problems.

It is also widely recognized that more serious social unrest than at present is possible if these issues are not resolved.

As one observer has written, China's Eleventh Five Year Plan proposals for the period 2006-10 are remarkable:

> There emerges from this Plan document a rich and comprehensive vision of a sustainable development process in China, and a glimpse of the kind of government role that would be required by this development process. The vision is of a society that is more creative, more focused on human resource development, and treads with a lighter and more environmentally benign step (Naughton 2006: 9).

But it is one thing to outline a vision of a sustainable economy and a harmonious society and quite another to define and implement a detailed set of programmes to give effect to this vision. This is especially so in such a diverse, vibrant and internationally engaged society as contemporary China. The forces shaping the current growth pattern – from the role of local governments and the limited power of the central government, the strong influence of foreign companies and investors and the level of the exchange rate to the popular desire for a strong China and a better life – are complex and inter-related, and it will take a major effort to re-align them. Over the first one-third of the Plan period, progress in changing direction seems to have been limited. But achieving this re-direction remains a central commitment of the Chinese government, and either success or failure will have important implications both for China and for the world economy as a whole.

5.2 Rapid growth led by the service sector in India

The second case is that of India, which has recently achieved rapid growth in GDP, of the order of 7-9 per cent per annum, in the past few years in a services oriented economy. While India is striving to increase the role of manufacturing and of goods exports, the fact remains that the Indian acceleration has been driven by services, and by service exports, rather than by the industrial sector. As documented below, in India over 2000-05 the service sector provided two-thirds of the increase in real GDP.

There are many distinctive features of the Indian growth model, especially by comparison with that which has become common in East Asia. These include gradual

rather than sharp acceleration; a reliance on services and domestic consumption rather than on industry and exports; an emphasis on high technology and ICT services rather than on low-cost labour inputs to manufactured exports; growth driven by local private entrepreneurs as government withdraws rather than by government agencies and enterprises or foreign investors; low reliance on foreign direct investment; and, more generally, more emphasis on increased productivity than on a rapid increase in the factors of production (capital and labour).

Perhaps the most striking of these features is the heavy reliance on services. Table 7 illustrates the central role of the service sector as the driver of growth in India, in stark contrast with the current position in China. In 2005 industry (defined as including mining, manufacturing, energy production and water, and construction) amounted to only 19.3 per cent of GDP in constant 1999-2000 prices in India, by comparison with 47.5 per cent in China (see Table 7). In terms of growth contribution the difference is even greater: the service sector provided 73.5 per cent of growth in real GDP in India over 2000-05, by comparison to 41.6 per cent in China; industry provided 52.3 per cent of growth over this period in China, but little over half that in India (17.8 per cent). This is a stark difference between the two economies, and India's recent growth can truly be described as driven by the services sector.

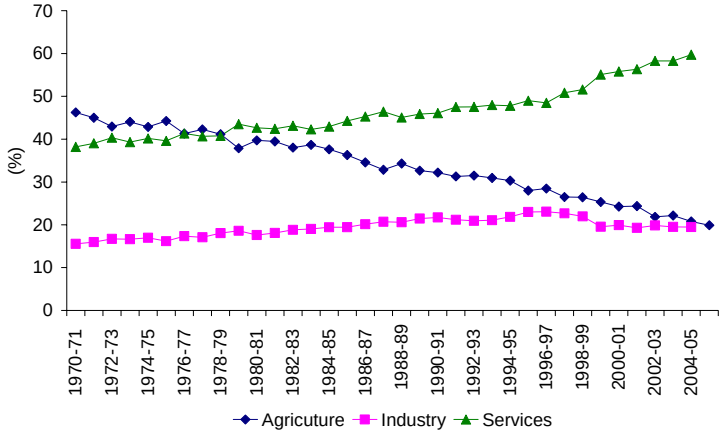
Table 7
Role of industry and services in India and China

	Share in GDP, 2005 (%)		Real growth rate (% per annum)		Share of GDP growth, 2000-05 (%)	
	China	India	China	India	China	India
Agriculture	12.6	19.9	3.9	2.6	6.1	8.6
Industry	47.5	19.3	10.7	6.1	52.3	17.8
Services	39.9	60.7	10.0	8.6	41.6	73.5
Total	100.0	100.0	9.5	6.8	100.0	100.0

Notes: For China 2005 values are used as the base. Data for India is for the year 2005-06 (the year ending 31 March 2006) and for the five years to 2005-06, and is in constant 1999-2000 prices.

Source: NBSC (2006); GoI (MOSPI) (nd).

Figure 2
Value added shares by major sector, India, 1970-71 to 2005-06



Note: Based on data at constant 1993-94 prices until 1998-99, and on data at constant 1999-2000 prices from 1999-2000. Thus there is a (small) break in the series at this point.

Source: GoI (MOSPI) (nd); China NBSC (2006, 2007).

Table 8
Structure of Indian real GDP and GDP growth, 1999-2000 to 2004-05

	Growth rate 1999-2000 to 2004-05	Share of GDP 2004-05
	(% per annum)	(%)
Agriculture, forestry and fishing	1.8	20.8
Mining and quarrying	4.8	2.2
Manufacturing	6.4	15.1
Electricity, gas and water supply	3.5	2.2
Construction	8.2	6.5
Trade, hotels and restaurant	7.9	15.5
Transport, storage and communication	12.6	10.0
Finance, insurance, real estate and business services	6.6	13.4
Community, social and personal services	5.4	14.3
Gross domestic product at factor cost	6.0	100.0

Source: GoI (MOSPI) (nd).

Figure 2 places this trend in broader historical context, making clear that it is by no means recent phenomenon. Over the past thirty years the reduction in the share of agriculture in GDP has been almost completely offset by the growth of the service sector, rather than by any significant rise in the industrial share.

What does such services driven growth look like? Table 8 shows that over the five years to 2004-05 three sectors – trade, hotels and restaurants; transport, storage and communication; and finance, insurance, real estate and business services – all grew at above the national growth rate, and in 2004-05 provided nearly 40 per cent of GDP. This may indeed be 'big-push' growth driven by services, as there is every reason for supposing that many such activities are associated with the key conditions of fixed costs and increasing returns, increasing use of labour at higher productivity levels and pecuniary externalities.

6 Conclusions

There are a number of theories of the link between industrialization and development, but one simple yet robust model, that of Murphy, Sheifler and Vishny (1989), captures many of the elements of earlier work. In this two-sector model the key elements are increasing returns, internal to the firm, in a modern sector; a substantial surplus labour in the traditional sector willing to move, with a wage premium to the modern sector; and pecuniary externalities between industries within the modern sector, whereby expansion in one sector increases the demand for the output of other sectors even if it is individually unprofitable. There is evidence that these conditions were met by the industrial sector during the development of key advanced countries, although in latecomers such as Korea the shift of labour into industry was reversed at a relatively early stage of development. But there is nothing about these conditions that inherently relate to industry or manufacturing – any 'modern' sector meeting the conditions of increasing returns, labour shift to higher productivity uses and pecuniary externalities could drive sustained growth. These conditions could be met by many service industries.

China's development is a particularly interesting and important case in point. The initial phase of China's growth after 1979 was driven more by agriculture and services than by industry, but from about 1990 industry has been the major contributor to China's growth. In this sense China has experienced a process of industrialization over the past two decades. But in terms of employment the predominant shift has been from agriculture to services between 1978 and 2006, and the share of industrial employment was flat for nearly two decades to 2004. Thus this period cannot be regarded as big-push industrialization as characterized by Murphy, Sheifler and Vishny (1989). But if many parts of China's service industries (such as communications, transport, wholesale trade and distribution and business services) meet their three conditions, there is no reason why this experience should not be described as a big-push driven in part by the service sector. Further, India's rapid growth can plausibly be regarded as a service-led big-push, as services provided nearly three-quarters of the increase in real GDP in India over the five years to 2005-06.

I suggest that a central challenge for development theory and practice now is to understand and implement rapid growth based on services, and on a closer link between services and the rural sector. Little is understood about how to stimulate service growth in a developing country, as China's difficulties in changing strategies suggest. But industrialization as it used to be understood is no longer a realistic option for most developing countries, and they need to find ways of participating in the growth of the modern services sector, which can directly improve the living standards of their people.

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