

# Industrial development and economic growth: Implications for poverty reduction and income inequality

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## 1. Introduction

The share of poor people in the global population has declined during recent decades. According to Chen and Ravallion (2004), one-third of the population of the world lived in poverty in 1981, whereas the share was 18 per cent in 2001. The decline is largely due to rapid economic growth in population-rich countries like China and India. There are, however, remarkable differences between countries and between regions in the developing world. Some regions and countries, notably in East Asia, are rapidly catching up to industrialized countries. Others, especially in Sub-Saharan Africa, are lagging far behind and the share of poor people in the population has even increased in some countries.

Industrial development has had an important role in the economic growth of countries like China, the Republic of Korea (Korea), Taiwan Province of China (Taiwan), and Indonesia. Along with accelerated growth, poverty rates have declined in many countries. Some countries have managed to achieve growth with equity, whereas in others inequality has remained high. In this chapter, the growth stories of seven countries – China, India, Korea, Taiwan, Indonesia, Mexico and Brazil – are described and discussed. The main emphasis is on describing their growth processes and strategies, the role of industrial development, the contribution of a range of policies to growth performance, and the impact of growth on poverty and income inequality. The study begins with a short theoretical discussion of the impact of industrial development on growth and the impact of growth on poverty and income inequality and then proceeds to the country examples. The final section discusses the lessons learnt.

## 2. The role of structural change in economic growth

The current understanding of economic growth is largely based on the neo-classical growth model developed by Robert Solow (1956). In the Solow model, capital accumulation is a major factor contributing to economic growth. Productivity growth – measured as an increase in output per worker – results from increases in the amount of capital per worker, or capital accumulation (e.g. Fagerberg 1994). Capital deepening will continue until the

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economy reaches its steady state – a point at which net investments grow at the same rate as the labour force and the capital-labour ratio remains constant. The further the economy is below its steady state, the faster it should grow (see e.g. Jones 1998). In the steady state, all per capita income growth is due to exogenous technological change. The rate of technological process is assumed to be constant and not impacted by economic incentives. Several authors have found that capital and labour actually explain only a fraction of output growth and that allowing for the quality of the labour force (human capital) only partially reduces the unexplained growth – or Solow residual.

Endogenous growth theory, initiated by Romer (1986, 1990) and Lucas (1988), focuses on explaining the Solow residual. Technological change becomes endogenous to the model and is a result of the allocative choices of economic agents (see Aghion and Howitt 1998, Veloso and Soto 2001). Technological progress is driven by R&D activities which in turn are fuelled by private firms' aim to profit from inventions. Unlike other production inputs, ideas and knowledge are nonrivalrous (see Romer 1990). Moreover, new knowledge can augment the productivity of existing knowledge, yielding increasing returns to scale. Because of this, the marginal productivity of capital does not decline with increasing GDP per capita, and incomes need not converge across countries.

Technological change and innovations are essential sources of structural change. In Schumpeter's view, innovations lead to "creative destruction", a process whereby sectors and firms associated with old technologies decline and new sectors and firms emerge and grow (see Verspagen, 2000). More productive and profitable sectors and firms displace less productive and less profitable ones and aggregate productivity in the economy increases. Technological change is thus at the very centre of modern economic growth. Based on the observation that, beginning with the Industrial Revolution, technological change took place mainly in the manufacturing sector, authors like Kaldor (1970) and Cornwall (1977) have asserted that the expansion of this sector is a driving force for economic growth (see Verspagen, 2000). Moreover, Cornwall (1976, 1977) saw technological change in certain manufacturing sectors as a driving force for productivity growth in several other sectors.<sup>1</sup> Syrquin (1986) observes that, when overall growth accelerates, manufacturing typically leads the way and grows faster than other sectors. At low income levels, the share of manufacturing in GDP is, however, low and its immediate contribution to aggregate growth minor. When manufacturing increases its output share – often as a response to changes in domestic demand and in comparative advantage – faster sectoral growth noticeably raises the aggregate growth rates of output and labour productivity.

In developed countries, research and development (R&D) activities are the main driver of technological change. This is not, however, the only mechanism of technological change. Firms and individual employees learn by doing, increasing output and productivity even if technology or inputs

remain unchanged (see e.g. Arrow 1962). As R&D activities in developing countries are relatively limited and countries are far from the technological frontier, international technology diffusion is essential for productivity growth. International economic relations, especially international trade but also foreign direct investment, are important channels of technology transfer and increased productivity growth. However, technology diffusion can only be efficient if the level of human resources is high enough, incentives for technological improvement are strong, and institutions are relatively well-functioning.

One of the driving forces for structural change is the change in domestic and international demand. At relatively low income levels, individuals spend a significant part of their income on food. As income rises, this share tends to decline, whereas demand for manufactures rises. Similarly, as income rises further, demand for manufactures increases at diminishing rates, whereas demand for services rises rapidly. Changes in demand will also change sectoral employment and output shares and impact the economy's labour productivity. Furthermore, trade has an impact on countries' specialization patterns and on the rate of industrialization or structural change within industries. Under an open trade regime, countries tend to specialize in the production of commodities for which they have a comparative advantage and import commodities which are relatively expensive to produce domestically. Trade openness is also likely to bring foreign investment into the country. This is often vital, and especially so at early stages of development. It is also likely to increase productivity as domestic companies are facing external competition.

However, the composition of foreign trade matters as well as the openness of trade (e.g. Amable, 2000; also, Rodrik in this volume). Moreover, specialization in itself does not necessarily lead to higher growth rates. This is most evident in the case of developing countries dependent on exports of primary products. As real international prices of non-oil commodities have trended downward over time and are subject to sizeable short-term fluctuations, specialization in primary production seldom promotes sustained economic growth.

### **3. Economic growth and the poor**

Rapid economic growth is often essential for achieving a reduction in absolute poverty. As growth may be associated with increased income inequality, it does not automatically address the whole poverty problem. The traditional economic development literature considered highly unequal income and wealth distribution as a necessary condition for continued and rapid economic growth. The basic economic argument to justify large income inequalities was that high incomes (personal and corporate) were a necessary condition for higher savings, which in turn were needed for investment and economic growth (Todaro, 1994).

The new political economy literature, on the other hand, links greater inequality to lower future growth paths, and considers it an impediment to poverty-reducing growth, as the elasticity of poverty with respect to growth is found to decline when inequality increases (e.g. Niskanen and Thorbecke, 2004). The research in this area has not, however, been able to identify the mechanisms through which this happens (Helpman, 2004). One possible explanation is credit market failure, whereby the poor are unable to use growth-promoting investment opportunities (in physical and human capital). The higher the proportion of credit-constrained people, the lower the level of investment and the rate of growth are. High inequality, manifested in a large proportion of population having poor health, nutrition, and education, is also likely to impact on overall labour productivity and to cause slower economic growth (Todaro, 1994). Raising income levels of the poor, on the other hand, stimulates demand for domestic products and increases employment and production. More equitable distribution of income may also act as a material and psychological incentive to widespread public participation in the development process (Todaro, 1994), whereas inequality may cause political and economic instability.

Even if there is no consensus on the proportion of the world's population living in absolute poverty, it is highly likely that the share of the poor in the global population has declined during the last two decades (see e.g. Wade, 2004).<sup>2</sup> This is largely due to rapid economic growth in countries like China and India. Differences between regions are, however, remarkable in the developing world. Especially in Sub-Saharan Africa, the number of poor people [living on less than \$1.08 a day (PPP)] significantly increased between 1981 and 2001 (Chen and Ravallion, 2004). Inequality between countries seems to have increased (e.g. Wade, 2004). Evidence on that is, however, somewhat controversial (as examples see e.g., Sala-i-Martin, 2002, and Milanovic, 2002) and depends e.g. on the methods used, countries included, timeframe and so on.

During the 1950s and 1960s there was a widespread move towards greater egalitarianism in many developing countries. Despite a decline, however, inequality remained high in many places because of the persistence of the traditional causes of inequality like high land concentration, unequal access to education and other public services, and the dominance of the mining and plantation sectors (Cornia, 2005). During the past twenty five years, inequality has been increasing again in many developing and developed countries. In Latin America, income inequality increased in many countries in the 1980s and also in the 1990s. Trend reversal also occurred in highly successful East Asian countries – where inequality decreased between the late 1950s (or early 1960s) and the late 1970s and early 1980s – and in India and China. Over the past 50 years, income inequality in China has followed a U-shaped pattern with the turn-around point located around the mid-1980s. Due to rapid economic growth there has, however, been a dramatic reduc-

tion in overall poverty in the 1981-2001 period. In India, the Gini coefficient of household consumption expenditure fell in the 1950s as a result of the partial land reform and affirmative action in favour of low caste groups, and stayed more or less at the same level until it rose in the 1990s during the years of gradual liberalization and globalization (Cornia and Kiiski, 2001). However, due to rapid growth India has also experienced a significant decline in poverty since the 1980s.

As the growth experiences of Taiwan and South Korea show, rapid economic growth does not inevitably lead to increased inequality at the early stages of development. Taiwan and South Korea have been able to combine economic growth and industrialization with decreased inequality, even if inequality has somewhat increased during recent years. However, some other countries have been less successful. In Thailand, for instance, rapid growth was accompanied by increased income inequality (e.g. Sarntisart, 2000). In general, the impacts of inequality on growth and of growth on inequality depend very much on national characteristics and initial levels of poverty and inequality, but especially on the nature of the development process – how growth is achieved, who participates, which sectors are given priority. The choice is not so much between growth and equality, but about the type of economic growth to be pursued (Todaro, 1994) and the policies to achieve it.

#### **4. Impact of industrialization and trade on the poor**

Industrialization is often essential for economic growth, and for long-run poverty reduction. The pattern of industrialization, however, impacts remarkably on how the poor benefit from growth. Pro-poor economic and industrial policies focus on increasing the economic returns to the productive factors that the poor possess, e.g. raising returns to unskilled labour, whereas policies promoting higher returns to capital and land tend to increase inequality, unless they also include changes in existing patterns of concentration of physical and human capital and of land ownership. Use of capital-intensive methods instead of labour-intensive ones tends to increase income disparities, as does the employment of skill-biased technologies, especially where the level of education is low and human capital concentrated. Also, the location of industrial facilities has an impact on overall poverty reduction and inequality. As enterprises are often concentrated in urban areas – because of ready access to skilled labour force, better infrastructure, larger markets and technological spillovers (e.g. Lanjouw and Lanjouw, 2001), industrialization may increase inequality between urban and rural areas. Promoting development of rural non-agricultural activities, like production in small and medium-sized enterprises (SMEs), may decrease this disparity.

The degree of economic openness of a country can have an important influence on its pattern of specialization and industrialization. If countries are open to trade they should, according to Heckscher-Ohlin theory, special-

ize in the production of commodities in which they have a comparative advantage. In labour-abundant countries, trade liberalization would tend to shift production from capital-intensive import substitutes towards labour-intensive exportables. Due to this change, domestic inequality in those countries is expected to decline because of the increased demand for labour, whereas inequality would increase in countries with an abundant endowment of capital. Liberalization of foreign direct investment can also decrease inequality in capital-importing countries, but that depends in part on the degree of skill-bias of technologies employed by foreign invested firms.

In several countries, trade and investment liberalization has, indeed, decreased absolute poverty and sometimes also inequality. Bourguignon and Morrison (1990), for example, analyze the determinants of inequality in 35 developing countries and conclude that the phased removal of trade protection in manufacturing reduces the income of the richest 20 per cent of the population and increases the income of the poorest 60 per cent. Dollar and Kraay (2004), who examined impacts of increased trade on growth and inequality, found changes in growth rates to be highly correlated with changes in trade volumes. No systematic relationship between changes in trade volumes and changes in household income inequality was found, and they conclude that on average greater globalization is a force for poverty reduction. Still, the impact of trade liberalization is likely to vary between countries, depending for instance on factor endowments, and liberalization creates both winners and losers. Similarly to international trade, the impact of foreign direct investments on income inequality is likely to vary between countries. Any foreign direct investment (FDI)-inequality relation depends e.g. on the sectoral composition of FDI, its impact on demand for unskilled workers, the skill bias of technical change induced through FDI, and the regional distribution of FDI (see e.g. Cornia, 2005).

## **5. Industrialization, economic growth, poverty and inequality: Country examples**

### **5.1 China**

After World War II, China adopted a development strategy that included deliberate insulation from the world economy, industrialization and economic dominance of the state. As the country was falling far behind Western countries, however, it began reforming its closed and centrally planned economy in 1978. Since reforms, growth has accelerated and in the 1980s and 1990s GDP growth rates were the highest in the world, 9.9 per cent and 10.3 per cent respectively, up from 6 per cent in the 1970s (World Bank, 2004a). Growth has been especially high in industry, the compound annual growth rates being 11.3 per cent between 1980 and 2002, with services also growing fast (10.4 per cent). The share of industry in GDP has increased from 35 per cent in 1965 to 46 per cent in 2004 (World Bank 2006), where-

as the share of agriculture has declined from 38 per cent to 13 per cent (Figure 1). At the same time, the ratio of exports of goods and services to GDP has increased from 3 per cent in 1970 to 34 per cent in 2004 (World Bank, 2006). Despite remarkable decline in the share of agricultural value added in GDP, the decline in agriculture's employment share has been much more modest. In 2002, 44 per cent of the labour force still worked in agriculture (World Bank, 2006). Compared with employment profiles of mature industrialized countries, China is still very much dependent on its agricultural sector (Dutta, 2005).

Between 1980 and 2001, the share of machinery and transport equipment in manufacturing value added has somewhat increased, from 22 per cent to 32 per cent (World Bank, 2006). The share of textiles and clothing has been declining, and while the sector produced 18 per cent of manufacturing value added in 1980, it produced 12 per cent in 2001. While exports of light industry manufactures like textiles are large and growing (Figure 2), their relative importance has declined somewhat and that of more skill-demanding manufactures has increased. In general, the volume of Chinese exports significantly expanded during the 1990s, and the share of manufactures in total merchandise exports also increased, exceeding 90 per cent in 2004 (World Bank, 2006).

In its reforms, China has followed a model similar to that of other successful East Asian countries. Growth has been based on rapid industrialization, increased trade openness and exports, and gradual liberalization of financial markets. Growth has been import-export led: technology and know-how have been imported from abroad and adapted to the domestic resources, in particular to the abundant labour force (Dutta, 2005). This has made the extensive production of export goods possible. The high domestic savings rate coupled with large foreign direct investment inflows have made massive investments in infrastructure possible. In addition, labour markets have been increasingly deregulated, facilitating labour mobility.

China's reforms started in the late 1970s and early 1980s with agricultural reform, which de-collectivized agricultural land and privatized land-use rights. Investments in rural infrastructure were increased, mandatory delivery of output to the state by farmers was reduced, and farmers were enabled to have a more market-oriented output mix (Ahya and Xie, 2004). Due to reforms, agricultural growth averaged almost 10 per cent per year during 1980-1984 and 6.2 per cent per year in the 1980s as a whole (Ahya and Xie, 2004), decreasing poverty in rural areas. Successful reform in the agricultural sector contributed substantially to reform and expansion of the manufacturing sector. Due to increased productivity in agriculture, surplus labour became available to migrate to the manufacturing sector. Furthermore, due to increased income, farmers were able to increase their expenditure on goods and services produced by the domestic manufacturing sector (Dutta, 2005). Industrial reforms started after agricultural reform with the opening up to

foreign investment and the establishment of township and village enterprises.

In the late 1980s and early 1990s, reforms focused on creating a pricing system and market institutions, and also on reducing the state's role in resource allocation. Since then, the focus has been on banking sector reform and state enterprise reform, which has included closing many unprofitable state-owned factories.

Due to high economic growth, the share of people living in absolute poverty has declined steeply during recent decades in China. The role of agricultural growth has been very important in poverty reduction, far more important during the 1980s and 1990s than growth in the secondary or tertiary sectors (Ravallion and Chen, 2004). According to Ravallion and Chen (2004), in the 20-year period after 1981, the proportion of population living under the poverty line fell from 53 per cent to 8 per cent. World Bank estimates, using one dollar a-day consumption as a measure of poverty, suggest that between 1990 and 2000 the poverty rate fell from 33 per cent to 16 per cent. Poverty reduction has not, however, been smooth and half of the decline took place in the early 1980s (Ravallion and Chen, 2004). Poverty reduction has also been more difficult in provinces that started the reform period with high inequality (Ravallion and Chen, 2004). Furthermore, despite poverty reduction at the national level, income inequality between regions and between rural and urban areas is still high.

After agricultural reform in the early 1980s, incomes tended to become more equal across the country. In the mid-1980s, however, economic reform favoured coastal cities with the development of special economic zones, which increased inequality between regions. While eastern China has attracted a remarkable amount of foreign direct investment and generated large export flows (see e.g. Wan et al. 2004), the inland and western regions, disadvantaged by scarce skills, low agglomeration economies and expensive transport, have fallen behind. Also, rural industrialization has been concentrated in eastern regions, which has increased inequality between rural areas. Rural industrialization has also widened income disparities within rural areas as labourers have become wealthier relative to those who have relied only on the land. According to Ravallion and Chen (2004), inequality in general has been increasing within rural and urban areas, and absolute inequality between urban and rural areas has increased appreciably.

China's fast growth has been based on rapid industrialization, high savings, massive investment in infrastructure and productive capacity, an increasingly deregulated labour market and an internationally open and competitive economy. The huge labour supply has made labour-intensive production possible, which in turn has increased average income and reduced poverty. While the investment rate has been remarkable in China, the efficiency with which capital is used is still low (Wolf, 2005).



## 5.2 India

The economic development strategy that India chose after the Second World War was very similar to China's – near autarky, industrialization and the dominance of the state in the economy. Development was considered synonymous with industrialization and industry was concentrating mainly on basic goods like steel and machinery. Private capital was not seen as an efficient motor for development, and it was considered to have a tendency towards monopolization. Because of that, state control was considered to be essential. The chosen development strategy was one of import substitution. Development policies included licensing of industrial activity, the reservation of key areas for state activity, controls over foreign direct investment, and interventions in the labour market (Kaplinsky, 1997).

As the chosen strategy turned out to be ineffective, bureaucratic and conducive to rent-seeking behaviour, policy reforms were started in the 1980s, and some provisional moves to encourage capital-goods imports, rationalize the tax system and relax industrial regulations were made. In the 1980s, however, reforms were less consistent than in China, and they only became systematic and broader at the beginning of 1990s, following a severe macroeconomic crisis. Acceleration of economic growth, however, started already in the 1980s, and Rodrik and Subramanian (2004) and DeLong (2001) consider the reforms and attitudinal changes of the 1980s as important reasons for India's current success. In the 1980s, the allocative role of the state in India's industrialization remained important, and only after the 1991 reforms did the driving force of resource allocation shift in favour of the market. The reforms undertaken in 1991 and thereafter included relaxation of the licensing system controlling internal production, currency devaluation, relaxation of restrictions on the inflow of foreign capital and technology transfer, abolition of quantitative restrictions on imports of raw materials, intermediates and capital goods, reduced tariff levels, relaxation of rules restricting large companies to expand existing units and construct new ones, and simplification of exchange controls (Kaplinsky, 1997). Furthermore, reforms included breaking public sector monopolies, reducing foreign currency debt dependence and tax reforms. However, most of the restrictive labour legislation was left intact and, in addition, the agricultural sector was left largely untouched. In general, the approach to liberalization in India has differed from the standard, Washington consensus, approach. Liberalization has been gradual and controlled, slow liberalization of trade and very gradual privatization have been emphasized, and capital account liberalization has been avoided thus far (Jha, 2002).

During the past 40 years, the Indian economy has undergone remarkable structural change. The share of agricultural value added in GDP has more than halved between 1965 and 2005, from 45 per cent to 19 per cent (Figure 3). Despite structural changes, agriculture still accounts for a very

high share of employment. At the same time, the expansion of services has been sizable, with its share of GDP increasing from 35 per cent in 1965 to 54 per cent in 2005. In contrast to many rapidly growing developing countries (especially in East Asia), there have not been sizable changes in the share of manufacturing (16 per cent in 2005 vs. 14 per cent in 1965). The share of textiles and clothing in manufacturing value added decreased between 1965 and 2000 (from 25 per cent to 13 per cent) (World Bank, 2006). The share of machinery and transport equipment was 19 per cent of manufacturing value added in 2000 (roughly the same as in 1965) and the share of chemicals was about the same (up from 10 per cent in 1965), with much of the increase in the 1990s.

In the 1980s and 1990s, GDP growth was moderately strong in India, the compound annual growth rate being 5.8 per cent in the 1980s and 5.4 per cent in 1990–2002. Growth has been occurring mainly in manufacturing and services. Between 1980 and 2002, the growth rate of manufacturing value-added averaged 6.6 per cent and that of services 7.1 per cent, while agriculture grew at only 2.8 per cent per year. In the 1990s, growth was remarkable in services.

High growth has been accompanied by increasing trade flows. For example, during the period 1991/92–2001/02, India's gross trade flows almost tripled, and the trade-GDP ratio increased from 21.3 per cent to 33.1 per cent. Growth has been especially rapid in services exports, which grew by 275 per cent, whereas merchandise exports grew by 145 per cent (Kelkar, 2004). The share of manufactures in merchandise exports has been increasing gradually but significantly. In 1962, manufactures made up 43 per cent of merchandise exports, while in 2003 the share was already three-quarters. Food exports comprised 11 per cent of merchandise exports in 2003 (World Bank, 2006). Within manufactures exports, light industries have significance, especially textiles and clothing. Gems (part of sub-category 66 in Figure 4) are also important exports. Recently, India has developed significant exports of chemicals, mostly drugs and dyes, and automotive components (Economist Intelligence Unit, 2005a).

In addition to rapid GDP growth, a sharp reduction in growth volatility has been important for the Indian economy. In the 24 years after 1980, the standard deviation of GDP growth has fallen to 1.9 per cent (Kelkar, 2004), one reason being the shift in the sectoral composition of output and the decrease in the importance of agriculture.

According to government estimates (presented e.g. in Srinivasan, 2004), the proportion of poor people in the total population (using national poverty lines) declined from 45.7 per cent in 1983 to 27.1 per cent in 1999–2000 in rural areas, and from 40.8 per cent to 23.6 per cent in urban areas. For the country as a whole, poverty declined from 44.5 per cent to 26.1 per cent. The widening of regional disparities has, however, been significant. After reforms, per capita expenditure differences between states have increased,

with already better-off states growing more rapidly than poorer states (Deaton and Drèze, 2002). Southern and western states have been doing relatively better, as they have been able to utilize the opportunities of globalization and the market economy, whereas in some other states weaknesses in human capital and governance have generated reduced growth rates in the post-1990 period (Kelkar, 2004). Furthermore, rural-urban disparities of per capita expenditure have risen (Deaton and Drèze, 2002), even if inequality has increased faster within urban areas than in rural areas (see e.g. Deaton and Drèze, 2002; Jha, 2002). Due to slow liberalization, however, changes in inequality following reforms have been relatively modest in India compared e.g. to transition economies (Jha, 2002).

The impact of the reforms of the early 1990s on manufacturing firms depended, *inter alia*, on their location and technological level. According to Aghion et al. (2003), liberalization fostered innovation, profits and growth in industries that were close to the technological frontier, while it reduced them in industries that were far from the frontier. Also, pro-worker labour regulations at state level discouraged innovation and growth in all industries and this effect increased with liberalization (Aghion et al. 2003, 2006). Lall and Chakravorty (2004) conclude that structural reforms have had different impact on different states. In seeking efficient locations, private sector investments favoured existing industrial clusters and coastal districts, whereas state-owned industry has been less oriented towards such locations (Lall and Chakravorty, 2004). Due to reforms, the role of the state as industrial owner and industrial location regulator has been substantially curtailed and the dominance of private sector industrialization has increased, which is likely to lead to higher inequality between regions. According to Mishra and Kumar (2005), however, trade liberalization has decreased wage inequality in industry. In sectors with large tariff reductions, wages increased relative to the economy-wide average. Since the tariff reductions were relatively larger in sectors with a higher proportion of unskilled workers and these sectors experienced an increase in relative wages, these unskilled workers experienced an increase in income relative to skilled workers (Mishra and Kumar, 2005).

The sectoral composition of growth is likely to matter to the aggregate rate of poverty reduction and changes in income inequality. Jha (2002) argues that the rise of inequality during the years of rapid growth has been due to a shift in earnings from labour to capital income, rapid growth of the services sector, a decrease in the rate of labour absorption during the reform period, and rapid growth of banking, financial institutions, insurance and real estate. Real wages for agricultural labourers have grown at around 2.5 per cent per year in the 1990s, whereas public sector salaries have grown at 5 per cent per year (Deaton and Drèze, 2002), which is one of the reasons for increased inequality between rural and urban areas. According to Ravallion and Datt (1996), changes in poverty (during the period 1951-1991) have responded more to rural than to urban economic growth. They also argue that primary

and (informal) tertiary sector growth has had greater impact on poverty than secondary sector growth. Over the long term, the secondary sector has not been a significant source of poverty reduction (Ravallion, 2004). One reason for that is likely to be high inequality in human resource endowments, preventing the poor from participating in the non-farm formal sector (see e.g. Ravallion, 2004), especially in the more skill demanding activities. As absolute poverty in India is principally a rural problem, the greatest poverty reduction can be attained by emphasizing rural development, in particular, agricultural development. In some regions, however, poverty reduction is not possible through investments in agriculture, and employment in manufacturing or services is the only possible way to reduce poverty.

The reform process has had clearly beneficial effects on the Indian economy. Growth rates have been high and growth more stable than earlier. The service sector has expanded particularly rapidly, in terms of both output and exports. Along with economic growth, poverty has significantly declined. India's economy, however, still confronts many obstacles hindering its growth. Limiting factors for development have included: an inefficient legal system and extensive regulations like those of the labour market; a low savings rate which has limited capital formation; a minor role for FDI, especially when compared to China; lack of access to finance, especially for small businesses; high tariff levels which restrict competition in domestic markets and hinder the development of potential exporters.

### 5.3 South Korea

Economic growth in South Korea has been rapid during the last 40-45 years. During its rapid industrialization, the country was able to achieve remarkable growth with steep reductions in poverty and inequality. In 1960-2002, the compound annual GDP growth rate (CAGR) was 7.5 per cent. Growth has been high especially in manufacturing. Between 1960 and 1969, the CAGR of manufacturing value added was 16.5 per cent and between 1970 and 1979 it was 17.6 per cent. Growth in agriculture's value-added has been continuously declining, falling from 5.1 per cent in the 1960s to only 1.7 per cent during 1990-2002. Rapid growth has been associated with significant structural changes (Figure 5). In 1965, the share of manufacturing in GDP was 14 per cent and that of agriculture 39 per cent. In 1977, the shares for both sectors were around 24 per cent, and in 2004 they were 29 per cent and 4 per cent, respectively (World Bank, 2006). Employment in agriculture has also declined. In 1980, 34 per cent of all employees (18 per cent in 1990) still worked in agriculture; in 2003 the share was only 9 per cent (World Bank, 2006). The industrial employment share has had an inverted U-shape form during the last 25 years: in 2003 industry employed 28 per cent of employees, compared with 37 per cent in 1991 and 29 per cent in 1980. The share of employment in services has been continuously increasing during the last decade, reaching 64 per cent in 2003.

In the late 1950s, the Korean government still pursued a relatively protectionist import substitution strategy. Imports were restricted by high tariffs and import licensing systems. Most of the products exported were primary products, and exports remained negligible (Lee 1997). In the early 1960s, however, government policy shifted from import substitution towards export orientation. Policies included trade reforms and export promotion, direct export subsidies, tax exemption and low-interest export loans. Government intervention was strong, and export targets were formulated in a detailed way by product, market and exporting firm. Exporters also enjoyed duty-free access to imports (Noland and Pack, 2003). Infant industries were protected. In general, however, successful export performance was likely to bring on more favourable treatment by government. Export promoting policies were highly successful, since during the 1962-73 period the share of exports in GNP increased from 6 per cent to 30 per cent (Lee, 1997). At the same time, the export structure changed dramatically, with the share of manufactures exports in total merchandise exports increasing from 20 per cent to 84 per cent. Within industrial products, the export of light manufactures, in which Korea had a comparative advantage, was especially important in the 1960s. In the 1970s, economic policy changed and massive investment programs were introduced to promote heavy industries, like shipbuilding, steel and chemicals. The aim was to change the export composition, reduce dependence on low-wage sectors and sustain growth. Also, efforts at selective industrial policies were intensified and, in contrast to the rule-based policies of the 1960s, greater policy discretion was introduced. This included an increase of direct government control in the banking sector in order to channel funds to preferred sectors, projects or firms (Noland and Pack, 2003). Priority industries also received tax incentives as well as trade protection. Basic metals and chemical industry received a remarkable share of investments, whereas textile and light industry benefited little from the policy shift (see e.g. Noland and Pack, 2003). The impacts of this selective industrial policy can be seen in the current export structure of Korea (Figure 6). During the recent years, exports of labour-intensive goods like clothing have been in decline or stagnant. At the same time, the sophistication of engineering exports has grown, and the car industry has been evolving rapidly (Economist Intelligence Unit, 2005b).

With rapid economic growth, absolute poverty has decreased sharply in Korea. Even as late as the 1960s, poverty was widespread, but in the late 1990s the share of population living on less than \$1 a day (PPP) was only 2 per cent (World Bank, 2004a). Export-oriented industrialization, which generated rapid economic growth, has had a major role in the reduction. It created high demand for labour and rapid expansion of employment, increasing incomes and reducing poverty (World Bank, 2004b). At the outset, economic growth was heavily based on export of labour-intensive manufactures. Subsequently, an increase of human capital has made possible the specialization on more sophisticated export items. It has also enabled productivity to

rise, and increased innovative ability and adaptation of technology developed elsewhere (see e.g. World Bank, 2004b), all of which have contributed to continued high growth. Compared to many other developing countries, investment in human resources has been extensive in Korea. Education has provided avenues of upward social mobility<sup>3</sup>.

In addition to growth based on industrialization, the land reform of the late 1940s also contributed to the reduction of poverty, especially in rural areas (see e.g. Henderson et al., 2002). Land reform facilitated a vast transfer of arable land ownership to the peasantry. There were major improvements in productivity (Henderson et al. 2002). An increase of agricultural product prices in the late 1960s and the green revolution of the 1970s, as well as government investments in rural development, all increased income in rural areas and reduced rural poverty (World Bank, 2004b). The government growth strategy, however, has laid emphasis on industrialization and urbanization, which have led to more rapid growth of income in urban areas and increasing income disparity between rural and urban areas.

Poverty decline has been extremely rapid in Korea. After the rapid improvements between 1960s and 1980s, the rate of decline has slowed down (Henderson et al., 2002), but as of the beginning of the 1990s growth was generally still highly pro-poor (see e.g. Kakwani and Pernia, 2000). However, the change in income inequality has not been as impressive as the decrease in poverty. According to Choo (1993), there was no significant change in the size distribution of income between 1965 and 1990 (see also Lee, 1997). On the other hand, Fields and Yoo (2000) argue that labour income inequality, as measured by the Gini coefficient, fell remarkably between the late 1970s and early 1990s. Since the economic crisis of the late 1990s, inequality has been increasing. Compared to many Southeast Asian countries, however, income distribution in Korea has been and still is distinctly more equitable. Government social welfare programs, which have provided the poor with subsistence assistance and medical services, have been one of the reasons for relatively low inequality.

#### **5.4 Taiwan Province of China**

Like Korea, Taiwan has experienced rapid economic growth over the past half century. The average annual growth rate during that period has been 8.4 per cent, reaching almost 10 per cent in the 1960s and 1970s (Liang and Mei, 2005). Economic growth has been heavily based on the growth of manufacturing, and from the 1960s onwards on export-orientation. At the outset, the country specialized in labour-intensive production and later shifted towards capital-intensive and high-tech production.

As in Korea, government intervention in Taiwan has also been remarkable. In the 1950s, the development strategy was one of import substitution, but in the 1960s, policy started to change towards export-orientation. Over the years, and especially before the 1990s, government policies included

extensive use of tariffs and non-tariff barriers on imports (especially in agriculture), selective credit policies favouring preferred sectors, a government-led push for exports of manufactures, sectoral industrial policies to support specific industries, and the promotion of state-owned firms (see e.g. Noland and Pack, 2003). The government also set up special industrial parks, in which several privileges, like duty free imports of materials, were provided for occupant firms. Policies have also included the establishment of institutions designed to identify, transfer, diffuse and absorb foreign industrial technologies and undertake innovation (Noland and Pack, 2003), in order to ease Taiwan's transfer to high-tech production.

Taiwan's post-war growth pattern has to a large extent been one of growth with equity. Already in the 1950s, when rapid growth and industrialization were at the beginning, Taiwan had a much more equal income distribution than many other developing countries. Major land reforms introduced after the war which reduced inequality and rural poverty are one of the reasons. From the mid-1960s onwards, income inequality further declined due to low inequality of wage income as a result of rapid growth of employment in export-driven, labour-intensive manufacturing industries. Demand for all types of labour was at that time expanding, but demand for low-skill workers was expanding at the fastest rate. Average wage rates rose and, as the wages of low-educated workers were rising faster than higher educated ones, wage differentials narrowed. In addition, due to improvements in education, the supply of higher educated workers was relatively high, which decreased marginal returns to education (Chu 1995, Kanbur 2000). However, in the 1980s the development of skill-intensive sectors pushed up wage inequality, while the share of capital and property in total income increased. This was linked to the increasing importance of larger private enterprises and escalation of land values (Kanbur, 2000; Cornia and Kiiski, 2001). In general, economic growth in Taiwan has been associated with even less income inequality than in Korea. In Korea, capital-intensive industries and large conglomerates were favoured over light industries, whereas in Taiwan SMEs have had greater importance.

## 5.5 Indonesia

From the late 1960s until the Asian economic crisis of 1997, economic growth in Indonesia was very rapid, averaging 7 per cent per year (Hofman et al., 2004). During that 30-year period, the country moved from a predominantly agricultural production base to a more industrialized base – the share of agriculture in GDP declined from 56 per cent in 1965 to 16 per cent in 1997, and the share of industry increased from 13 per cent to 44 per cent (Figure 7). In the 1970s and 1980s, oil production had a high importance – e.g., in 1980 the share of mining and quarrying (including crude oil) in GDP was 25.7 per cent (Ishida, 2003). From the mid-1980s onwards, manufacturing has been the driving force behind economic growth. Agriculture remains,

however, a very important sector in terms of employment: in 2004 it accounted for 43 per cent of total employment, whereas industry's share was 13 per cent (World Bank, 2006). Rapid growth of the economy has benefited a large share of the population, as poverty fell from more than 70 per cent in the mid-1960s to 11 per cent in 1996 (Hofman et al., 2004). The Asian economic crisis in 1997, however, caused an increase in poverty rates.

In the mid-1960s, Indonesia was still one of the least industrialized of the large developing countries (Feridhanusetyawan, 2000), poverty was widespread and society in economic and political chaos. In 1966, after a regime change, thorough reforms were started. The first phase of economic liberalization involved a shift away from a closed economy and heavily interventionist policies to a more market oriented economy (Feridhanusetyawan, 2000). Liberalization entailed the restoration of external stability, fiscal constraints, restoration of the banking system, liberalization of the investment regime, and agricultural support programs aiming especially at self-sufficiency in rice production. Liberalization of the investment regime included incentives and assurances to new foreign investors, and the return of previously nationalized foreign-owned industrial and trading properties. Preferential treatment for state enterprises was reduced. New investment laws provided the same incentives to domestic and foreign investors. Export and import procedures were simplified. Indonesia also moved to a unified, fully convertible fixed exchange rate, which gave a boost to exports and foreign direct investment. Most of the price controls were eliminated, and a balanced budget policy was adopted. Restoration of the banking system included creation of a national central bank, improved access to credit, authorized establishment of foreign bank branches and of private domestic banks (Hofman et al. 2004). Chosen policies fostered broad-based industrial growth in the country (Hofman et al. 2004), but the liberal policy period did not last long. During the 1970s, Indonesia experienced a rapid growth of income due to an increase of oil production. Oil revenues made it possible for the government to finance capital-intensive investments and engage directly in production, and there was less need to rely on external sources of capital (Feridhanusetyawan, 2000). Furthermore, the open door policy at the end of 1960s and beginning of the 1970s had already brought vital foreign investments to the country. As a result, Indonesia reverted to a public sector-dominated economic strategy emphasizing import substitution and public financing (Hofman et al., 2004). State-owned banks provided subsidized credits to favoured clients, the state was the owner of strategic capital-intensive industries, and barriers to imports were erected (Feridhanusetyawan, 2000). State-owned factories operated especially in such areas as oil refining, fertilizers, cement and basic metals. Exports were mainly of oil and gas, mining and quarrying sector products – e.g. in 1980, 70 per cent of Indonesian exports were products of this sector (Ishida, 2003). However, once the oil boom ended at the beginning of the 1980s, the import-substituting pattern of industrialization, financed by oil



revenues, could not be sustained, and the government shifted towards an export-promoting strategy. Indonesia moved from government-led growth to greater private sector participation. A series of deregulation measures were introduced to improve the investment climate. Trade reforms were introduced, including exemption of export-oriented firms from all import duties and regulations on imported inputs. Investment controls, including investment licensing, were relaxed. Also, financial sector reforms were started in the early 1980s and major reforms were carried out at the end of the 1980s (Hofman et al., 2004). Reforms eased restrictions on the opening of new private banks, allowing e.g. foreign banks to open offices. Freedom for banks to mobilize deposits in support of new lending was increased.

As a result of the improvement in the investment climate, foreign and domestic direct investments started rising rapidly in the late 1980s (Hofman et al., 2004), and exports of manufactures started to increase at a remarkable rate (Figure 8). In 1980, the share of manufacturing exports in merchandise exports was only 2.3 per cent, but by 1996 the share had expanded to 51.4 per cent. Oil-based exports remained important, however, with the share of fuels in merchandise exports at the beginning of 2000s still amounting to approximately one-fourth. Food exports are also of importance. Within the category of manufacturing exports, the importance of resource-based manufactures diminished in the 1980s and, by the early 1990s, they had been overtaken by low- and medium-technology manufactures (Aswicahyono and Feridhanusetyawan, 2004). Since the mid-1990s, the share of low-tech product exports has declined and that of medium and high-tech products increased (see Aswicahyono and Feridhanusetyawan, 2004). This trend can also be seen in the structure of manufacturing production, as the share of machinery and transport equipment production in manufacturing value-added increased from 13 per cent in 1980 to 22 per cent in 2002 (World Bank, 2006). Over the same period, the share of the food sector (food, beverages and tobacco) decreased from 32 per cent to 23 per cent (65 per cent in 1970), while the share of textiles and clothing, which is also a low-tech industry, has been relatively steady – between 15 per cent and 21 per cent during the 1990s.

Rapid and persistent economic growth, which continued until the late 1990s, had a significant impact on poverty. In the late 1960s a large part of the population was still living in poverty, but in 1996 the share was only 11 per cent (Hofman et al. 2004; according to World Bank figures, the share was 15.7 per cent). From 1967 to 2002, the income of the bottom 20 per cent of income earners grew at the same pace as the overall average per capita income (Timmer, 2004), and growth was thus on average pro-poor during that period, even if there was considerable variance between sub-periods. Changes in inequality were relatively minor during the 1964-1996 period, and the Gini coefficient fluctuated between 0.32 and 0.38 (see Feridhanusetyawan, 2000).<sup>4</sup> Investment of the oil rents in the financing of

the green revolution caused a decline of inequality, especially in rural areas, as employment and production opportunities increased in the rural sector (Cornia and Kiiski, 2001). Oil revenues allowed large investments in infrastructure, education and health, all of which also benefited the poor. The period from the mid-1970s to the late-1980s can in particular be considered a successful example of fast and equitable growth accompanied by rapid poverty reduction. However, from the late 1980s until the economic crisis of the late 1990s, during the period of rapid globalization, the development of the urban-based manufacturing, financial and other sectors was emphasized, and there was a slowdown in agricultural growth, which caused a widening of the rural-urban gap and an increase of overall inequality (Cornia and Kiiski, 2001). Rural development programs were also retrenched during that period. As the overall growth was rapid, however, the poverty rate declined during that period as well.

Rapid economic growth has significantly decreased poverty in Indonesia. Growth has been built on strong macroeconomic policies, support for agriculture, investment in physical and human capital, and increasingly liberal policies in the financial sector, trade, and foreign investment (Hofman et al., 2004). Rapid growth has tended to be based on labour-intensive production; thus, growth has in general been pro-poor. As in China, Taiwan or South Korea, development of and increased productivity in the agricultural sector have contributed significantly to the reduction in poverty. The oil boom of the 1970s caused a significant increase in export income and made possible investments in infrastructure and public goods that also benefited the poor. Following the oil boom, an increase of manufacturing exports has been the driving force of growth. Private sector manufacturing has been highly labour-intensive and sectors like textiles and clothing, wood processing, and the food industry have created employment opportunities for the poor.

## **5.6 Mexico**

Compared to South Korea, Taiwan or China, Mexico's economic development has been far less noteworthy. Especially during the 1980s and 1990s, the country experienced several economic crises. From the 1940s until the mid-1980s, Mexico's economic policy was based on import-substituting industrialization (e.g. Esquivel and Rodríguez-López, 2003). The strategy included high protective tariffs and other import barriers, especially to consumer goods. Industrial expansion was promoted through public investment in energy and transportation infrastructure. During those years, the Mexican economy industrialized and the economy performed well. In the 1960s, for example, GDP grew by 6.8 per cent per annum and industry also grew rapidly (7.9 per cent per year, 1965-1969). By 1970, Mexico had diversified its export base – the share of manufactures in merchandise exports was already 32 per cent, while eight years earlier it had been less than half of that – and

it was also self-sufficient in many consumer goods. Rapid economic growth continued in the 1970s, but growth was undermined by fiscal mismanagement and deterioration of the investment climate. Foreign borrowing increased, and the public sector deficit rose rapidly. Also, inflation started to rise. The poor investment climate led to massive capital flight. In general, the macroeconomic policies of the 1970s left the economy vulnerable to external shocks and, at the beginning of the 1980s, rising inflation, increasing debt, falling oil prices and higher world interest rates caused an economic crisis. The crisis forced the country to start economic reforms, and in the mid-1980s economic policy was re-oriented toward trade liberalization, export promotion and privatization. Trade barriers were reduced, Mexico joined the General Agreement on Tariffs and Trade (GATT), and Mexico's US debt was re-scheduled. The economy stagnated, however, throughout the 1980s and the growth of GDP was negative as late as 1986. By the end of the 1980s, the inflation rate fell significantly and growth resumed. Trade liberalization further progressed as Mexico joined the North American Free Trade Agreement (NAFTA) in 1994. A new economic crisis occurred, however, in 1994-1995, and in 1995 GDP growth was significantly negative. With international support, growth recovered by the end of the 1990s before declining again at the beginning of the next decade, when industry in particular stagnated. During the past few years, the country's economic health has improved and, compared to the period of the mid-1990s economic crisis, it is more resilient to external shocks. Tighter monetary and fiscal policies have dampened inflation: in 2002 consumer price inflation was 5 per cent, compared to 69 per cent in the 1980s.

The services sector is the largest contributor to Mexican GDP, accounting for 70 per cent in 2005 (Figure 9). The importance of the sector has somewhat increased during recent decades, but it accounted for 59 per cent of GDP already in the mid-1960s (World Bank, 2006). The contribution of agriculture to GDP has been minor. In 1965, its share was 14 per cent and the share has declined further since then – in 2005 it was only 4 per cent. The agricultural sector is, however, still an important employer, absorbing 16 per cent of total employment in 2003, and in some regions significantly more than that. The share of manufacturing has been relatively constant over the years, accounting for 18 per cent of GDP in 2005. The importance of manufacturing exports has, however, significantly increased. In the late 1970s and early 1980s, Mexico relied heavily on oil for foreign-exchange earnings (in 1982 the share of fuels in merchandise exports was 77.2 per cent), but since the mid-1980s, when trade liberalization started, the share of manufacturing exports began to increase, and in 2004 they accounted for approximately 80 per cent of total merchandise exports.

The most important manufacturing sub-sectors in terms of output are currently metal products, machinery and related equipment; food, beverages and tobacco; and chemicals, petroleum products, rubber and plastics (see e.g.

Economist Intelligence Unit, 2004). The first of these is also the most important manufacturing export sector. During the last 15 years, the importance of some skill-intensive exports (including road vehicles, telecommunication equipment, and electrical machinery) has been increasing, as has the share of some light industries (Figure 10). Among individual light industries, the clothing and accessories sector is the most important, accounting for more than one-fourth of total light industry export income in 2003. The share of food and agricultural raw material exports in total merchandise exports has been steadily declining, from more than 40 per cent of total merchandise exports in the 1960s to 12 per cent in 1980 and 5 per cent in 2004 (World Bank, 2006). A remarkable part of Mexico's production of manufactures for export is currently occurring in *maquiladoras* (in-bond assembly for re-export plants), which generally have a large content of imported inputs.

Poverty and inequality are still significant problems in Mexico. In 2002, one-fifth of the population was living in poverty (measured using a food-based poverty line, close to the international \$2 per day poverty line) (World Bank, 2004c). Over the past decade, the pattern of overall poverty has closely followed the macroeconomic cycle and the changes in the labour market (World Bank, 2004c). During the 1994-1995 crisis, poverty increased significantly, and it later declined with economic growth. The period 2000-2002 was exceptional, however, and poverty fell despite economic stagnation.

Inequality is high in Mexico – the Gini index for the year 2000 was 54.6, while for India it was 32.5 (World Bank, 2004a). Wage inequality increased between the mid-1980s and the mid-1990s (see e.g. Cortez, 2001). In manufacturing, according to Esquivel and Rodríguez-López (2003), wage income inequality between skilled and unskilled workers increased substantially between 1988 and 1996, after which it did not change much until 2000. Between 2000 and 2002, overall income inequality declined (World Bank, 2004c). In addition to inequality between the skilled and unskilled labour force, there are large differences across regions, and poverty is highest in the southern parts of the country (e.g. World Bank, 2004c).

There are several possible reasons that can explain why inequality increased even if, according to standard factor-proportions trade theory, trade liberalization could have been expected to reduce inequality in Mexico. According to Esquivel and Rodríguez-López (2003), technological change was responsible for the increase in manufacturing wage inequality in the late 1980s and 1990s. In the absence of technological change, trade liberalization would have led to a reduction in the wage gap, particularly in the pre-NAFTA period. Moreover, the structure of effective protection before liberalization may have favoured unskilled labour-intensive industries (e.g. Ros and Bouillon, 2002). Furthermore, even if Mexico has an abundance of unskilled labour compared to the United States (Mexico's main trading partner), it does not necessarily have it vis-à-vis the rest of the world (see e.g. Ros and Bouillon, 2002).

Slow economic growth and high inequality have inhibited progress in

poverty reduction (World Bank, 2004c). Manufacturing, which could be an engine of growth, has been growing slowly in recent years. Exports have been expanding, but a significant share of exports is produced in relatively skill-demanding industries, which has decreased the possibilities of poor people to participate. Nevertheless, during recent years, Mexico has made major progress in some poverty dimensions, e.g. in health and education (World Bank, 2004c). The progress in raising the monetary incomes of the poor has, however, been slow, even if Mexico has slightly lower poverty rates than the Latin American average.

## 5.7 Brazil

Similarly to many other Latin American countries, economic performance in Brazil has been volatile. The contribution of the industrial sector (including manufacturing, construction, mining and utilities) has, however, remained relatively constant over the past three decades (Figure 11). In 2004, industry comprised 34 per cent, agriculture 9 per cent and services 57 per cent of GDP.

Manufacturing, the single most important sub-sector of industry, accounts for nearly two-thirds of industrial GDP. Within manufacturing, the most important sub-sectors are food processing, basic metallurgy, machinery and equipment, and chemical products. The production of motor vehicles, aircraft, certain electronic products and machinery and equipment are world class. Some of these industries are recipients of generous public incentives (World Trade Organization, 2004).

The contribution of the agricultural sector to GDP has been less than 10 per cent since the early seventies, but has increased by approximately 2 percentage points between 2001 and 2003, which reflects increased production for some crops but also higher productivity (World Trade Organization, 2004). Despite a relatively small contribution to GDP, agriculture is still an extremely important sector for Brazil, as it is a major source of export revenues and an important employer (Economist Intelligence Unit, 2005c).

The share of services increased between the mid-1980s and late 1990s, but declined somewhat after that. However, the sector still accounts for about 60 per cent of GDP, and it is the most important employer, absorbing approximately two-thirds of the labour force. The Brazilian government has increasingly liberalized the services sector, particularly in telecommunications, financial services, and port and airport services. Public banks are still important, but private participation, as well as foreign investment, has increased over the years. Public administration is the most important sub-sector, followed by real estate, finance, commerce and communications. (World Trade Organization, 2004).

Exports have been a key factor in stimulating production in Brazil (UN ECLAC, 2005a). The share of high-tech manufactures in total commodity exports has increased (e.g. aircraft, from 1.8 per cent in 1990 to 3.5 per cent

in 2004), as has the share of manufactures of intermediate technology (e.g. passenger vehicles, from 5.0 per cent in 1990 to 8.3 per cent in 2004). The share of low-technology manufactures, on the other hand, has decreased as a result of increased exposure to competition from lower cost producers in Asia (e.g. textiles, clothing and footwear, which in total accounted for 7.0 per cent of total exports in 1990 and only 3.7 per cent in 2004). The share of primary products, including agricultural and mining, plus processed goods of agricultural origin, beverages and tobacco, and chemicals and fuels, remains high, oscillating around 50 per cent of total exports (Figure 12). Increased demand, especially from China, and strong prices in world markets have positively affected both mining and agricultural exports in recent years.

Brazil is a net exporter of agricultural products (primary and processed) and mining products (including ores), whereas it is a net importer of other industrial products and services (World Trade Organization, 2004). Interestingly, whereas transnational companies account for approximately half of Brazil's merchandise exports, only a small portion is either medium or high-tech – mostly automobiles and telecommunications equipment (UN ECLAC, 2005b).

As a whole, industry accounts for approximately 50 per cent of total commodity exports, machinery and transport equipment being the most important sub-group. Within the latter, the automotive industry has been especially dynamic. This has been partly a result of an aggressive export development strategy, which included targeted support programs to the automotive, shipbuilding and aircraft industries (World Trade Organization, 2004).

The trade liberalization measures<sup>5</sup> implemented by the Brazilian government between 1988 and 1994 led to a substantial reduction of the average rate of protection (Ferreira and Facchini, 2005). Whereas Brazil has become increasingly more open to trade, as measured by the weight of external trade flows in GDP, it is still – together with Argentina – below the regional average, as it was in the beginning of the 1980s<sup>6</sup> (UN ECLAC, 2004a). In addition, contrary to most countries in the region, Brazil continues to impose high effective tariffs on several manufactured goods, with those imposed on motor vehicles, some food products (poultry, dairy, and vegetable oils), beverages, apparel, and textiles being above average. Imports of primary agricultural and mining products, of which Brazil is a very efficient producer, face low effective tariffs (World Trade Organization, 2004).

The manufacturing sectors that are relatively shielded from international competition, such as the motor vehicle industry, are also highly concentrated and represented by strong lobbies. Less concentrated sectors have not been able to benefit from tariff protection, nor tax breaks or subsidies, to the same extent. In the auto-parts sector, for instance, as tariffs rapidly decreased, most Brazilian firms were closed or sold to foreign companies. In the context of the MERCOSUR preferential trade arrangements, the motor vehicle

industry and other well established, politically organized industries (e.g. refrigerators, bicycles, audio and video equipment) were successful in maintaining tariffs well above average (Ferreira and Facchini, 2005).

The industrial specialization pattern followed by Brazil and other Southern Cone countries, based on capital-intensive industries, contributed to exacerbate the negative effects of sluggish and volatile GDP growth on employment and informality. While natural resource-based industries generate little new employment, labour-intensive sectors such as footwear, clothing and furniture have been displaced by foreign competition. For instance, in Brazil, labour-intensive traditional industries' share in total manufacturing output fell from 36 per cent in 1970 to 26 per cent in 1996 (Cimoli and Katz, 2002).<sup>7</sup> This has led to increases in unemployment rates and informal employment. Unemployment rose on average from 4.3 per cent in 1990 to 12.3 per cent in 2003. Informal employment is estimated to have risen from 40.6 per cent in 1990 to 46 per cent in 2003. Average wages of formal employees in the industrial sector fell by 1 per cent annually between 1990 and 1999 and by 4.3 per cent between 2000 and 2003. Overall, increases in unemployment and the expansion of the informal sector have worsened income distribution, as wages are a significant source of household income (almost two-thirds of household income on average in Brazil), and income levels in the informal sector are substantially below those prevailing in the formal one<sup>8</sup> (UN ECLAC, 2004a).

Finally, poverty rates in Latin America in general remain above 1980 levels despite improvements since 1990, and even with those improvements the absolute number of people living in poverty has increased. In Brazil, poverty reduction was significant especially in the 1990/1999 period, with poverty rates, measured using national poverty lines, falling by 10 percentage points. Since then, however, the poverty rate remained largely unchanged, at least through the early 2000s (more recent data being unavailable) (UN ECLAC, 2004b).

## 6. Discussion

For the countries analyzed here, industrial development has been an important basis for economic growth. Output expansion has been associated with export promotion, increased trade opening, economic liberalization and an improved business climate in most of the countries. However, import protection and selective government intervention have been employed as well.

As poverty in many developing countries is a predominantly rural problem, increased agricultural productivity is often a key to poverty reduction at the outset of economic development. This has been the case e.g. in China and Indonesia. Countries that have started their economic reforms – as China did – with agricultural reform or otherwise emphasized rural development have – at the beginning – typically experienced declining inequality due to a decrease of rural poverty. In Korea and Taiwan, due to land reforms of earlier decades,

income distribution was relatively even when rapid industrialization began. In Indonesia, oil rents were used in financing rural development.

After the early stages of economic development, growth in the industrial sector is, however, essential for sustained long-run growth and poverty reduction. In the countries studied, the growth of the manufacturing sector has created employment opportunities outside agriculture and, as manufacturing in many of these countries has been – at least at the beginning – intensive in unskilled labour, the poor have benefited. In some countries, like Korea, growth during certain periods has clearly been pro-poor, with the poor benefiting proportionally more than the non-poor. There are, however, significant differences between countries as far as the impact of industrialization on the poor is concerned. In Mexico, for example, the growth of the manufacturing sector in the late 1980s and early 1990s benefited skilled workers to a greater extent than unskilled ones. Often, economic growth has been accompanied by increasing inequality over some periods, even if poverty in absolute terms has declined – as shown by the recent experience in China.

The extent to which industrial development effectively decreases poverty and inequality depends on the pattern of industrialization. Industries which employ a high proportion of unskilled workers and/or use domestic inputs and raw materials produced with labour-intensive technologies can have positive effects on incomes of the poor. In Taiwan, for example, during the early phases of industrial development, the demand for unskilled workers increased relative to that for skilled workers, which reduced inequality and poverty. At later stages, demand for skilled workers significantly increased, along with a change in Taiwan's export and manufacturing structure. By that time, Taiwan had made major investments in human capital, so the effect on income distribution of changing skill demands was relatively muted. The Republic of Korea has followed a similar path. In Brazil and India, on the other hand, manufacturing has tended to be relatively capital intensive, creating relatively modest employment opportunities for the poor. Also in India, the service sector has been a major contributor to recent growth, but the dynamic service industries like software and back-office processing have provided few jobs for the unskilled directly. Still, with strong growth performance for the past 15-20 years, the poverty rate in India has significantly declined.

The geographical location of industry can also affect the extent to which industrialization is pro-poor. In China, industrialization has significantly increased per capita income, but as industrial development has been concentrated in the eastern coastal regions of the country, inequality between regions has increased and industrial development has contributed relatively little to poverty reduction in much of the interior. Still, inter-regional labour mobility is high and the remittances sent home by migrant workers can help mitigate effects of geographic concentration of industry on regional inequality. Geographical reasons – or economic distances – also partly explain why



some parts of Brazil, India, Indonesia or Mexico are much less developed than other parts of those countries.

Initial conditions significantly impact on whether major industrial development occurs, and whether industrialization accelerates economic growth and reduces poverty. Fundamental conditions for sustainable economic growth and industrial development include political, social and macroeconomic stability, well-functioning institutions and rule of law. The role of government is essential in creating these. If these framework conditions are lacking, investments – whether foreign or domestic – are likely to be few and growth limited and fluctuating. Economic instability is likely to impact especially the poor, as has happened e.g. in Mexico in the mid-1990s and in Indonesia in the late 1990s. In Korea and Taiwan, on the other hand, economic development has been much more stable.

Government has an important role in infrastructure and human resources development as well as in encouraging and supporting innovation and technological upgrading. For poor people, education is often an avenue to better employment and income opportunities. The existence of universal education, as in China or Korea, gives the poor better possibilities to participate in the development process.

At the outset of their development, countries may rely on primary resources or a cheap labour force, and all the countries analyzed here have begun their development process by relying on one or both of these factors. In the long run, however, investment in human capital and technological upgrading are essential if a country wishes to remain internationally competitive and sustain economic prosperity. Korea and Taiwan are good examples of countries where human resources development has had a significant impact on industrial development and broad economic growth. Due to rapid technical change and globalization, competition is becoming more and more intense, and the capacity to employ state-of-the-art technologies is increasingly crucial to succeed. That capacity is above all a function of the educational attainment and skills level of the workforce.

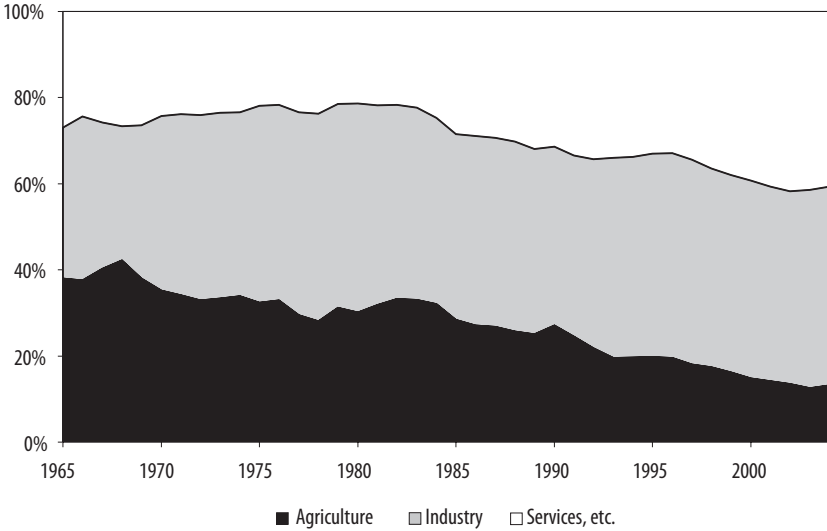
Countries may choose to build their industrial capabilities through domestic research and development as Taiwan and Korea did to a considerable extent. A more common approach has been to plug into global value chains and become a supplier of labour-intensive products (UNIDO, 2002), gradually upgrading technological capabilities through foreign investments. This is the strategy used e.g. by Mexico and to a somewhat lesser extent by Brazil. The two approaches are not mutually exclusive, and many countries rely on a mix of technology imports and development of domestic technologies and technological capabilities, with the balance tending to shift towards the latter as economic development proceeds. Governments have a significant role in capability-building as well as in attracting FDI.

All countries analyzed here have, at some point in time, carried out selective industrial policies, by which they have aimed to change the sectoral

structure of production towards sectors believed to offer greater prospects for faster productivity growth. Taiwan and especially Korea are examples of export-manufacturing-oriented countries which have successfully used government intervention and import protection in the early phases of development of their manufacturing sectors.

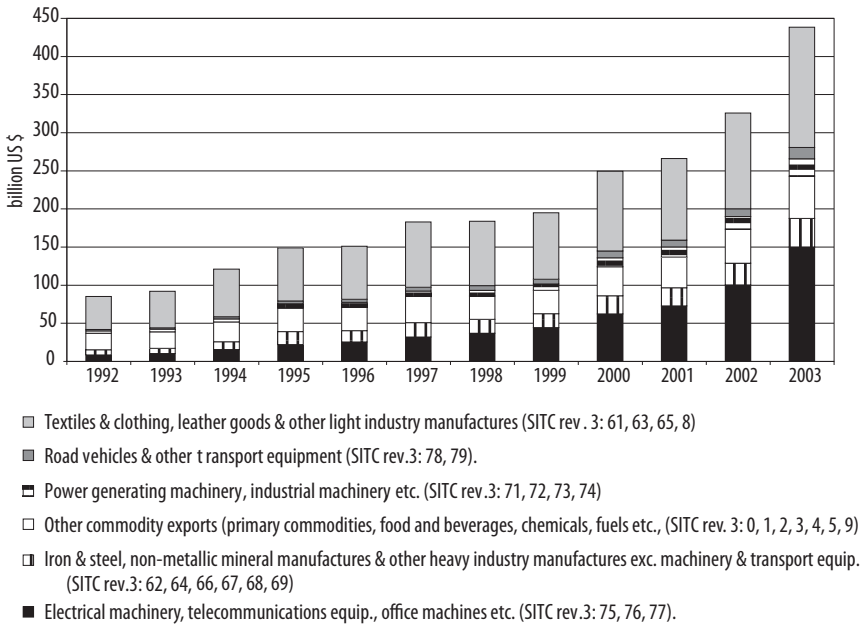
Today, the degree of policy freedom left to developing countries is narrower than it was some decades ago, even if some well-planned government intervention may seem justified based on the success stories of the earlier decades. However, governments still have a primary role in promoting sustainable economic growth and especially poverty-reducing growth. In addition to ensuring stability, well-functioning institutions and appropriate legislation (e.g. labour laws), other essential government actions are related to skills formation, technology support, innovation financing, infrastructure development, and provision of a variety of public goods. All these have an impact on the growth and trade performance of a country. Rapid economic growth as such tends to decrease poverty. Rapid growth may increase income inequality, but this is not inevitable. Whether or not it does, depends not only on the skill bias of technical change in an economy but on human capital formation measures and on the nature of taxation and expenditure policies. In addition to promotion of job creating industries and SMEs and supporting the creation of domestic linkages, inequality can be decreased e.g. by subsidized access to education, subsidized housing, progressive taxation or economic asset redistribution like land reforms.

Figure 1. Sectoral shares of GDP in China, 1965-2004



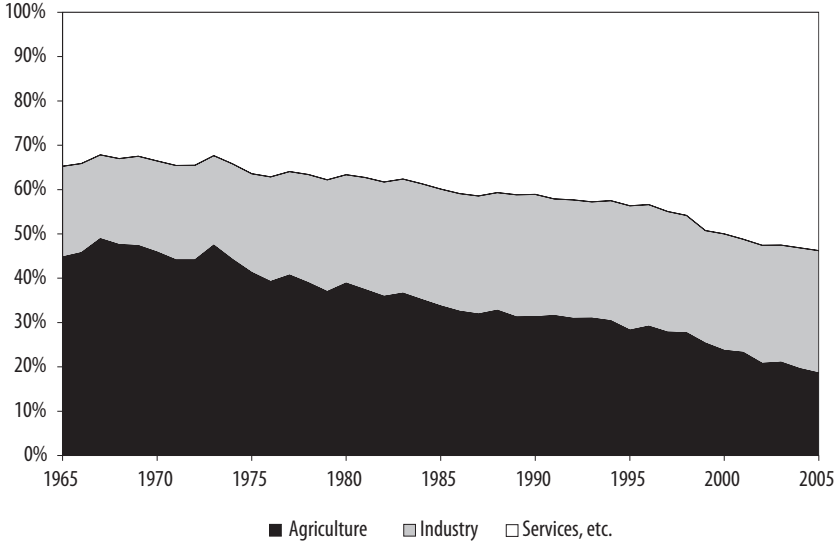
Source: World Bank (2006).

Figure 2. China: export of commodities, 1992-2003



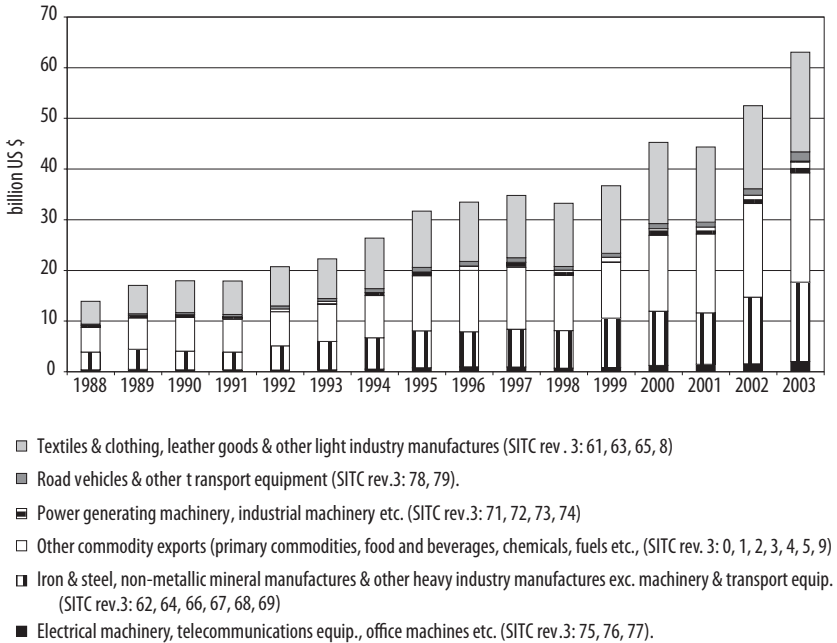
Source: UN Comtrade database. Obs.: re-exports included.

Figure 3. Sectoral shares of GDP in India, 1965-2005



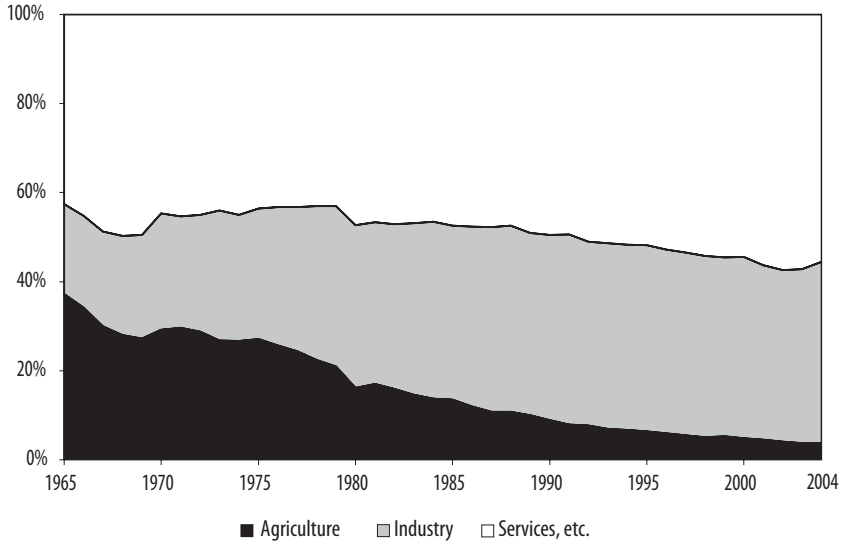
Source: World Bank (2006).

Figure 4. India: Export of commodities, 1988-2003



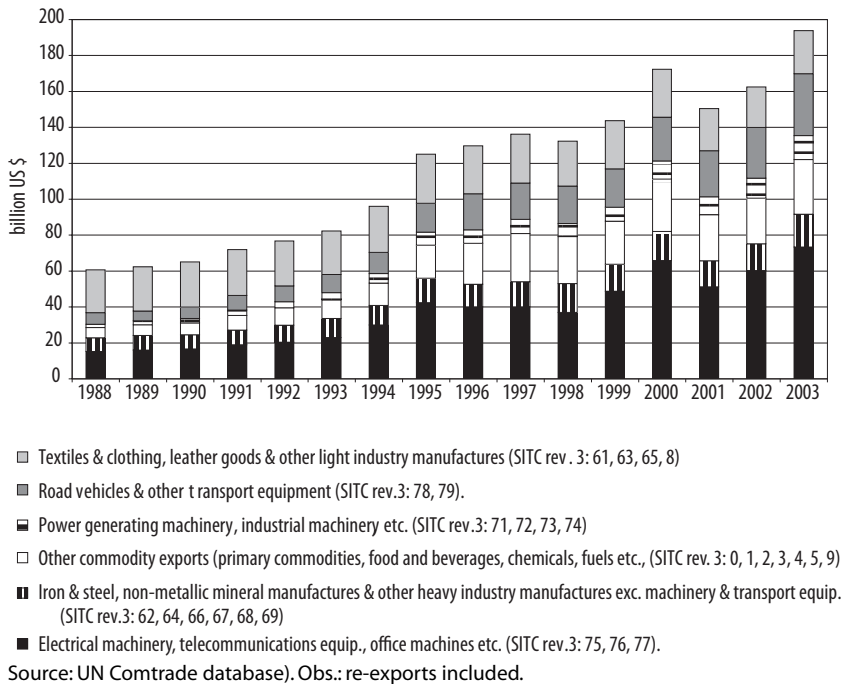
Source: UN Comtrade database. Obs.: re-exports included.

Figure 5. Sectoral shares of GDP in South Korea, 1965-2004



Source: World Bank (2006).

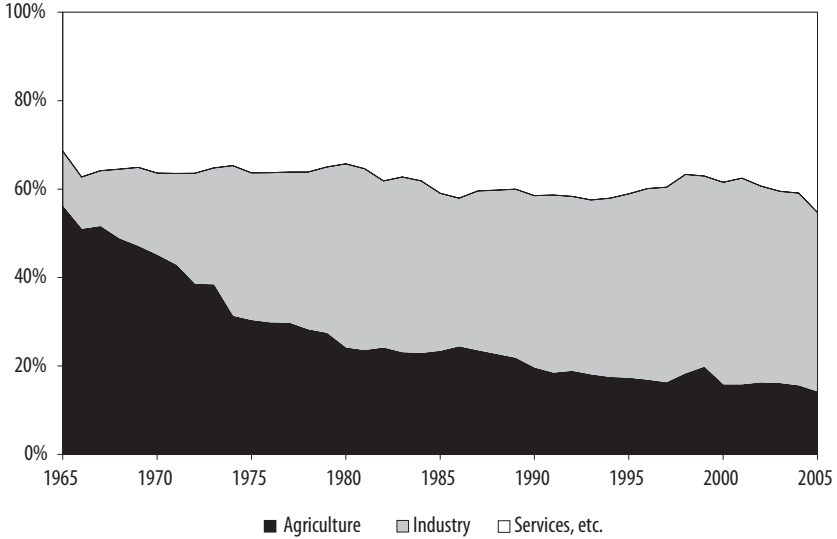
Figure 6. South Korea: Export of commodities, 1988-2003



- Textiles & clothing, leather goods & other light industry manufactures (SITC rev. 3: 61, 63, 65, 8)
- Road vehicles & other transport equipment (SITC rev.3: 78, 79).
- Power generating machinery, industrial machinery etc. (SITC rev.3: 71, 72, 73, 74)
- Other commodity exports (primary commodities, food and beverages, chemicals, fuels etc., (SITC rev.3: 0, 1, 2, 3, 4, 5, 9)
- Iron & steel, non-metallic mineral manufactures & other heavy industry manufactures exc. machinery & transport equip. (SITC rev.3: 62, 64, 66, 67, 68, 69)
- Electrical machinery, telecommunications equip., office machines etc. (SITC rev.3: 75, 76, 77).

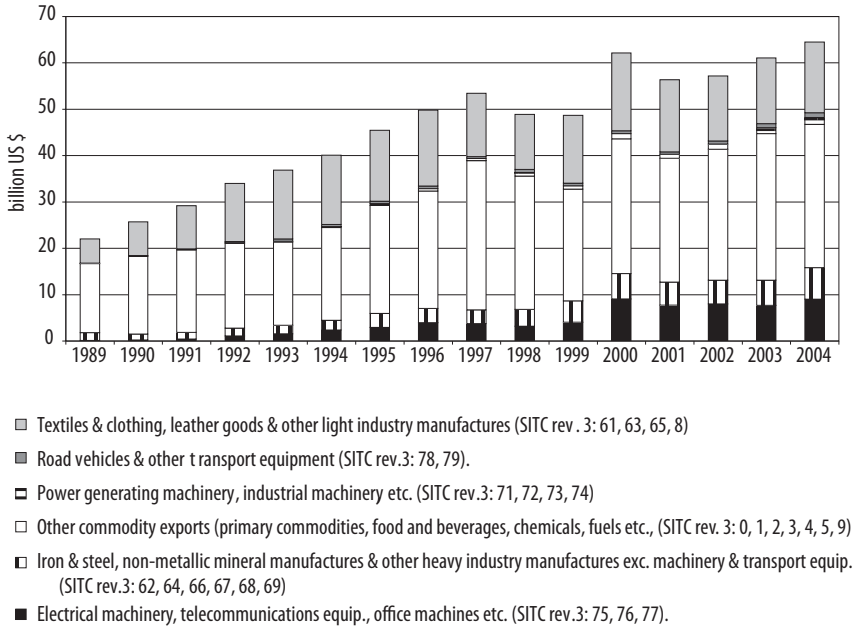
Source: UN Comtrade database). Obs.: re-exports included.

Figure 7. Sectoral shares of GDP in Indonesia, 1965-2005



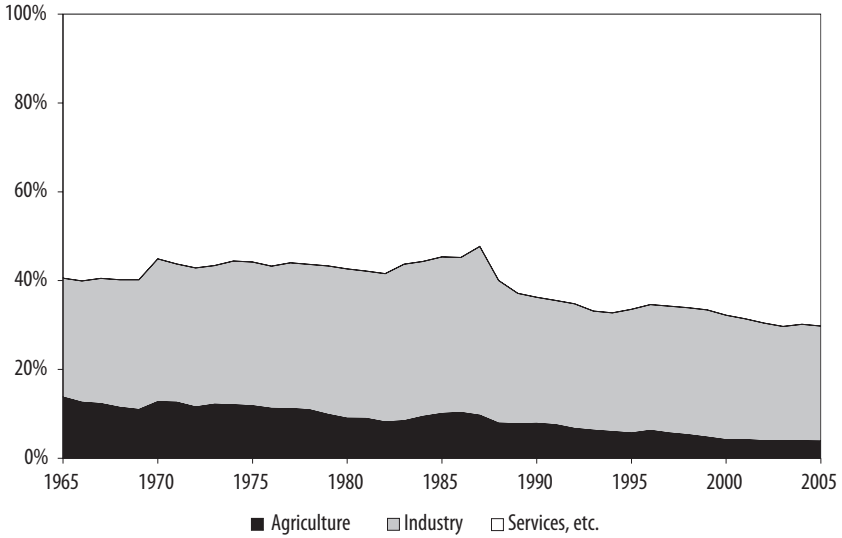
Source: World Bank (2006).

Figure 8. Indonesia: export of commodities, 1989-2004



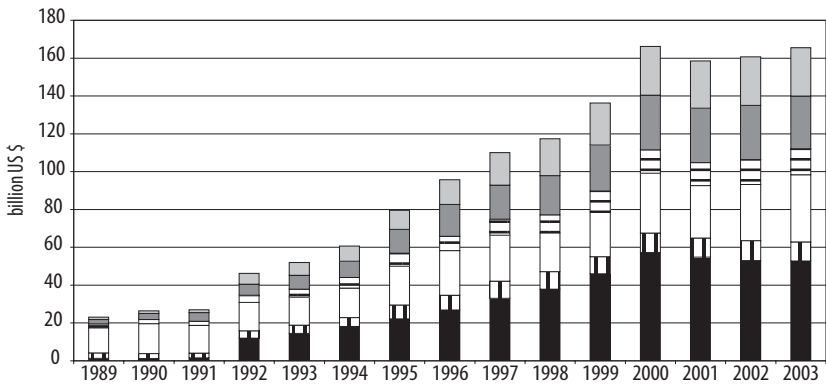
Source: UN Comtrade database. Obs.: re-exports included.

Figure 9. Sectoral shares of GDP in Mexico, 1965-2005



Source: World Bank (2006).

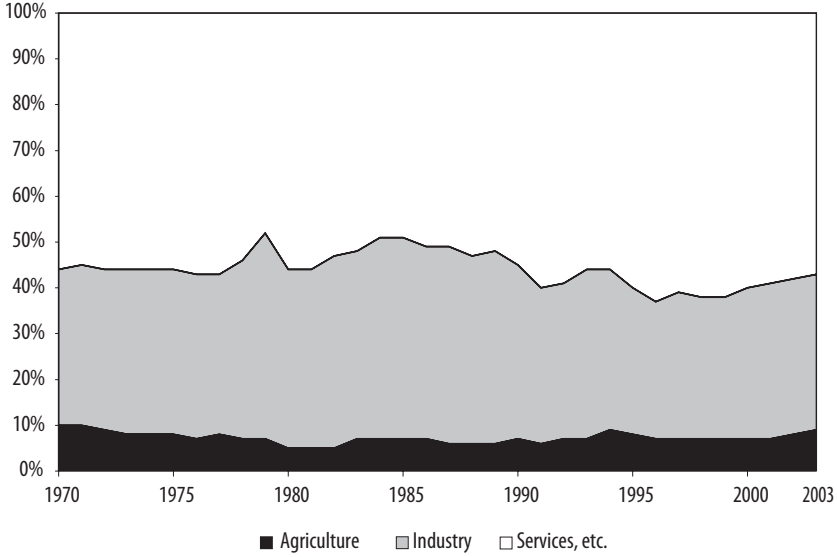
Figure 10. Mexico: export of commodities, 1989-2003



- Textiles & clothing, leather goods & other light industry manufactures (SITC rev. 3: 61, 63, 65, 8)
- Road vehicles & other transport equipment (SITC rev.3: 78, 79).
- Power generating machinery, industrial machinery etc. (SITC rev.3: 71, 72, 73, 74)
- Other commodity exports (primary commodities, food and beverages, chemicals, fuels etc., (SITC rev. 3: 0, 1, 2, 3, 4, 5, 9)
- Iron & steel, non-metallic mineral manufactures & other heavy industry manufactures exc. machinery & transport equip. (SITC rev.3: 62, 64, 66, 67, 68, 69)
- Electrical machinery, telecommunications equip., office machines etc. (SITC rev.3: 75, 76, 77).

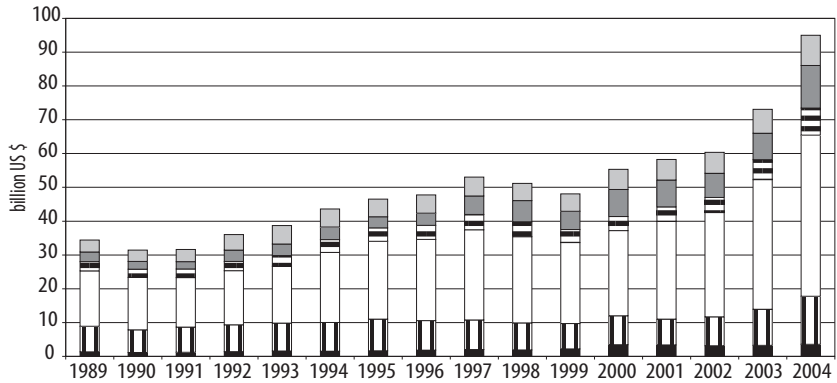
Source: UN Comtrade database. Obs.: re-exports included

Figure 11. Sectoral shares of GDP in Brazil, 1970-2003



Source: UN National accounts database.

Figure 12. Brazil: export of commodities, 1989-2004



- Textiles & clothing, leather goods & other light industry manufactures (SITC rev. 3: 61, 63, 65, 8)
- Road vehicles & other transport equipment (SITC rev.3: 78, 79)
- Power generating machinery, industrial machinery etc. (SITC rev.3: 71, 72, 73, 74)
- Other commodity exports (primary commodities, food and beverages, chemicals, fuels etc., (SITC rev. 3: 0, 1, 2, 3, 4, 5, 9)
- Iron & steel, non-metallic mineral manufactures & other heavy industry manufactures exc. machinery & transport equip. (SITC rev.3: 62, 64, 66, 67, 68, 69)
- Electrical machinery, telecommunications equip., office machines etc. (SITC rev.3: 75, 76, 77).

Source: UN Comtrade database. Obs.: re-exports included.



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### Notes

- 1 It is important to notice, however, that technological change is not only relevant to manufacturing, but similarly has significant impacts in other sectors of the economy. A good example of this is increased productivity in agriculture, which has been essential for accelerated economic growth in many developing countries.
- 2 According to some analysts, the distribution of income among all people in the world has become more equal over the last two decades.
- 3 It has also had negative impacts on income distribution. During the 1970s, for instance, demand for skilled workers in heavy and chemical industries pushed up domestic wages and increased wage differentials between skilled and unskilled workers.
- 4 The validity of official inequality measures has been questioned, however.
- 5 These included reduction in tariff levels, tariff dispersion and elimination of major non-tariff restrictions.
- 6 Mexico is on the other extreme, having increased its openness to trade five times between the early eighties and the first years of the current decade.
- 7 Job creation has shifted towards the private services sector, in both highly remunerated activities (financial services, telecommunications, etc.) and activities with low barriers to entry, such as informal commerce and personal services (UN ECLAC, 2004a).
- 8 In 2000, income levels in the informal sector were 72 per cent lower than those prevailing in the formal sector on average in the region, up from a 59 per cent differential in 1990.

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