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## *Chapter IV*

## ECONOMIC GROWTH AND CAPITAL ACCUMULATION

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Chapter IV

# ECONOMIC GROWTH AND CAPITAL ACCUMULATION

## A. Growth divergence: the recent record

Economists and economic historians have long recognized that income and technology gaps opened up by leading economies can provide growth opportunities to latecomers. However, there is no natural tendency for poorer countries to grow faster than the richer ones. Indeed, the broad sweep of historical evidence suggests that falling behind has been the more typical experience of the latecomers than has catching up (Pritchett, 1995). During the first three decades after the Second World War, wide income gaps persisted among countries as growth accelerated across almost all regions, in both the North and South. Those gaps widened further in the subsequent period, as growth momentum stalled in many poorer countries, particularly after the debt crisis of the 1980s (fig. 4.1) (*TDR 1997*; and Milanovic, 2002). According to the *Economic Report of the President*:

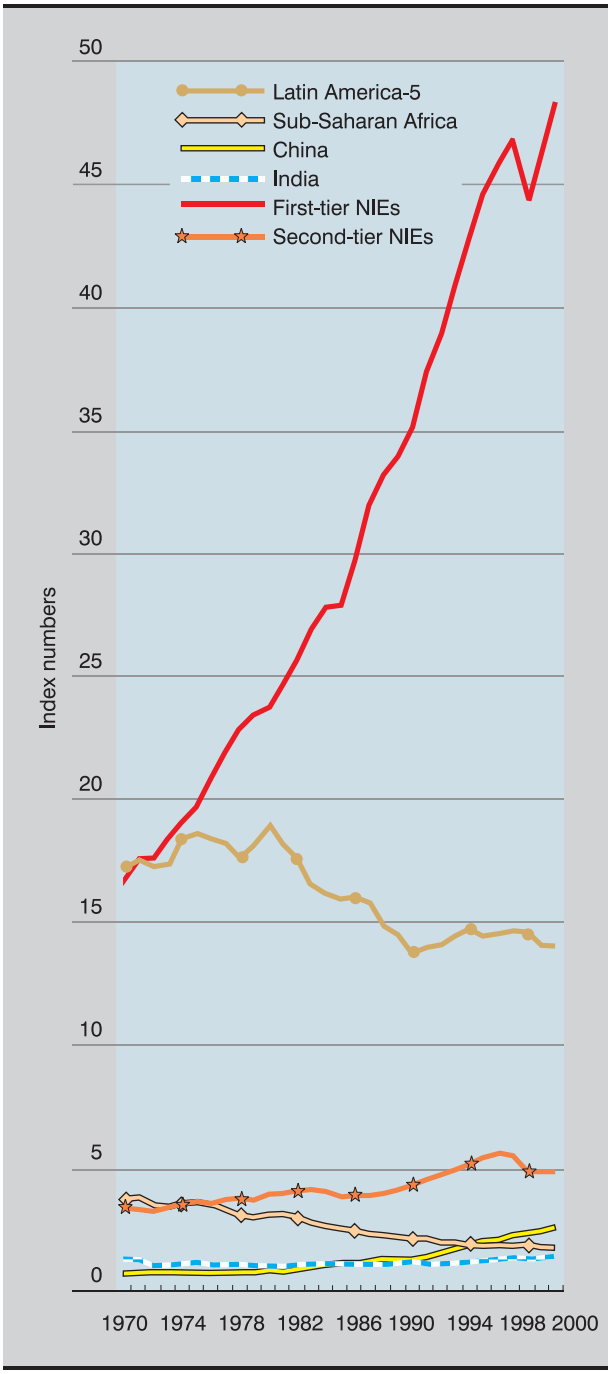
> In 28 countries out of 134 for which consistent and complete data are available, annual average growth in GDP per capita ranged between 0 and 1 percent from 1980 to 2000. GDP per capita fell during that period for another 41 countries in the sample – in several cases by more than 30 percent over the period as a whole. (United States, 2003: 218–219)

Nevertheless, the record also includes some very strong and sustained growth episodes in a number of poorer countries. Since the early 1960s, the most notable success stories have been found in East Asia, in the first-tier and second-tier newly industrializing economies (NIEs).[1] Until the financial crisis of 1997, the countries in that region had enjoyed rapid and uninterrupted growth, and this even accelerated in some during the 1980s. This not only allowed them to overtake other developing countries, but also to narrow the income gap with the major industrial economies (fig. 4.1). In all cases, growth was accompanied by a rapid expansion of industrial activity and profound political and social transformation. Despite the speed of this transformation, growth in the region was remarkably stable (fig. 4.2A).[2] In particular, the first-tier NIEs combined a fast pace of growth

***Figure 4.1***

**GDP PER CAPITA IN SELECTED DEVELOPING COUNTRIES AND REGIONS COMPARED TO THE G-7, 1970–2000**

*(G-7 = 100)*



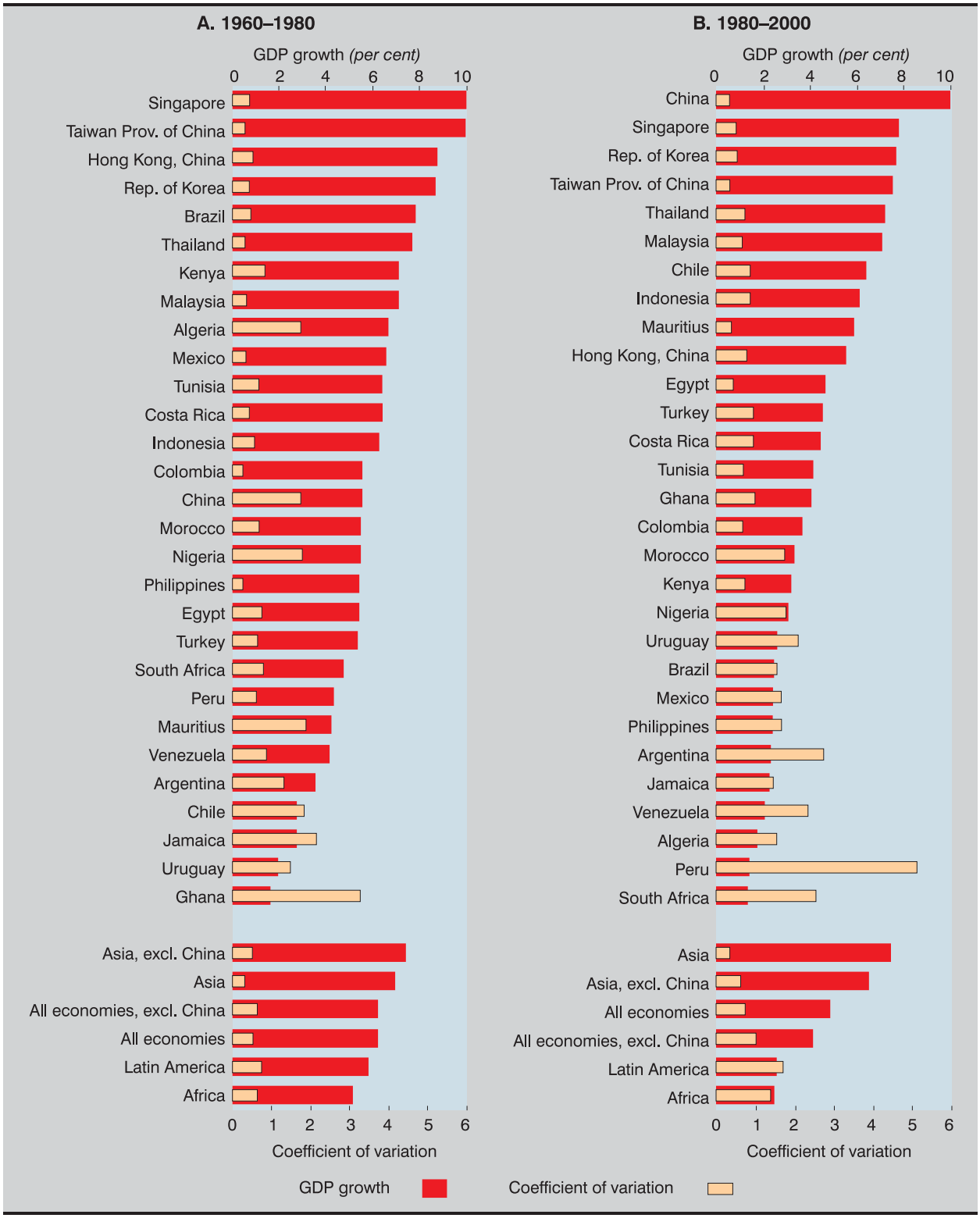

***Source:*** World Bank, *World Development Indicators, 2002.*
***Note:*** Latin America-5 comprises Argentina, Brazil, Chile, Colombia and Mexico; the first-tier NIEs comprise Hong Kong (China), Republic of Korea, Singapore and Taiwan Province of China; the second-tier NIEs comprise Indonesia, Malaysia, the Philippines and Thailand. Sub-Saharan Africa excludes South Africa.

with a high degree of stability during the period 1960–1990; indeed, they were able to reduce instability as growth accelerated. Growth slowed down somewhat and instability increased during the 1990s, reflecting the intense boom-bust cycles associated with unstable capital flows that afflicted countries throughout the region. However, most have managed a fairly rapid turnaround following the crisis, and long-term regional growth forecasts remain buoyant, although not all the social and structural problems resulting from the crisis have been solved (*TDR 2000*, chap. IV) and short-term risks persist (see Part One). China has, since the early 1980s, taken up the mantle as the newest East Asian industrializing economy, spurring growth momentum across the whole region.

Latin American growth performance contrasts starkly with that of East Asia. The two regions grew at much the same rate between 1960 and 1973, when they also had similar levels of per capita income. Real GDP grew at an average rate of 6.8 per cent per annum for the first- and second-tier NIEs taken together, compared with 5.9 per cent for the five largest countries in Latin America (Argentina, Brazil, Chile, Colombia and Mexico), and real per capita income in 1973 in the four first-tier NIEs was $3,735 compared to $4,574 in the same five Latin American countries (Maddison, 2001). Thereafter, average growth rates began to diverge sharply, with growth in East Asia at 6.3 per cent per annum between 1974 and 2000 compared to 2.8 per cent in Latin America. Moreover, the slowdown in growth in Latin America was accompanied by high and, in a number of countries, growing instability (fig. 4.2B). The intensity of these two trends in the 1980s resulted in a "lost development decade", followed by some improvements in the first half of the 1990s. However, growth stalled in the second half of the decade as capital flows were reversed, prompting some to call the period since 1997 a "lost half-decade" (Ocampo, 2002). Among the more successful countries in the region, Mexico saw growth accelerate above the regional average in the second half of the 1990s, thanks to its improved access to a rapidly growing United States market and increased FDI inflows as a result of the North American Free Trade Agreement (NAFTA). However, taking the period 1990–2002, Mexico's per capita average annual growth rate of 1.4 per cent was only slightly above the regional

***Figure 4.2***

**AVERAGE ANNUAL REAL GDP GROWTH AND VOLATILITY IN SELECTED DEVELOPING ECONOMIES AND REGIONS, 1960–2000**



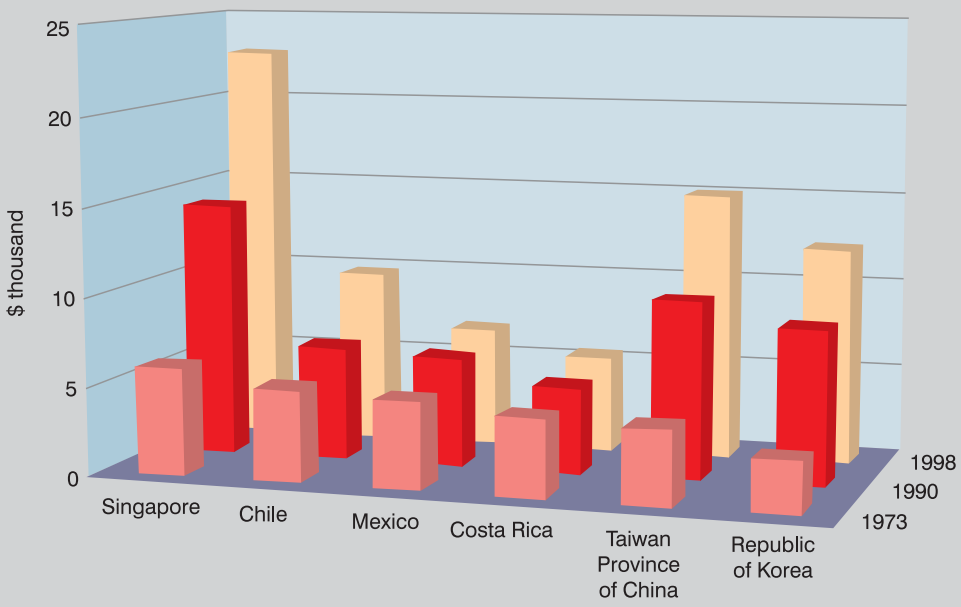

***Source:*** World Bank, *World Development Indicators, 2002.*

***Note:*** Calculations are based on GDP in constant 1995 dollars. Coefficients of variation for all developing economies and regions are weighted averages of the data for the countries listed.

***Figure 4.3***

**"TIGERS" AND "PUMAS": PER CAPITA INCOME IN SELECTED ECONOMIES IN EAST ASIA AND LATIN AMERICA, 1973–1998**

*(1990 dollars[a])*




***Source:*** Maddison, 2001.

***a*** GDP per capita converted from national currencies into dollars using 1990 multilateral purchasing power parities.

average and well below the rate it had achieved in the 1960s and 1970s, let alone the rate in East Asia. Only Chile, where average per capita growth after the mid-1980s was well above that of the 1960s and 1970s, enjoyed a more sustained period of catch-up growth accompanied by greater stability (fig. 4.2A and B). Still, none of these experiences matched those of the East Asian "tigers". As a result, income gaps between the most successful economies in the two regions widened (fig. 4.3). Overall, most countries in Latin America experienced slower and less stable growth in the period 1980–2000 than in the previous two decades.

In sub-Saharan Africa too, successful growth experiences were less frequent and weaker after the debt crisis, resulting in growing poverty levels and a further widening of the income gap with advanced countries (Berthelemy and Soderling, 2001, table 3; Akyüz and Gore, 2001; and UNCTAD, 2001).[3] Like Latin America, the lost decade of the 1980s was characterized by negative per capita growth, followed by a weak recovery in the 1990s, reflecting, in large part, persistently tight external constraints due to weak commodity prices, stagnant official development assistance, and, for most African economies, an absence of private capital inflows.

## B. The role of investment in the design of development strategies

There is general agreement that a rapid pace of capital accumulation, and shifts in the structure of economic activity towards industry and technological upgrading are among the basic forces behind any sustained acceleration of growth in successful cases of catching up. In all such cases, strong complementarities and mutually reinforcing linkages among capital accumulation, technological progress and structural change have constituted the basis for rapid and sustained productivity growth, rising living standards and successful integration into the international economy. In the interplay of linkages that make up a virtuous growth regime, capital accumulation holds a central place. Investment simultaneously generates income and expands productive capacity, and it also carries strong complementarities with other elements in the growth process, such as technological progress, skills acquisition and institutional deepening. Moreover, due to the sensitivity of the investment decision to the level and stability of economic activity, investment plays an important bridging role between the cyclical and longer-term features of economic development. But just as importantly, because investment performance is susceptible to policy influence, it offers a clearly identifiable objective on which to base the design of development strategies, as well as tangible criteria for judging the success of such strategies.

In the interplay of linkages that make up a virtuous growth regime, capital accumulation holds a central place.

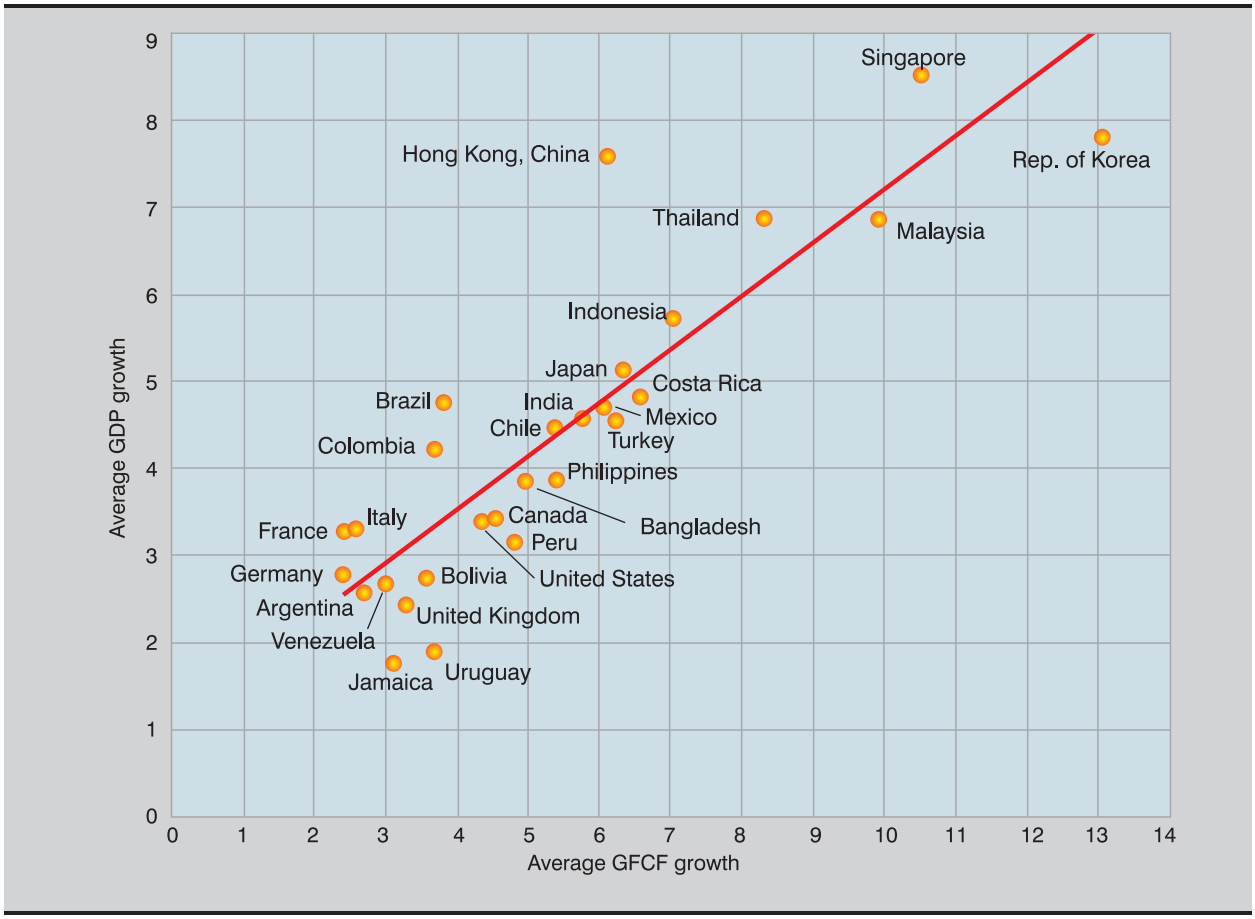
A given pace of capital accumulation can certainly generate different growth rates, depending on its nature and composition as well as the efficiency with which production capacity is utilized. This is one of the main reasons why econometric studies on the determinants of growth have failed to establish a one-to-one relation between the rate of investment and economic growth.[4] However, among the many variables fed into growth equations, investment still emerges as one of the few with a robust and independent impact on economic growth, particularly for rapidly growing middle-income economies (Levine and Renelt, 1992; Sala-i-Martin, 1997; IMF, 1997: 80–81; and Ros, 2000). An analysis carried out by the UNCTAD secretariat on a number of developed and developing countries for the period 1960–2000 also confirmed a strong positive relationship between growth rates of gross fixed capital formation (GFCF) and GDP (fig. 4.4). Indeed, it is generally agreed that growth cannot be sustained without an adequate level of investment, allowing for complementarities and linkages among different sectors and spheres of activity. Determining the target thresholds will naturally be influenced by country-specific factors, but a 20-per-cent share of investment in income has been identified as such a target for poorer economies and a 25-per-cent share for middle-income developing countries (UNCTAD, 2001 and ECLAC, 2000).

The close link between investment and productivity growth implies that capital accumulation could still be a key causal determinant of growth

***Figure 4.4***

**AVERAGE ANNUAL GROWTH OF GDP AND GROSS FIXED CAPITAL FORMATION IN SELECTED ECONOMIES, 1960–2000**

*(Per cent)*




***Source:*** UNCTAD secretariat calculations, based on World Bank, *World Development Indicators, 2002*; IMF, *International Financial Statistics, 2002*; and Thomson Financial Datastream.

even when it does not account for much of the observed cross-country differences in growth rates (Easterly and Levine, 2001: 191). Since much technological change is embodied in new equipment, its role in growth could still best be explored in the context of capital accumulation:

> ... even if technological innovation is the undisputed star in the scenario (which is by no means certain), substantial capital accumulation very likely would have been required to put the inventions into practice and to effect their widespread employment. If, moreover, saving and investment play a primary role of their own, it becomes all the more important to explore the nature of that role, recognizing that because of unavoidable interactions between the rates of innovation and investment, any attempt to separate the two may prove to be artificial, if not ultimately unworkable. (Baumol et al., 1991: 164)

Given the key role played by investment in the expansion of productive capacity and productivity growth, identification of the factors that govern investment decisions holds the key to the formulation of an effective development strategy.

This was fully recognized by the founding fathers of development economics:

> ... any theory of development must start with a consideration of the forces that determine investment in underdeveloped countries, especially when it is realized that savings are by no means the only limiting factor, and may be low because investments are low rather than vice versa. ... [C]urrent writings on development are almost devoid of attempts at building up a theoretical framework to answer this question. One finds in them many valuable hints on how investment should proceed, and on investment criteria useful for policy makers, but little systematic discussion of the forces that govern the process of capital accumulation. (Hirschman, 1958: 35)

In this respect, there is a very real sense that the debate on investment and development strategy has come full circle. After the debt crisis, the focus on investment as a policy objective shifted to an emphasis on the removal of policy distortions as the leitmotif of a new approach to development strategy. From this perspective, strengthening investment performance was made subordinate to the broader challenge of improving allocative efficiency, and was linked, specifically, to the mobilization of domestic savings through deregulation and liberalization of the financial sector and attraction of foreign direct investment (FDI) (Conable, 1987: 5; and World Bank, 1991). However, with the failure of a first generation of reforms to deliver on their promises, attention has recently turned to "getting the investment climate right" through a marriage of macroeconomic stability with better business organization, improved governance and measures to boost competition, not only as a way of generating an adequate level of investment, but also for ensuring its quality.[5] In particular, a strong emphasis has been placed on the role of competition in promoting investment and economic growth, to be attained not only through deregulation of domestic markets, but also through closer integration into the world economy and greater openness to international trade and investment.

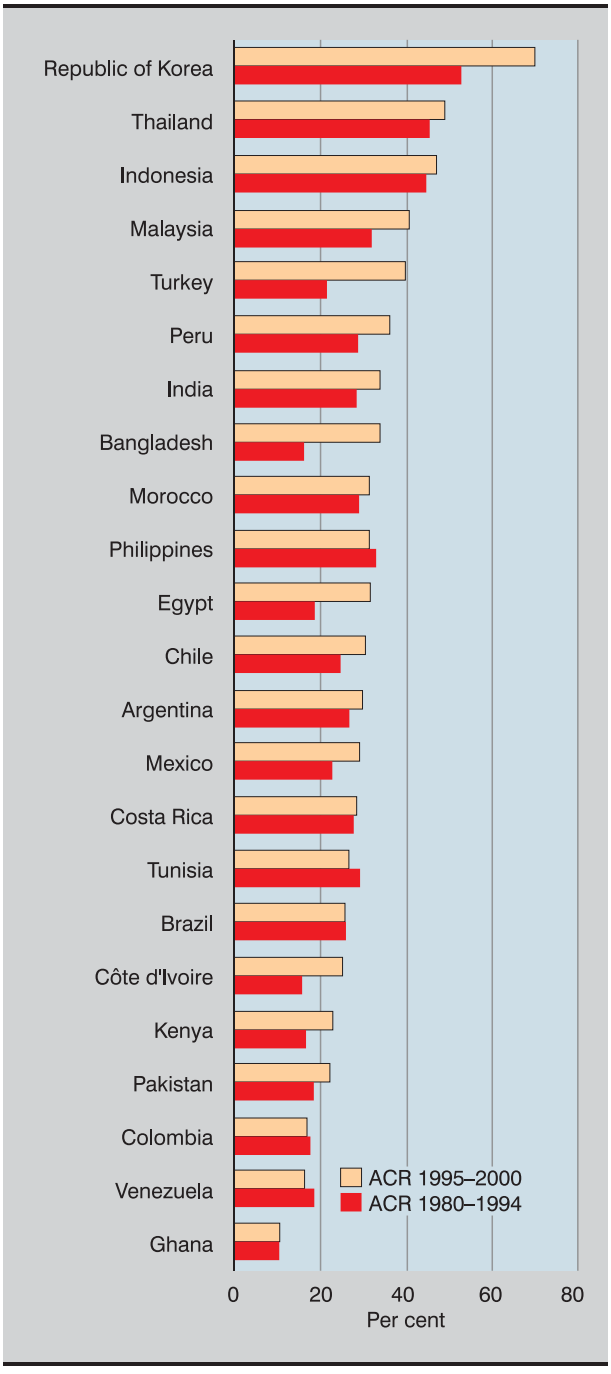
Identification of the factors that govern investment decisions is key to the formulation of an effective development strategy.

Certainly, in a more open and integrated world economy, both the quantity and quality of investment are increasingly influenced by external factors. However, an unconditional link between greater openness and economic growth remains the subject of theoretical and empirical disputes, and recent efforts to strengthen that link by emphasizing the potential benefits of increased international competition have been inconclusive. For instance, it was acknowledged in a World Bank study on the East Asian miracle that these countries did not have maximum competition in product, capital or labour markets, but rather strived to achieve an optimal degree of cooperation and competition (World Bank, 1993). Indeed, many countries in the region, notably Japan and the Republic of Korea, implemented selective import controls, fostered close relationships between government, business and finance, and discouraged foreign investment while importing technology from abroad by other means (Amsden, 1989; Rodrik, 1995; Singh, 1995; and Wade, 1990). The "broad-brush" East Asian evidence does not bear out the claims for the virtues of unlimited competition in relation to economic development.[6] The experience of China, which for the last two decades has had one of the fastest growth rates in the world, is also consistent with the East Asian story.

In any discussion of the forces governing the process of capital accumulation, the manner in which the richest stratum of society – the class of domestic entrepreneurs – acquires and uses its income appears to play a key role. A good deal of evidence suggests that after the initial stages of industrialization, when agricultural incomes provide the main source of investment, capital accumulation is financed primarily by profits in the form of corporate retentions, rather than household savings (*TDR 1994*; Akyüz and Gore, 1996). Over the long term, a high rate of corporate retention is almost always associated with a high rate of corporate investment and corporate dynamism. In its turn, such dynamism provides a social as well as economic justification for the concentration of an important part of national income as profits in the hands of a small minority of the population. The statistical diffi-

***Figure 4.5***

**SELECTED DEVELOPING COUNTRIES: ACCUMULATION/CONCENTRATION RATIO (ACR), 1980–2000**




***Source:*** Everhart and Sumlinski, 2001; World Bank, *World Development Indicators, 2002*; *TDR 1997*.

***Note:*** Share of private investment in GDP expressed as a percentage of the share of the richest quintile of the population in total income. As income distribution data is only available for individual years at varying intervals, the data given for the two periods are for different individual years, or they are averages of some years within each of the two periods.

culties of measuring profit shares in developing countries place a constraint on empirical analysis. However, a recent study based on a sample of 30 developing countries in the late 1980s and early 1990s finds a strong relationship between a high savings rate, a high share of manufacturing output in GDP and a high profit share in manufacturing value added in East Asia (Ros, 2000: 79–83). Moreover, the rapid rise in the savings rates in the East Asian economies is closely associated with sharply rising profit shares and a rapid increase in the share of manufactures in GDP. The study reveals that, by contrast, Latin American countries have savings rates lower than expected on the basis of the share of profits in national income, and a fall in the savings rates in the region has been associated with stagnant or falling manufacturing shares. The strong investment drive of elites in East Asia, maintained over a considerable period of time, can be seen in figure 4.5, which compares the share of private investment in GDP expressed as a percentage of the share in income of the richest quintile. The figure also shows very little change in the relative position of different countries over the past two decades.[7]

In those economies that were able to generate sizeable resources for investment and successfully harness capital accumulation to achieve a sustained process of economic development, market forces alone were not left to dictate either the pace or direction. Rather, the defining features of successful development strategies were the design of effective control mechanisms to both encourage and discipline private investors by raising profits above those generated by competitive market forces, and active policies to ensure those profits found outlets that would add to productive capacity, create jobs and help technological progress (Amsden, 2001). Both fiscal and monetary instruments were used, particularly a low-interest-rate policy – which is important to firms as they build internal funds – and controls on luxury consumption. But trade, financial and industrial policies were also used to create and augment rents and to coordinate investment decisions to prevent "investment races" among large oligopolistic firms.[8] These were supported by long-term ties between banks and large corporations that provided shelter from shocks, helped coordinate investment decisions, improved predictability and reduced the cost of finance (Akyüz, 1993; Singh, 1995; Stiglitz and Uy, 1996; and Amsden, 2001).[9]

## C. Capital formation: recent trends

### 1. Investment levels

The debt crisis of the early 1980s marked a watershed in the investment regime of many developing countries. The crisis threw many countries off their long-term growth paths. Among 25 developing countries which experienced a break in their growth trends between 1950 and 1990, 14 were affected in the period between 1979 and 1983, in all cases registering a shift from a positive to a negative trend (Ben-David and Papell, 1995). Among a smaller group of 18 developing countries examined by the UNCTAD secretariat, including 14 of the so-called Baker 15 group (*TDR 1988*),[10] all but Chile, Ghana and Pakistan saw a drop in per capita growth rates in the 1980s compared with earlier periods, and for nine of these countries per capita growth rates were negative. Almost all the countries experienced a drop in the share of investment at some time between 1979 and 1985, some below the level needed to replace depreciated capital (Serven and Solimano, 1992). In many cases, drastic policy changes followed in an effort to reduce levels of indebtedness and re-establish a sustainable growth momentum. A number of countries implemented stringent monetary and fiscal measures to curtail the volume of credit and reduce government spending. They lowered the real exchange rate to raise export earnings and introduced structural policies to correct price distortions, free market forces, raise the profile of the private sector and improve overall allocative efficiency. Although the ultimate aim of such adjustments was to prepare the ground for private-investment-led recoveries, it was also recognized that some of these measures could have a temporary adverse effect on investment, particularly through the rising costs of imported goods, excess capacity in import-competing sectors, and a profit squeeze, leading to an investment pause in the "transition to a new relative price regime" (World Bank, 1992: 34–35). However, for most of the reforming countries, a rapid and sustained recovery in capital accumulation and growth has proved elusive.

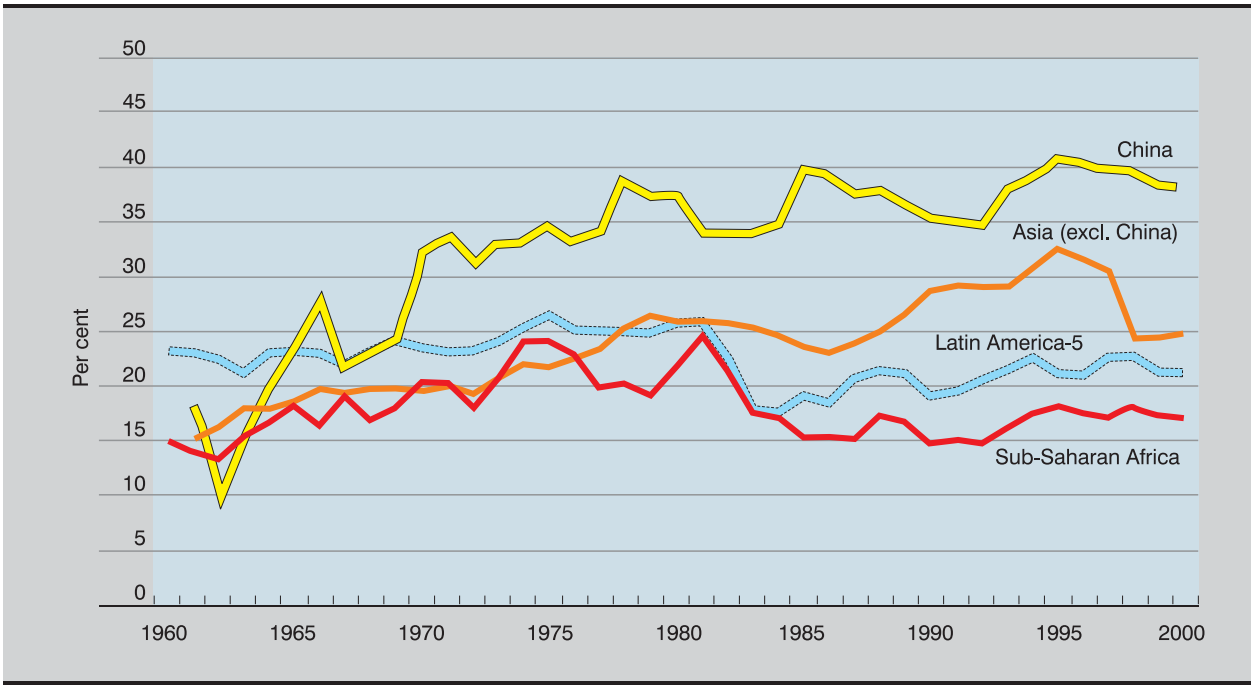
The debt crisis of the early 1980s marked a watershed in the investment regime of many developing countries, throwing them off their long-term growth paths.

Long-term trends in gross capital formation as a share of GDP are presented in figure 4.6 and table 4.1 for different regions and economies. Sharp differences among regions are clearly visible. In Latin America, there was a marked decline in capital accumulation that occurred during the debt crisis of the early 1980s, and the recovery beginning in the late 1980s was not sufficient for it to return to earlier levels. Nor has it proved sustainable, with investment weakening again across most of the region since 1998.Thus Latin America in general appears to have established an accumulation regime which commits around 20 per cent of its income to capital formation, well below the level thought necessary to allow the region to attain catch-up rates of economic growth. Moreover, a comparison of investment-growth re-

***Figure 4.6***

**GROSS CAPITAL FORMATION IN SELECTED DEVELOPING REGIONS AND CHINA, 1960–2000**

*(Per cent of GDP)*




***Source:*** World Bank, *World Development Indicators, 2002*.
***Note:*** See fig. 4.1 for definitions of regional groups. Ratios are calculated on the basis of values in constant 1995 dollars.

lations in Latin America across each of the last four decades suggests a weakening of the effectiveness of investment in the period following the debt crisis. Despite extensive market-oriented reforms, designed to improve the allocation and use of resources, each percentage point increase in gross capital formation was associated with slower income growth in the 1990s than in both the 1960s and 1970s (fig. 4.7A).

Country-level trends confirm this picture, albeit with variations. Investment in Argentina, Brazil and Venezuela dropped furthest and longest among the larger Latin American economies in the 1980s, and recoveries in the 1990s were partial; in all three cases, the average for the period 1995–2000 remained below that for 1980–1985. Investment performance was less erratic in Mexico and Colombia, although in neither case did the recoveries return to earlier peaks, and Colombia experienced a very sharp fall beginning in the late 1990s. Thus, while in the region as a whole there was a recovery in growth after the debt crisis, which became quite marked in some countries in the early 1990s, this was not supported by a process of strong and sustained capital formation. The notable exception to this was Chile, where investment recovered in the second half of the 1980s and maintained an upward trend for much of the 1990s, taking it towards a 25-per-cent threshold level. Some other economies rich in natural resources, notably Peru and Jamaica, followed a pattern similar to that of Chile after the debt crisis, although without a comparative acceleration of growth.

Africa experienced a marked improvement in its rate of capital accumulation in the 1960s and early 1970s. Some growth-accounting exercises show that physical capital accumulation ac-

**Table 4.1**

**GROSS FIXED CAPITAL FORMATION IN SELECTED DEVELOPING ECONOMIES AND REGIONS, 1970–2000**

*(Per cent of GDP)*

| | 1970–1975 | 1975–1980 | 1980–1985 | 1985–1990 | 1990–1995 | 1995–2000 |
|---|---|---|---|---|---|---|
| Argentina | 22.3 | 24.0 | 19.4 | 15.9 | 16.9 | 18.8 |
| Bolivia | 15.3 | 16.4 | 11.2 | 12.4 | 15.1 | 19.6 |
| Brazil | 28.9 | 30.3 | 24.0 | 21.8 | 19.5 | 20.5 |
| Chile | 17.1 | 14.8 | 15.0 | 16.1 | 20.4 | 23.4 |
| China | 25.1 | 28.8 | 28.7 | 29.1 | 30.5 | 35.4 |
| Colombia | 18.4 | 17.9 | 19.4 | 17.6 | 18.5 | 18.3 |
| Côte d'Ivoire | 22.7 | 30.3 | 23.9 | 12.6 | 10.1 | 13.4 |
| Ecuador | 26.3 | 29.4 | 23.5 | 18.7 | 17.8 | 17.3 |
| Egypt | 17.0 | 28.7 | 33.2 | 25.7 | 16.7 | 17.9 |
| Ghana | 15.1 | 15.3 | 11.3 | 11.2 | 16.8 | 20.6 |
| India | 17.6 | 18.9 | 19.4 | 20.6 | 22.0 | 23.5 |
| Indonesia | .. | .. | 22.4 | 22.9 | 26.5 | 26.1 |
| Kenya | 20.7 | 21.3 | 16.1 | 15.5 | 16.3 | 14.8 |
| Malaysia | 19.7 | 22.0 | 28.8 | 24.3 | 36.2 | 34.7 |
| Mexico | 21.9 | 22.9 | 21.4 | 17.6 | 19.8 | 20.1 |
| Morocco | 22.5 | 31.7 | 25.6 | 21.4 | 21.8 | 21.6 |
| Nigeria | 21.3 | 26.0 | 17.5 | 15.4 | 19.8 | 19.7 |
| Pakistan | 18.8 | 19.1 | 18.4 | 17.9 | 17.3 | 15.6 |
| Peru | 16.1 | 16.7 | 17.0 | 15.1 | 19.1 | 22.9 |
| Philippines | 16.2 | 22.0 | 23.9 | 18.4 | 21.4 | 22.1 |
| Republic of Korea | 16.3 | 24.0 | 25.6 | 29.0 | 35.7 | 32.0 |
| Taiwan Province of China | 19.6 | 22.5 | 21.2 | 19.1 | 23.4 | 24.9 |
| Thailand | 27.9 | 28.1 | 28.7 | 30.3 | 39.6 | 28.8 |
| Turkey | 14.0 | 16.5 | 15.1 | 21.5 | 24.2 | 24.0 |
| Uruguay | 11.1 | 18.6 | 15.4 | 9.6 | 12.7 | 14.2 |
| Venezuela | 21.1 | 29.4 | 22.4 | 18.2 | 17.8 | 16.4 |
| **Latin America** | **24.0** | **26.0** | **21.7** | **19.1** | **19.0** | **20.0** |
| **Asia** | **19.3** | **22.7** | **23.5** | **24.7** | **29.0** | **29.5** |
| **Asia, excluding China** | **17.7** | **21.2** | **22.2** | **23.4** | **28.4** | **27.0** |
| **Sub-Saharan Africa** | **23.3** | **24.6** | **21.3** | **17.9** | **17.1** | **17.2** |

***Source:*** UNCTAD secretariat calculations, based on World Bank, *World Development Indicators, 2002*; and Thomson Financial Datastream.

***Note:*** Gross fixed capital formation by country was calculated on the basis of real GFCF and GDP data except for Kenya, Nigeria and Turkey. Figures for regions are weighted averages of the values of the countries listed, except for sub-Saharan Africa, where the average is for all countries of the region.

counted for around two-thirds of the growth in sub-Saharan Africa in the period 1960–1975 – as much as is found in East Asian countries (Collins and Bosworth, 1996). Physical investment rates increased in a wide range of countries. Of the 47 episodes of "investment transition", or investment surges (defined as a rapid rise in the investment rate which is sustained for at least five years), observed in developing countries between 1960 and 1980, 21 were in sub-Saharan Africa (Rodrik, 1999, table 3.2). However, these post-colonial investment booms were all too often followed by investment slumps, rather than being translated into a virtuous growth process. Investment in the

1970s was already on an unsteady path before experiencing a sharp and persistent decline beginning in the early 1980s and bottoming out in the early 1990s at between 15 and 18 per cent of GDP, a level well below the desired threshold (fig. 4.6). And much like Latin America, there appears to have been a weakening in the link between capital formation and output growth in the 1990s (fig. 4.7B). The evolution of investment and growth in Africa reflects in large part the shifting combinations of commodity price movements, aid flows and balance-of-payments constraints, all of which have strongly influenced investment and growth performance in that region.[11] A recent comparison of strong growth episodes in Africa between 1960 and 1996 confirms that these tended to be higher before the debt crisis than after, as a result of high rates of capital accumulation; in the post-debt-crisis success stories, capital accumulation accounted for only 13 per cent of growth, on average, compared to more than two-thirds in the earlier period (Berthelemy and Soderling, 2001).[12] Another recent study on policy reforms and capital accumulation in Africa has concluded that "even where adjustment policies have been rigorously implemented, they have failed to establish a sustained accumulation process." (Akyüz and Gore, 2001: 272)

A rapid and sustained recovery in capital accumulation and growth has proved elusive for most of the reforming countries.

East Asia established a very different investment regime from that of the other developing regions. The rising share of investment in GDP throughout the 1970s was only briefly interrupted by the debt crisis of the early 1980s (fig. 4.6). A number of East Asian economies with large tradeable goods sectors and substantial industrial capacity were able to use modest currency depreciation and temporary wage restraint to initiate an export-led recovery. Such was the experience in the Republic of Korea where, after a sharp initial drop in growth and investment, growth picked up based on strong investment-export linkages.[13] This pattern was repeated, to varying degrees, in Taiwan Province of China, Indonesia, Malaysia and Thailand (*TDR 1989*, Part One, chap. V). In all these economies, investment levels were maintained, even in the face of significant swings in resource transfers. Between 1979–1981 and 1985–1987, the average share of investment in GDP in these five economies fell from 29.2 per cent to 26.3 per cent, compared with an average decline from 24 per cent to 15.5 per cent for the Baker 15 countries.[14] Investment across the region began to recover strongly during the second half of the 1980s, accelerating sharply in the first half of the 1990s to above 30 per cent of GDP. The upward trend ended with the Asian financial crisis in 1997, although it still consistently remained at or above a high threshold level for most countries. But even in these high-investment regimes of East Asia there are variations among countries (table 4.1). The larger first-tier NIEs saw a steady rise after the mid-1980s, more prominent in the Republic of Korea, which achieved very high peaks in the mid-1990s, whereas in Taiwan Province of China the rise was steadier and from a lower level than elsewhere in the region. In the second-tier NIEs, the increase in investment from the second half of the 1980s was more pronounced, reaching much higher levels than previously, but the drop following the 1997 crisis was also sharper.

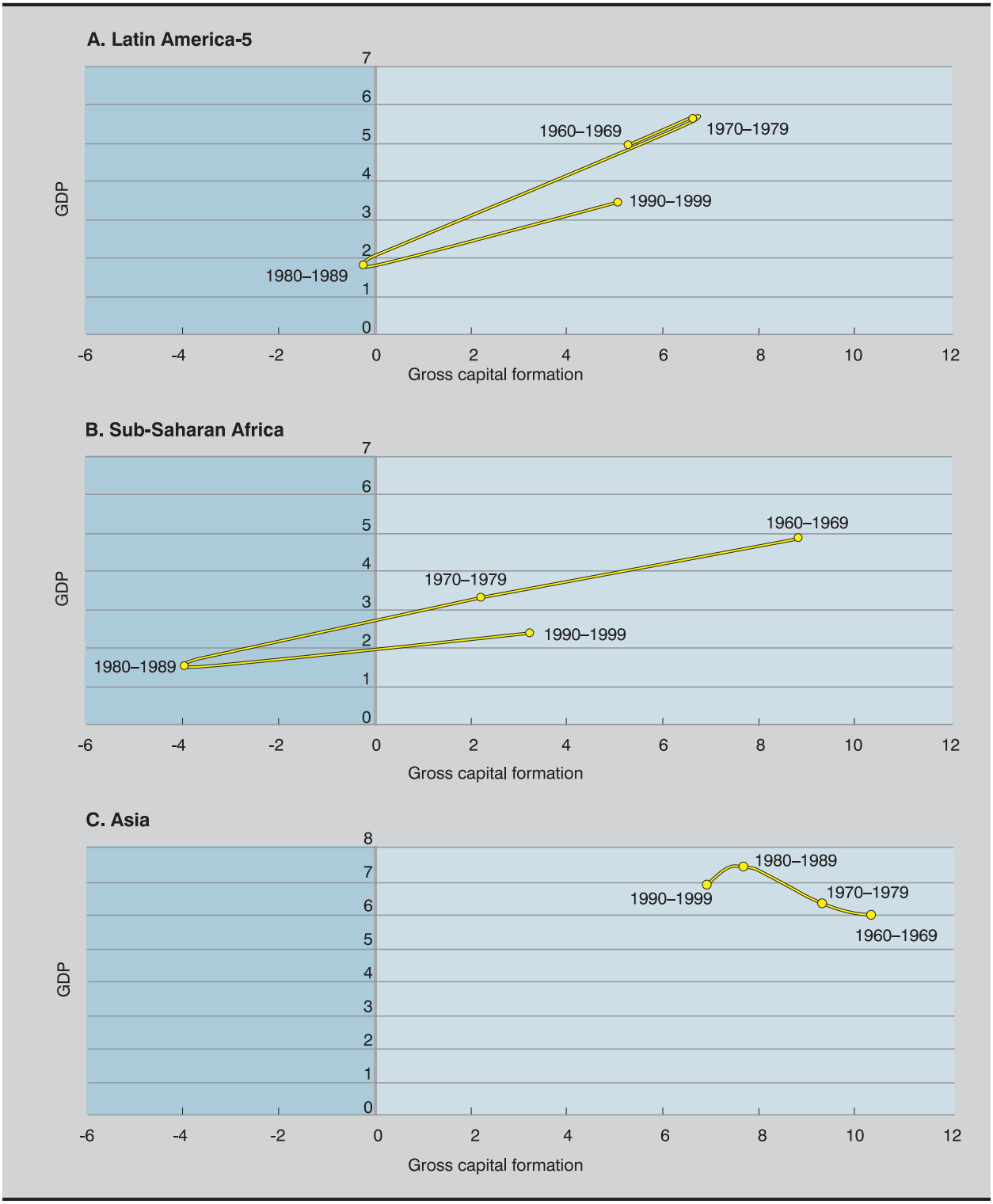
Latin America appears to have established an accumulation regime which commits around 20 per cent of its income to capital formation, well below the level thought necessary to allow the region to attain catch-up rates of economic growth.

Although countries in South Asia also maintained a robust investment performance after the debt crisis, this started from a lower level than in East Asia, and acceleration was weaker during the 1990s. China had maintained a very high rate of accumulation over the past three decades, and it rose further in the late 1990s. However, the contribution of capital accumulation to economic growth improved significantly only in the past two decades. The rate of accumulation in India was above the

***Figure 4.7***

**GROWTH OF GROSS CAPITAL FORMATION AND GDP IN LATIN AMERICA, SUB-SAHARAN AFRICA AND ASIA, 1960–1999**

*(Average annual change in per cent)*




***Source:*** World Bank, *World Development Indicators, 2002.*
***Note:*** See fig. 4.1 for definitions of regional groups. Figures for regional groups are weighted averages.

20-per-cent threshold from the late 1980s, and moved towards the 25-per-cent threshold in the 1990s.

To summarize, with few exceptions, investment rates were broadly similar in the 1960s and 1970s in different regions and countries. Since then the ratio of gross domestic investment to GDP in the most successful East Asian NIEs has continued to rise, in some cases reaching 30–40 per cent in the 1990s. These countries have been joined by China and, to a lesser extent, India, both of which have seen considerable improvements in their investment and growth performance over the past two decades. By contrast, in a large majority of countries in Africa and Latin America, investment rates have failed to recover after sharp falls in the 1980s. In particular, while some major Latin American countries, including Argentina and Brazil, have had much higher per capita incomes than the Asian countries, such as India, Indonesia and Thailand, their investment rates have been persistently lower, by between 5 and 10 percentage points of GDP. In this respect, the "investment pause" associated with structural adjustment policies has become a permanent feature of these economies.

East Asia established a very different investment regime from that of the other developing regions.

## 2. Stability of investment

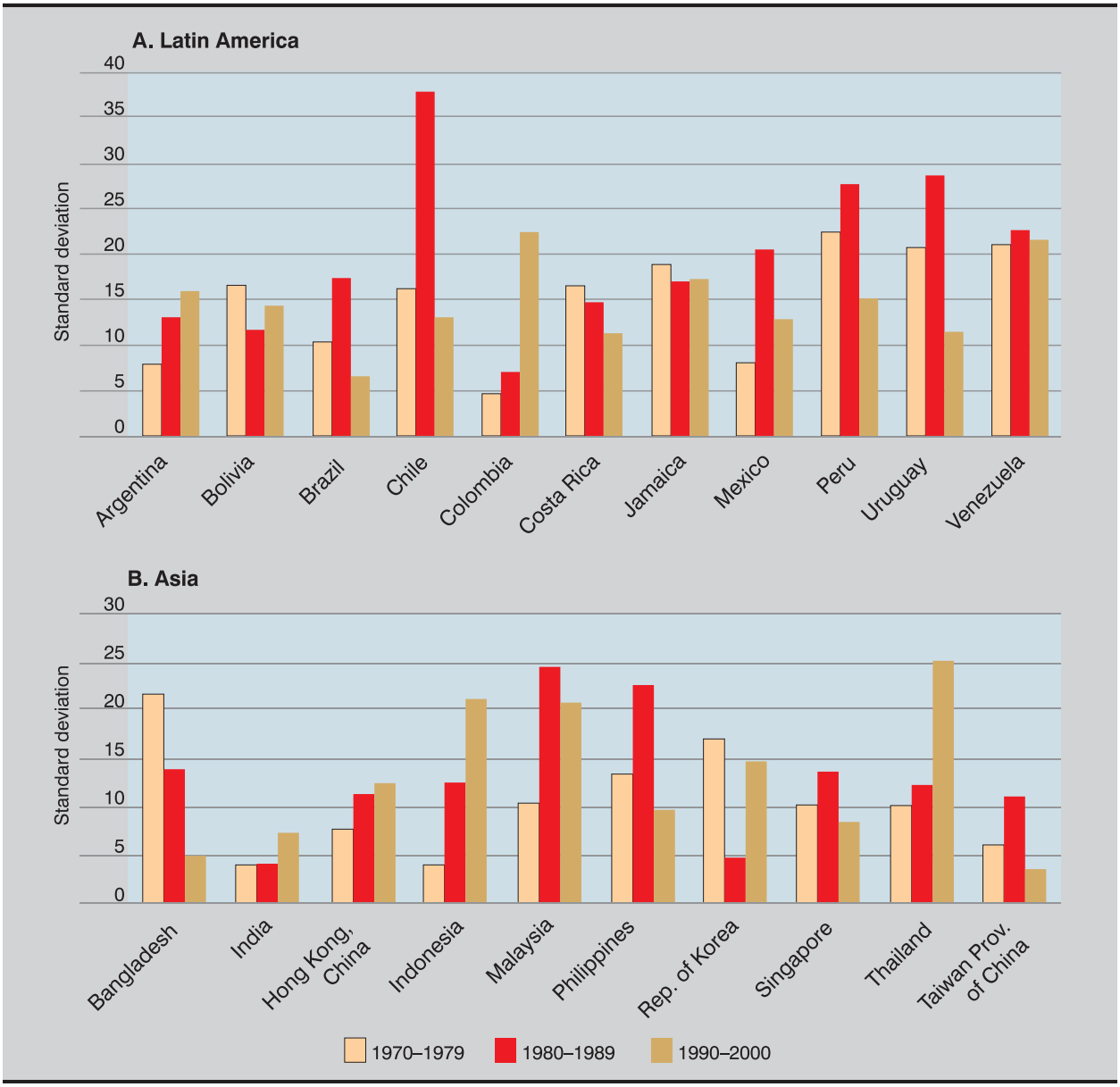
A stable macroeconomic environment is an essential element of strong investment performance. A volatile business climate can increase investor uncertainty and reluctance to expand capacity, which in turn can slow productivity growth, thereby increasing the potential for further economic uncertainty and heightened instability. On the other hand, a fast pace of investment is unlikely to be a stable one; it can carry strongly unbalancing pressures and create disequilibrium, which might increase vulnerability to shocks and heighten instability. In the context of a fast pace of capital accumulation, institutional arrangements and policy measures will be needed not only to smooth out cyclical fluctuations in economic activity, but also to prevent the kind of boom-bust cycles in investment that have been witnessed in the past decade, both in advanced countries such as the United States and in strong performers in East Asia.[15]

A combination of the accelerator mechanism and an expectational calculus makes investment a lead factor in the business cycle. That investment is also a more volatile component of the business cycle in developing countries than in developed countries is also reasonably well established. According to a recent study, investment and imports are twice as volatile in the South as in the North (Kouparitsas, 2001), although others have suggested that this is only true for private investment (Rand and Tarp, 2002). The absence or weakness of automatic stabilizers in most poorer countries, and the heavy reliance of investment on both external financing and imported capital goods – which ties its movement more closely to the external economy – are likely explanations for this pattern. While in middle-income developing countries capital inflows tend to trigger domestic cycles (World Bank, 2003), in poorer countries, particularly in sub-Saharan Africa, investment volatility has been closely tied to commodity price movements.

Although vulnerability to external shocks has been a long-standing feature of investment in developing countries, it appears that high volatility levels have persisted even after the immediate disturbances of a debt crisis have subsided (fig. 4.8). An examination by the UNCTAD secretariat of boom-bust cycles in East Asia in the 1980s and 1990s (*TDR 2000*: 60, table 4.1) found that surges in capital inflows were particularly tied to private investment booms. Investment/GDP ratios at the peak of the financial cycle in Indonesia, Malaysia, the Republic of Korea and Thailand were between 3 and 14 percentage points higher than at the start of the boom, which in all these cases had already been high. However, in some other episodes examined, where capital inflows were associated more closely with a boom in private consumption, investment could still play a significant role in fuelling the boom. In Argentina,

***Figure 4.8***

**VOLATILITY OF GROSS CAPITAL FORMATION IN SELECTED DEVELOPING ECONOMIES IN LATIN AMERICA AND ASIA, 1970–2000**




***Source:*** World Bank, *World Development Indicators, 2002*; and Thomson Financial Datastream.
***Note:*** Calculations are based on values in constant 1995 dollars.

Turkey and Venezuela, the share of investment rose by between 3.7 and 6 percentage points, and this occurred over a shorter period of time than in East Asia. Declines in investment following financial crises were particularly dramatic in East Asia, exceeding 15 percentage points, whereas elsewhere, with the exception of Turkey, the bust led to falling consumption.

These experiences suggest important variations in the investment cycle across developing regions, which may well have implications for

**Box 4.1**

### COMPARING INVESTMENT CYCLES IN LATIN AMERICA AND ASIA

To better grasp the differences in business cycles across the developing world, an attempt has been made to identify typical business cycles for Latin America and South and East Asia (or Asia for short). Taking the period between 1960 and 2000, and using a Hodrick-Prescott filter to de-trend investment and output, a stylized cycle has been created, divided into nine phases, each representing one year, with phase zero indicating the trough of the cycle. Peaks and troughs in each individual country over the period have been averaged to identify respective periods of recovery and slowdown.

Taking the period as a whole, the cycle in Latin America appears to be a good deal more volatile than in Asia. In Asia, even in the trough growth remains positive, and while the recovery peaks in the first phase, the pace remains very fast through the first four phases. Investment is clearly a strongly growing presence across the recovery phase. By contrast, in Latin America, the trough registers negative growth and the recovery is much weaker even though it is maintained through the second phase and drops very sharply thereafter. Investment is particularly volatile, falling sharply in the year prior to the trough and slowing already in the third phase of recovery.

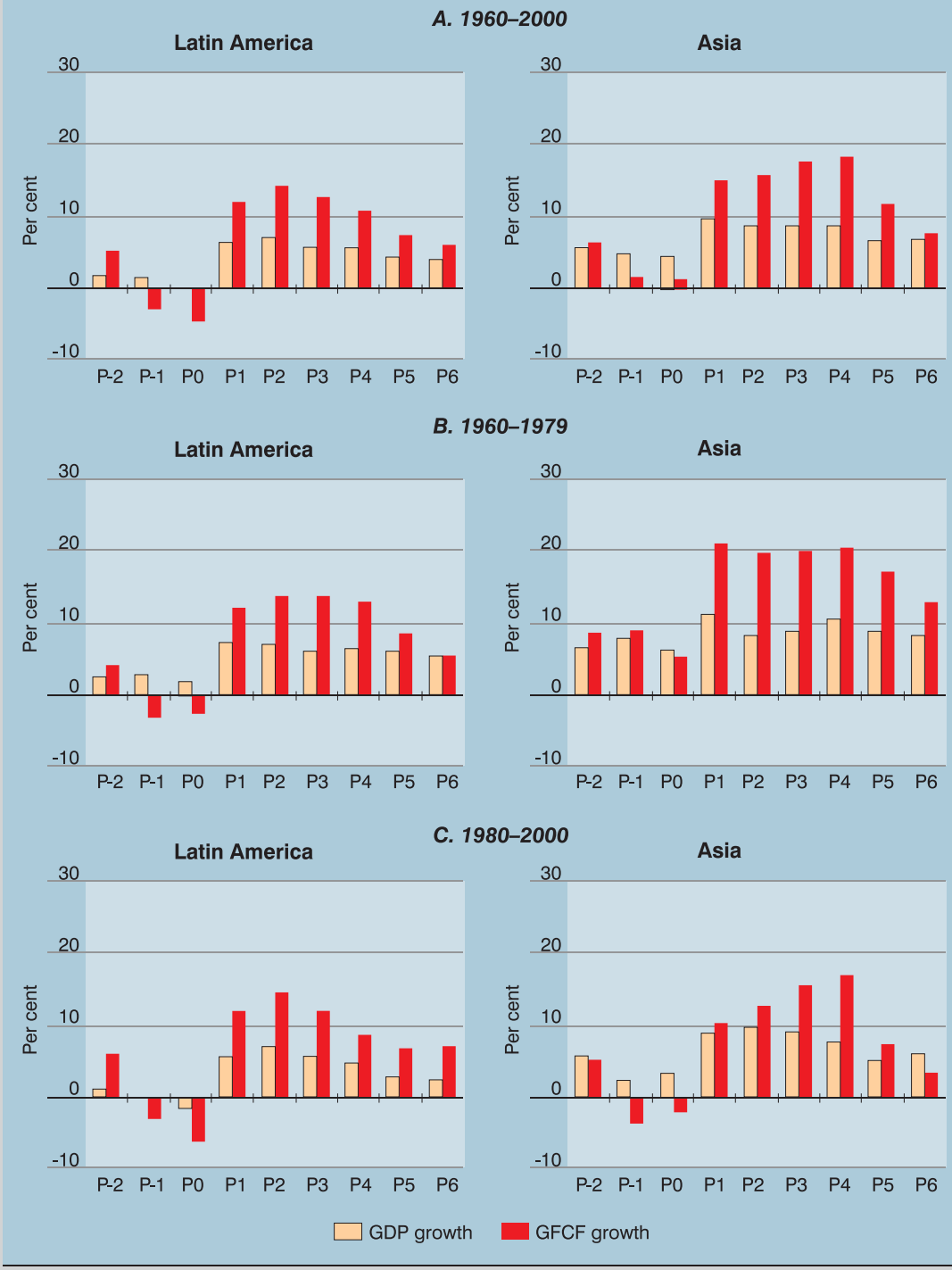
When the periods 1960–1979 and 1980–2000 are considered separately, some additional conclusions are reached. In both regions, the cycle becomes visibly more volatile in the later period. In Latin America the cycle appears to be more robust in the earlier period, with no phase of negative growth, and sustained recovery over the subsequent four phases. By contrast, in the later period, growth becomes negative in the trough, and the recovery begins to slacken visibly after the second phase. Investment volatility clearly is much greater in this second period, falling sharply after the second phase in the latter cycle. In Asia, although growth in the trough remains positive in the later period, the drop is greater and the recovery is also weaker than in the earlier cycle. Investment exhibits negative growth in the later period, but recovery is stronger and more sustained than in Latin America.

/...

longer-term growth performance. To better grasp the differences, the UNCTAD secretariat has attempted to identify "typical" business and investment cycles for different regions. A closer look at these cycles confirms significant differences between Latin America and Asia, differences that have become even more marked since the debt crisis (box 4.1). In the cycles for the Asian countries examined, due to the strong turnaround in investment activity, annual growth rates, on average, reach 10 per cent in the first two years after a recession, and stay at high levels as investment remains robust for some time after recovery has set in. Moreover, prices remain surprisingly stable across the cycle in most cases, and the fiscal and external deficits continue to be kept under control. In Latin America, the cycle shows greater variations and the pattern of successful recovery is far less clear-cut: growth rates are only half those seen in Asia, the recovery is shorter, and the slowdown, when it comes, is much more pronounced. This is largely due to investment being cut short, its growth rate falling sharply in the fourth phase of the turnaround following growth rates of over 10 per cent per annum. Consequently, counter-cyclical policies gain added importance in Latin America, but their scope is highly limited due to structural imbalances (see chap. VI).

**Box 4.1 (concluded)**

GROWTH AND INVESTMENT CYCLES IN LATIN AMERICA AND ASIA, 1960–2000




**Source:** UNCTAD secretariat calculations, based on World Bank, *World Development Indicators, 2002*; and Thomson Financial Datastream.

**Note:** Latin America comprises Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Jamaica, Mexico, Peru, Uruguay and Venezuela; Asia comprises Bangladesh, China, Hong Kong (China), India, Indonesia, Malaysia, the Philippines, the Republic of Korea, Singapore and Thailand. For further explanations see text.

## 3. Composition of investment

The fact that many developing countries, particularly in Latin America and Africa, have, since the debt crisis, slipped below the investment thresholds needed for rapid and sustained economic growth, suggests that reforms have, so far, failed to deliver on the promise of improving this key dimension of economic performance. However, countries in different regions have achieved quite different growth rates even with similar investment levels, and different regions have seen different growth outcomes from the same level of investment at different times. This suggests that attention should also be paid to the composition of investment in any assessment of overall investment performance.

### (a) Public and private investment

Capital formation in most developing countries is undertaken predominantly by private domestic enterprises. Although there was a noticeable and generalized shift towards public investment during the 1970s, from 6.3 per cent of GDP at the beginning of the decade to 10.1 per cent in the early 1980s, private investment also enjoyed a rising share of GDP during this period. The balance was close in sub-Saharan Africa, with short episodes of public investment being higher as a share of GDP, and both South Asia and North Africa saw higher shares of public than private investment for a more sustained period from the mid-1970s (Everhart and Sumlinski, 2001). Following the debt crisis of the 1980s, the balance in all regions shifted towards private investment, including by foreign corporations (fig. 4.9). However, the earlier peak in private investment prior to the debt crisis was not surpassed until 1996 in developing countries taken together. This level was reached somewhat earlier in East Asia, later in Latin America and not at all in sub-Saharan Africa. In China, the share of private investment rose sharply, from less than 4 per cent of GDP in 1980 to 17 per cent in 2000.

By contrast, the declining share of public investment in GDP after the debt crisis has been strong and persistent in most developing regions: from an overall average of over 10 per cent of GDP in the early 1980s to 7 per cent by 2000. However, China has resisted this trend; public investment has consistently remained higher than private investment during its recent period of very rapid growth, albeit posting only a modest overall rise from an already high level. In East Asia, the 1990s witnessed a strong recovery in public investment, which in some countries, notably Thailand, even surpassed previous peaks.

The leading role for private firms in animating the profit-investment nexus does not exclude a potentially important role for public investment. Indeed, an important policy challenge will be to strike the right balance between the two. Recently there has been much warning of the threat of public investment crowding out private investment. Crowding out, strictly speaking, refers to the variety of channels whereby additional government spending may have little or even a negative effect on total output because of its adverse effects on interest-sensitive components of private expenditure. However, in the developing-country context it also refers, more loosely, to the possibility of State-owned enterprises entering activities that might otherwise offer acceptable returns to private investors. A central assumption of structural adjustment programmes was that downsizing the public sector would bring a significant improvement to the investment climate and encourage private investment, which, being more efficient, would accelerate growth.

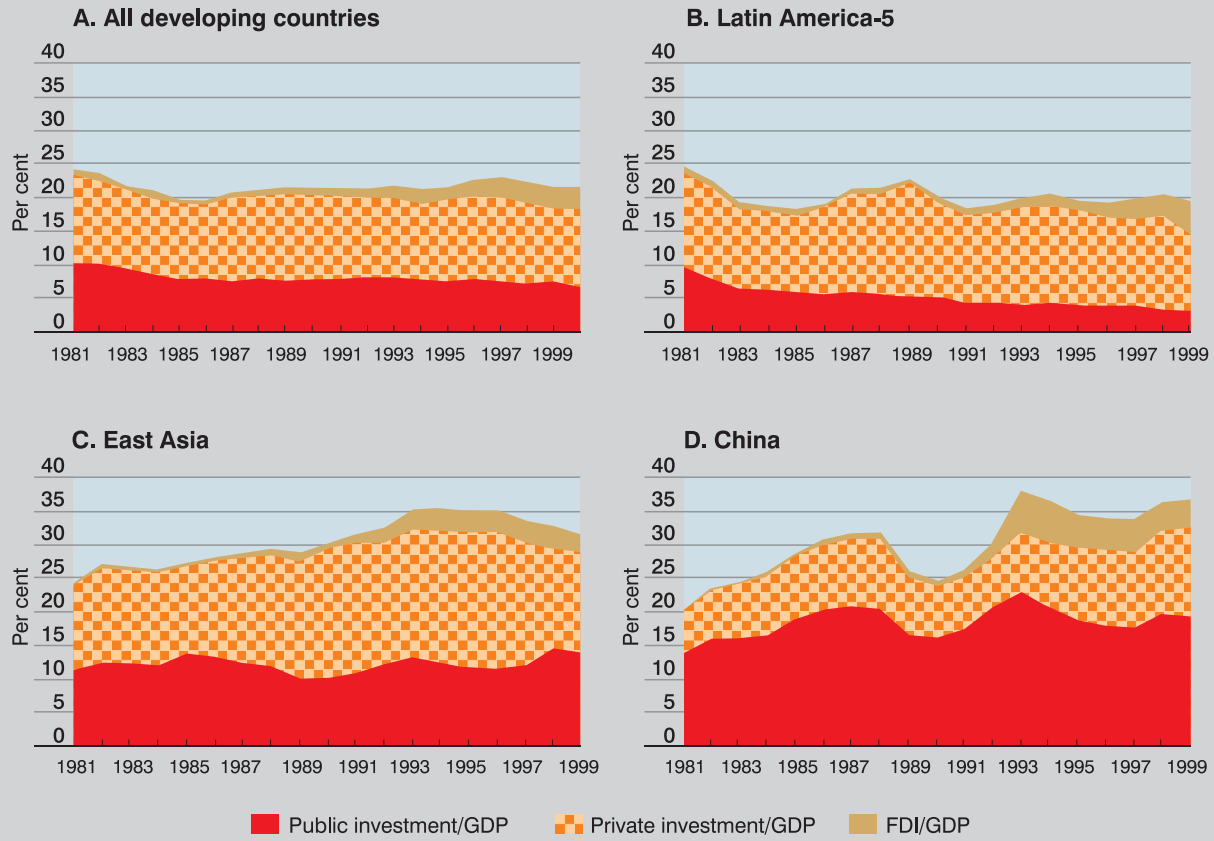
In any assessment of overall investment performance, attention should be paid to the composition of investment.

Neither theory nor empirical evidence offers clear-cut conclusions in these respects. Studies on whether public investment crowds out private investment range across the spectrum of possible outcomes. A recent review of the literature (covering studies in both developed and developing countries) was unable to report any consensus, with just 5 of the 20 studies reviewed reporting strong evidence of "crowding out" (Everhart and Sumlinski 2001, table 2.2), and suggesting that a more disaggregated approach to the

***Figure 4.9***

**PUBLIC, PRIVATE DOMESTIC AND FOREIGN INVESTMENT IN SELECTED GROUPS OF DEVELOPING COUNTRIES, 1981–1999**

*(Per cent of GDP)*




***Source:*** UNCTAD secretariat calculations, based on Everhart and Sumlinski, 2001; UNCTAD, *World Investment Report, 2002*; and World Bank, *World Development Indicators, 2002*.

***Note:*** Latin America-5 comprises Argentina, Brazil, Chile, Colombia and Mexico; East Asia comprises Indonesia, Malaysia, the Philippines, the Republic of Korea and Thailand. Percentage shares are weighted averages of the values for these countries. Private investment is defined as total gross domestic investment (from national accounts) less consolidated public investment and FDI inflows.

possible impact of increased public investment (and spending more generally) is needed, given the range of activities included under this category.

A simple exercise of within-country correlations between public and private investment found an almost even split between episodes of crowding in and crowding out in 63 developing countries for the period 1970–2000. However, public investment in communication and transport did appear to consistently crowd in private investment (Everhart and Sumlinski, 2001, tables 2.2 and 2.3; and World Bank 2003: 104). Repeating this exercise for the period 1985–2000 shows little change: four countries (Papua New Guinea, Thailand, Tunisia and Uruguay) shifted from crowding in to crowding out and two countries (Brazil and Chile) shifted in the opposite direction.

Many of the countries that successfully maintained a robust investment performance after the debt crisis also maintained a stable or rising share

of public investment in total income along with crowding-in effects. This was the case with Chile in Latin America, as well as with China, Malaysia and the Republic of Korea in East Asia, and Mauritius in Africa. By contrast, the sharply declining trend in public investment across much of Latin America since the debt crisis appears to be associated with a deindustrialization trend (see chap. V). In sub-Saharan Africa this same trend is closely tied to the weak performance of agriculture and to the lack of diversification (Berthelemy and Soderling, 2001, table 3; and Akyüz and Gore, 2001).The difficulties involved in any such analysis of these trends is typified by a recent study of the Latin American experience during the period 1983–1993. It found a positive association between public investment and economic growth, but also evidence that public investment does crowd out private investment where inefficient State-owned enterprises and public trust funds substitute for private investment spending. Furthermore, there was evidence of a significantly adverse impact of defence spending on private investment (Ramirez and Nazmi, 2003).

Many of the countries that successfully maintained a robust investment performance after the debt crisis also maintained a stable or rising share of public investment in total income.

### (b) *Foreign direct investment and capital accumulation*

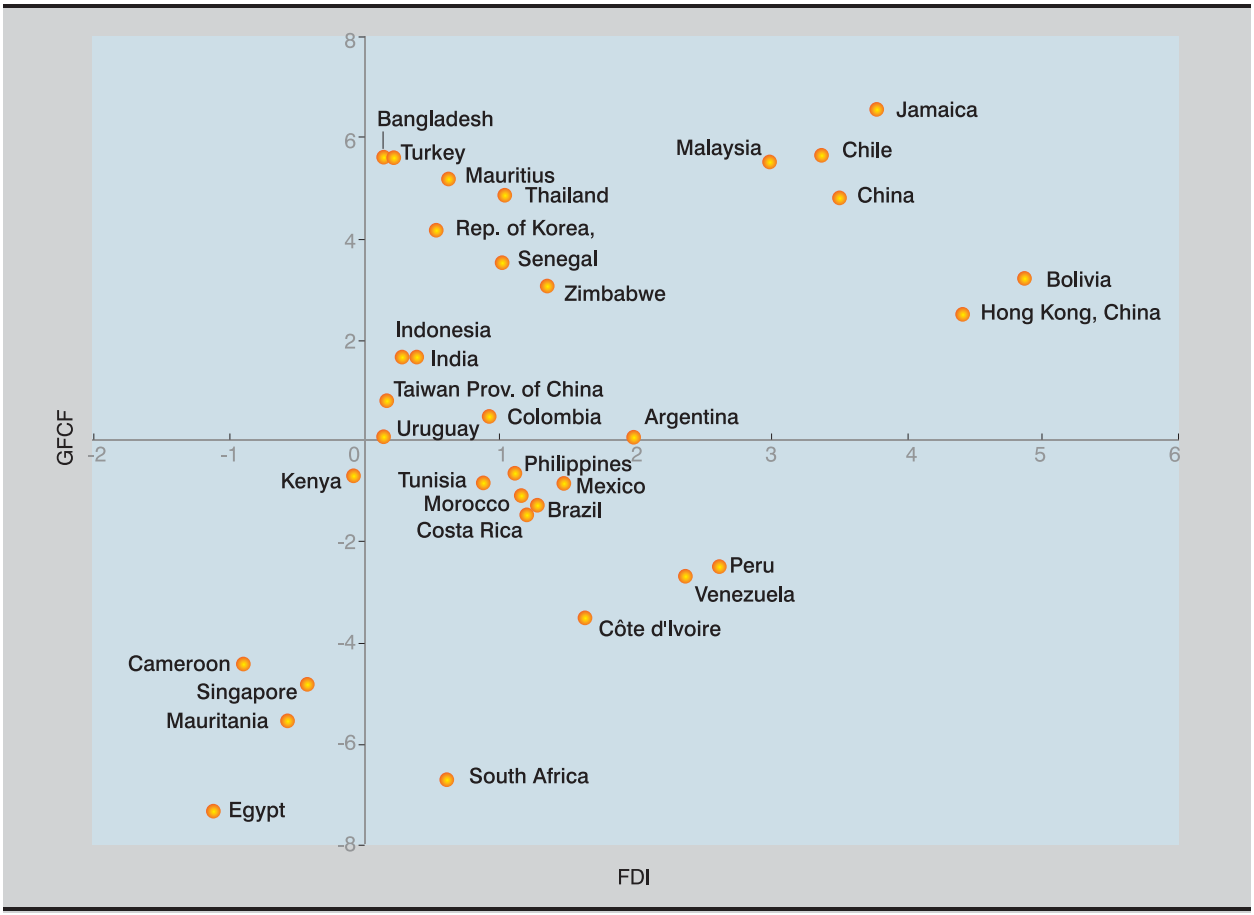
In contrast to public investment, foreign direct investment (FDI) has risen persistently as a proportion of GDP in all developing regions since the debt crisis (fig. 4.9). The increase has been particularly marked in Latin America where, on average, FDI rose to almost 3 per cent of GDP in the 1990s, from less than 1 per cent in the 1980s. About two-thirds of these inflows in the 1990s were linked to privatization (*TDR 1999*: 117–119). Almost every country in the region attracted increased inflows of FDI. In Asia, the average increase was in the same order of magnitude as in Latin America, although less evenly distributed. China and Malaysia stood out with very high ratios of FDI to GDP. Excluding these, dependence on FDI was limited. In Africa, FDI inflows were small in absolute terms but not relative to domestic capital formation and GDP. However, in that region too the increase was concentrated in a small number of countries.

The impact of FDI on capital accumulation and economic growth is difficult to trace, and this is perhaps the main reason for the lack of consensus on the role of FDI and foreign corporations in economic development.[16] The inclusion of both greenfield investment and the acquisition of existing assets in the definition of FDI makes it difficult to link FDI directly to fixed capital formation. Further, as in the case of public investment, its effect on domestic private investment is ambiguous. On the one hand, even when FDI takes the form of acquisition of existing assets,[17] rather than investment in bricks and mortar, it can still lead to an expansion of domestic investment in both public and private sectors. It can do so by loosening balance-of-payments constraints, helping to loosen the budget constraint and boosting public investment in physical and human infrastructure. It may also lead to productivity gains or to additional real investment for rationalization and technological upgrading. On the other hand, large inflows of FDI can equally impede investment in tradeable goods sectors to an extent that they lead to an overvaluation of the currency. Similarly, over time, profit remittances may tighten the balance-of-payments constraint, necessitating cuts in domestic absorption and public and private investment. Finally, a foreign presence may improve overall economic performance by helping establish linkages with international markets and creating positive technological spillovers. However such benefits are not automatic, in part because transnational corporations (TNCs) operate in highly imperfect markets, where their financial and technological strengths enable them to crowd out domestic producers or pre-empt their investment opportunities.[18] Consequently, the contribution of FDI to capital formation, technical progress and growth depends crucially on the policies adopted by recipient countries vis-à-vis foreign investors.

***Figure 4.10***

**CHANGES IN DOMESTIC GROSS FIXED CAPITAL FORMATION AND FDI IN SELECTED DEVELOPING ECONOMIES: 1990–2000 COMPARED TO 1980–1990**

*(Per cent of GDP)*




***Source:*** UNCTAD, *World Investment Report* database; World Bank, *World Development Indicators, 2002*; and Thomson Financial Datastream.

***Note:*** GFCF as a percentage of GDP was calculated using data in current prices, except for Argentina, where constant 1995 prices were used.

An examination of recent trends in FDI and gross fixed capital formation (GFCF) in developing countries supports these considerations. For developing countries as a whole, there is a positive but weak relationship between the share of FDI in GDP and the share of GFCF. More importantly, there are significant differences in the relationship between changes in FDI and domestic capital formation in Asia and Latin America (fig. 4.10). In this respect a comparison of changes in GFCF and FDI between the 1980s and 1990s is revealing. In figure 4.10, for comparison purposes, the investment ratio is measured in current prices. As a result, changes in this ratio can differ from those reported in table 4.1 based on constant prices. For the countries in figure 4.10 the difference is particularly large for Costa Rica, Peru and Singapore. In Latin America, while FDI as a proportion of GDP was higher on average in the 1990s than in the 1980s by more than 1.7 percentage points, the share of GFCF in GDP was lower by 0.6 of a percentage point. In all major Latin American countries (Argentina, Brazil, Colombia and Mexico), FDI as a proportion of GDP rose between these two periods while GFCF stagnated or fell. The only notable exceptions were Chile, where a

sharp increase in FDI inflows was associated with a similar increase in GFCF, and Bolivia, where the increase in GFCF was moderate compared to FDI.

This evidence clearly shows that whatever the direct or indirect impact of FDI on domestic capital formation may have been, the conditions that attracted foreign enterprises to these countries were not conducive to faster capital formation, and that the two sets of investment decisions can be driven by very different motivations. The picture is only slightly better when FDI inflows are compared with private investment alone. In a number of countries such as Brazil, Paraguay and Venezuela, private investment fell while FDI increased, and in most other Latin American countries, including Argentina and Colombia, the increase in FDI as a proportion of GDP was far higher than the increase in private GFCF. By contrast, in none of the rapidly growing East Asian NIEs was rising FDI associated with falling domestic GFCF, the only exception being the Philippines.

The conditions that attracted foreign enterprises to Latin America were not conducive to faster capital formation.

These observations are consistent with the findings of various econometric studies on the link between FDI and accumulation and growth. Indeed a number of studies have established that FDI is not an independent accelerator of economic growth (Carkovic and Levine, 2002), and that its positive growth-effects are contingent on other variables which are endogenous to the growth process (Blomstrom et al., 1992; Borensztein et al., 1998; and Alfaro et al., 2001). A recent study of 32 developing countries for the period 1970–1996 found that the evidence of crowding out was strongest in Latin America, whereas Asia exhibited stronger crowding in, and Africa was neutral (Agosin and Mayer, 2000). In a more comprehensive study of 98 developing countries covering the period 1980–1999, a significant relationship between FDI and domestic investment was detected in 52 countries: 29 experienced net crowding out and 23 experienced crowding in, with Latin American countries again most vulnerable to crowding out (Kumar and Pradhan, 2002).

Particularly in countries where domestic private investment has been weak and dependent on foreign capital flows, attracting FDI is seen as a stabilizing factor. The belief that FDI responds to longer-term economic fundamentals, and the fact that FDI has held up strongly after the Asian financial crisis, are often cited as evidence of this stabilizing role. However, empirical evidence on the volatility of FDI flows vis-à-vis other forms of private capital flows is not conclusive. For instance, at the time of the East Asian financial crisis, the Bank for International Settlements (BIS) noted that FDI was caught up in and added to an unstable investment pattern in the region based on less-than-solid risk-to-return characteristics (BIS, 1998: 35). Nor does this appear to be an altogether new feature of FDI. A recent review of the business cycle in 15 developing countries for the period 1970–1997 found that FDI inflows were a very volatile component of those cycles, and a good deal more so than either domestic investment or aid flows (Rand and Tarp, 2002). According to another study of 103 countries for the period 1980–1996, portfolio investment was only slightly more volatile than FDI, and among 85 emerging market countries over the same period the levels of volatility were actually equal.[19] Indeed the similarity between the volatility of FDI and portfolio flows is cited by the United States Government in its communication to the WTO as one of the reasons why a WTO framework for investment should also include portfolio investment.[20]

### *(c) The structure of investment*

Another factor which influences the impact of capital accumulation on economic growth is the structure of investment. In this respect, investment in machinery and equipment has been shown to be key to sustained growth. A positive relation between machinery investment and growth appears to hold across all developing regions (De Long and Summers, 1993).[21] Such investment often embodies new technologies and carries strong ties to research and development activity and the size and quality of the human capital stock. Determin-

ing causality among these elements of a strong accumulation process is likely to be difficult, and it is probable that their relative strength will change across sectors and over time. Nevertheless, investment in all these areas will be essential for sustained growth in productivity performance (Temple and Voth, 1998).

By contrast, residential construction, which in essence is a durable good, although classified as investment, is carried out by households rather than firms, and responds to a different set of pressures than those linked to the expansion of productive capacity. While investment in machinery and equipment often plays an independent role in the growth process, residential construction usually follows increases in income levels. However, speculative pressures can influence the pace of housing (and other commercial) construction, delaying or crowding out productive investment projects by distorting profit expectations (Hirschman, 1958: 20) or by encouraging luxury consumption. While there are also episodes of overinvestment in machinery and equipment – as was observed, for instance, in the recent United States investment surge in information technology products – investment bubbles are more common in property markets.

A common feature of weak investment regimes in many developing countries in the 1980s was a shift in the structure of investment in favour of residential construction, reflecting a diminished expectation of profits in more productive activities during and immediately after the debt crisis, particularly in the tradeable goods sectors. In some cases, that share of residential construction reached between 25 and 40 per cent of GFCF. The trend was less apparent in those countries that were able to maintain a resilient investment performance. However, strong investment recovery in a number of countries in the second half of the 1980s contained a significant housing component, notably in the Republic of Korea and Thailand, peaking in both cases at close to 25 per cent of GFCF in the early 1990s (fig. 4.11). However, construction was no more pronounced than other components of investment, which also expanded rapidly in response to mounting competitive pressures in a more liberal policy environment characterized by excessive capital inflows (*TDR 2000*). In Latin America, residential construction as a share of GFCF stayed at relatively low levels in Bolivia, Chile, Colombia and Costa Rica in the 1980s (table 4.2), and only in Chile and Costa Rica did this occur in the context of a rising share of GFCF in GDP in the second half of the decade. In several countries where investment recovery was delayed until the 1990s, the share of residential construction remained high or rose further especially in Latin America (with the exception of Chile, Costa Rica and Bolivia). It was particularly pronounced in Argentina, where the share of residential construction rose steadily to reach an average of 45 per cent of GFCF in 1996–1998.

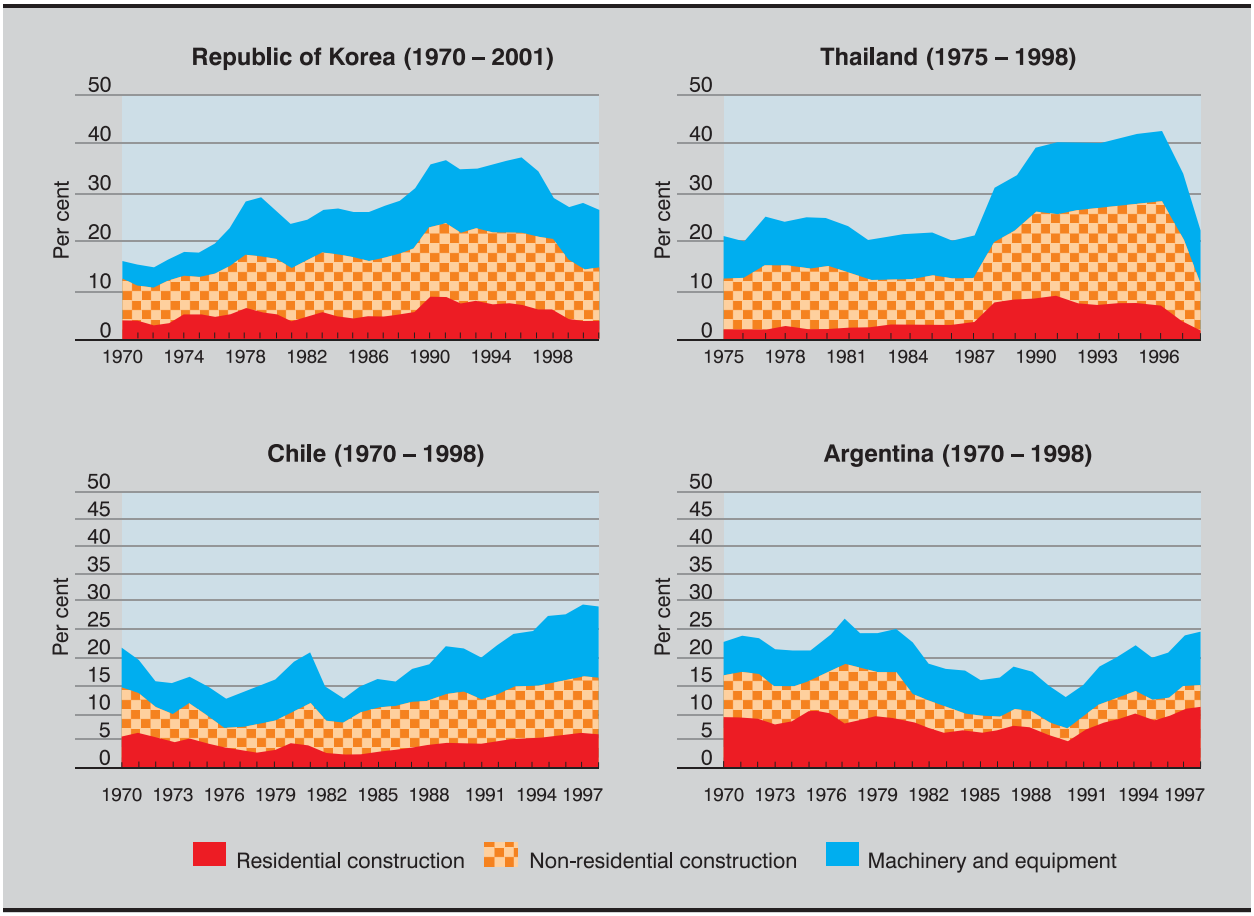
A common feature of weak investment regimes in the 1980s was a shift in the structure of investment in favour of residential construction, reflecting a diminished expectation of profits in more productive activities.

The combination of a rising share of investment in machinery and equipment along with expanding non-residential construction, particularly in physical infrastructure (much of which is likely to be in the public sector), would seem to be a defining feature of a strong investment performance in developing countries. Investment patterns in the Republic of Korea and Taiwan Province of China typify these mutually supportive trends. Over the past three decades, in only three years in the early 1970s has residential construction in the Republic of Korea exceeded investment in machinery and equipment as a percentage of GDP, and not at all in Taiwan Province of China. Taking the average figure for each of the last three decades, there has been a clear rising trend in investment in machinery and equipment, fluctuating annually between one-third and one-half of GFCF throughout the period. In particular, in both countries, a strong recovery in private investment after the debt crisis was accompanied by a sharp increase in investment in machinery and equipment. Following the brief construction boom of the late 1980s in the Republic of Korea, there was again a shift in favour of investment in machinery and equipment during the 1990s (fig. 4.11).

***Figure 4.11***

**STRUCTURE OF INVESTMENT IN SELECTED DEVELOPING COUNTRIES SINCE THE 1970s**

*(Per cent of GDP)*




***Source:*** National sources; and Moguillansky and Bielschowsky, 2001.

Moreover, there appears to have been a close relationship between investment in machinery and equipment and in non-residential building in the Republic of Korea over the past three decades. A similar pattern holds for Taiwan Province of China, where there appears to have been a balanced structure of investment since the 1980s, led by robust investment in machinery and equipment that accounted for an ever-increasing share of GFCF during the 1990s. The pronounced increase in the share of investment in the second-tier NIEs in the 1990s contained a steadily rising share of investment in machinery and equipment, consistently above one-third of GFCF, although some of these countries, notably Indonesia and Thailand, went through a construction bubble before the 1997–1998 crisis.

In countries that saw a declining share of investment in GDP in the 1980s, the share of investment in machinery and equipment also declined, with sharp falls experienced in Bolivia, Chile, Mexico and Peru. Such investment recovered subsequently, beginning in the mid-1980s in Chile, and somewhat later in Mexico (with an interruption in the mid-1990s). In Brazil, both aggregate fixed capital formation and investment in machinery and equipment remained weak until

**Table 4.2**

**STRUCTURE OF INVESTMENT IN SELECTED LATIN AMERICAN COUNTRIES, 1979–1998**

*(Percentage share in total gross fixed investment)*

| | 1979–1981 | 1982–1985 | 1986–1990 | 1991–1995 | 1996–1998 |
|---|---|---|---|---|---|
| | | | *Machinery and equipment* | | |
| Argentina | 34.5 | 41.5 | 44.9 | 39.2 | 39.2 |
| Bolivia | 55.3 | 44.7 | 41.8 | 47.7 | 53.5 |
| Brazil | 37.1 | 30.3 | 31.6 | 31.2 | 37.3 |
| Chile | 46.7 | 34.8 | 35.4 | 41.1 | 44.8 |
| Colombia | 46.0 | 41.7 | 43.2 | 50.0 | 52.2 |
| Costa Rica | 44.2 | 41.5 | 50.0 | 54.9 | 55.1 |
| Mexico | 43.9 | 35.9 | 38.9 | 46.0 | 48.2 |
| Peru | 45.2 | 38.1 | 26.3 | 21.1 | 21.0 |
| | | | *Residential construction* | | |
| Argentina | 36.8 | 38.6 | 39.9 | 44.6 | 45.0 |
| Bolivia | 15.0 | 15.0 | 15.1 | 15.5 | 14.3 |
| Brazil | 22.3 | 26.9 | 26.7 | 26.8 | 24.4 |
| Chile | 21.0 | 18.5 | 20.2 | 21.1 | 20.9 |
| Colombia | 14.2 | 15.7 | 17.2 | 20.7 | 20.7 |
| Costa Rica | 14.3 | 13.7 | 13.9 | 10.7 | 11.6 |
| Mexico | 18.1 | 24.9 | 29.3 | 28.7 | 28.7 |
| Peru | 27.1 | 30.2 | 32.7 | 33.6 | 34.4 |
| | | | *Non-residential construction* | | |
| Argentina | 28.8 | 19.9 | 15.1 | 16.2 | 15.8 |
| Bolivia | 29.6 | 40.2 | 42.8 | 36.7 | 32.2 |
| Brazil | 40.6 | 42.9 | 41.7 | 41.9 | 38.2 |
| Chile | 32.3 | 46.6 | 44.4 | 37.8 | 34.2 |
| Colombia | 39.8 | 42.5 | 39.6 | 29.3 | 27.1 |
| Costa Rica | 41.4 | 44.8 | 36.1 | 34.4 | 33.3 |
| Mexico | 38.0 | 39.2 | 31.8 | 25.2 | 23.0 |
| Peru | 27.7 | 31.7 | 40.9 | 45.5 | 45.3 |

***Source:*** UNCTAD secretariat calculations, based on Moguillansky and Bielschowsky, 2001.

the second half of the 1990s. However, in most of these cases, early peaks were not matched, and the improvement in productivity brought about through an intense cycle of labour-shedding and investment in new capital equipment did not continue into a strong and sustained investment recovery. One sign of this trend was the weak response of non-residential construction to the growth recovery in Latin America in the first half of the 1990s (table 4.2), suggesting a reluctance to broaden productive capacity. The notable exception to this was Chile, where the share of machinery and equipment in total fixed capital formation rose steadily from 35 per cent in the mid-1980s to 45 per cent by the late 1990s, reaching about 13 per cent of GDP. This followed a strong rise in non-residential construction in the mid-1980s, which persisted into the 1990s.

A more detailed analysis of this component of investment, although desirable, is limited by lack of data. However, a more comprehensive pic-

***Table 4.3***

**GROWTH OF IMPORTS OF MACHINERY AND COMPONENTS OF ELECTRICAL AND ELECTRONIC GOODS IN 26 DEVELOPING ECONOMIES, 1970–2001**

*(Per cent)*

| | *Growth of machinery imports* | | | *Growth of imports of parts and components of electrical and electronic goods* | | | ***Memo item:*** *Share of machinery imports in GDP* | | |
|---|---|---|---|---|---|---|---|---|---|
| | *1970–1979* | *1980–1989* | *1990–2001* | *1970–1979* | *1980–1989* | *1990–2001* | *1970–1979* | *1980–1989* | *1990–2001* |
| Argentina | 9.5 | -10.4 | 8.4 | 10.5 | -10.1 | 10.3 | 1.4 | 1.5 | 1.4 |
| Bolivia | 24.2 | -9.9 | 5.5 | 30.5 | -5.4 | 9.4 | 5.3 | 2.8 | 2.9 |
| Brazil | 3.0 | 0.7 | 13.1 | 8.7 | 6.6 | 14.6 | 1.9 | 1.0 | 1.6 |
| Chile | 8.1 | 12.2 | 3.9 | 9.3 | 12.7 | 9.4 | 2.5 | 3.3 | 4.3 |
| China | 26.9 | 24.7 | 10.6 | 39.0 | 34.2 | 21.2 | 0.4 | 1.7 | 2.8 |
| Colombia | 4.8 | 1.9 | -1.0 | 3.8 | 5.4 | 0.9 | 2.8 | 2.7 | 2.8 |
| Côte d'Ivoire | 12.3 | -4.8 | 10.5 | 14.1 | -2.4 | 14.1 | 4.9 | 3.6 | 4.1 |
| Ecuador | 15.4 | 2.7 | 0.8 | 18.2 | 11.2 | 3.2 | 3.6 | 2.8 | 5.5 |
| Egypt | 43.5 | -1.5 | -0.5 | 41.1 | 5.5 | -0.7 | 4.5 | 7.7 | 5.2 |
| Ghana | 8.2 | 5.0 | 8.2 | 5.7 | 8.6 | 12.5 | 0.6 | 1.1 | 1.4 |
| India | 8.2 | 10.8 | 5.8 | 8.2 | 21.3 | 9.2 | 3.0 | 2.6 | 4.0 |
| Indonesia | 7.3 | 6.4 | 0.9 | 11.8 | 8.7 | 12.1 | 4.8 | 2.8 | 3.0 |
| Kenya | 8.4 | 6.9 | -2.9 | 9.9 | 11.2 | -1.7 | 4.5 | 4.0 | 4.3 |
| Malaysia | 9.2 | 4.2 | 6.6 | 35.7 | 11.2 | 12.9 | 4.4 | 5.4 | 10.8 |
| Mexico | 10.5 | 9.1 | 7.4 | 8.1 | 19.2 | 12.0 | 2.5 | 3.4 | 5.5 |
| Morocco | 15.8 | 3.5 | 3.0 | 23.7 | 10.7 | 10.4 | 3.8 | 3.9 | 4.6 |
| Nigeria | 17.5 | 0.1 | -2.0 | 27.2 | -0.4 | 0.7 | 3.4 | 4.4 | 4.5 |
| Pakistan | 16.9 | 10.5 | -4.6 | .. | 13.5 | -4.2 | 2.6 | 2.8 | 2.6 |
| Peru | 8.2 | -3.7 | 6.5 | 7.7 | 2.5 | 12.6 | 2.7 | 2.8 | 2.1 |
| Philippines | 6.8 | -2.6 | 9.9 | 18.7 | 4.4 | 20.9 | 4.3 | 3.0 | 6.8 |
| Republic of Korea | 14.6 | 12.2 | 4.4 | 17.2 | 13.5 | 13.3 | 5.3 | 5.3 | 4.9 |
| Taiwan Province of China | 8.8 | 7.5 | 9.0 | 11.9 | 13.5 | 10.4 | 7.3 | 6.5 | 6.6 |
| Thailand | 6.2 | 12.6 | 3.0 | 13.3 | 16.3 | 13.2 | 3.5 | 3.7 | 7.1 |
| Turkey | 4.9 | 12.1 | 9.4 | 1.9 | 24.2 | 16.2 | 2.0 | 2.6 | 3.9 |
| Uruguay | 12.3 | -1.0 | 6.2 | 13.3 | 11.6 | -1.2 | 1.5 | 1.5 | 2.0 |
| Venezuela | 10.6 | 6.5 | -3.6 | -0.1 | 8.2 | 11.1 | 4.3 | 3.7 | 4.2 |

***Source:*** UNCTAD database; and UN/DESA, *Commodity Trade Statistics* database.

***Note:*** Growth rates are based on imports in constant 1995 dollars. Machinery excludes transport equipment; it includes SITC Rev. 2 groups 71–77 (less 759, 76, 775 and 776). Parts and components of electrical and electronic goods include SITC Rev. 2 groups 759, 764, 772 and 776.

ture emerges from an examination of trends in imports, which constitute an important element of machinery and equipment investment in most developing countries. The growth rate of machinery imports consistently exceeded that of total imports by developing countries in each of the past three decades. Even so, the rate of growth of machinery imports was lower in most countries during the 1990s than during the 1970s. In the 1980s, such imports were hit particularly hard in Latin America (except Chile) and some African economies, but remained buoyant in East Asia and Turkey (table 4.3). The table also shows the rapid rate of growth of parts and components of electrical and electronic goods in the imports of developing countries. As discussed in *TDR 2002*, this is related to the increased participation of developing countries in international production networks. Indeed, for half the sample, growth rates of such imports were higher in the 1990s than in the 1970s.

In only 10 countries out of 26 was the ratio of machinery imports to GDP from developed countries on average higher in both the 1980s and 1990s compared with the 1970s, and in another 3 countries it was higher in the 1990s than in the 1970s. The ratio registered a sizeable increase in Chile and Ghana, although in the latter from a very low starting level (in both cases the declining share of manufacturing in total output suggests that this higher ratio was linked to primary sector activities). The ratio also grew strongly in China, Malaysia, Mexico, Thailand and Turkey. This group includes those countries that are actively participating in international production networks, which suggests that their inclusion in such networks is associated with sizeable imports of machinery in addition to imports of parts and components. By contrast, in both the 1980s and 1990s, the ratio remained unchanged or fell short of its 1970s' average in a number of Latin American countries, including Argentina and Brazil, as well as the Republic of Korea. While in the former countries the decline was associated with sluggish investment in machinery and equipment, in the Republic of Korea it reflected the rapid development of domestic production of machinery and equipment.

## D. Conclusions

In the discussions above, capital accumulation regimes have been described in terms of the level, stability and composition of investment. For most developing countries at the early stages of industrialization, a good investment regime is characterized by a rising trend in the share of investment in income. This is sustained through certain key threshold levels, along with a balance between public and private investment. In terms of composition, there is a bias towards a set of mutually supportive components, centred around investment in machinery and equipment, which deepens productive capacities and supports faster productivity growth within a manageable degree of instability. Inevitably this regime reflects strong country-specific factors, where policy variables have a critical bearing on the outcome. However, some broad patterns are discernible:

- The "investment pause" that followed the debt crisis of the early 1980s has become a much more permanent feature of the economic landscape in many developing countries. Recoveries that have taken place, particularly in Africa and Latin America, have been weak and have failed to match earlier performances, leaving many countries below the thresholds needed for strong and sustained growth. By contrast, East Asian economies appear to best typify dynamic investment performance in terms of level, stability and composition.

- Weak overall levels of investment appear to have been associated with a falling share of public investment in GDP, which, in most cases, failed to crowd in private investment, except by bringing in FDI through privatization, notably in Latin America.

- A strong relationship between the ratio of machinery imports to GDP and a rising ratio of investment to GDP constitute an integral part of a virtuous investment dynamic in most East Asian countries. By contrast, weak recoveries in Latin America have often been associated with stronger performances in less productive categories of the accumulation dynamic, such as housing construction, along

with a sharp decline in public investment in infrastructure.

- The contrast between Asian and Latin American investment regimes is also evident regarding the link between FDI and domestic capital accumulation. In both regions, recent periods have seen a significant increase in inflows of FDI. However, while in Asia this has been associated with a rising share of investment in GDP and increased investment in machinery and equipment, in Latin American countries, there has been little or no improvement in the level or the composition of investment. In fact, in most countries in that region, the investment ratio fell while FDI increased.

These findings raise serious questions about the strategies adopted in a number of developing countries for activating a dynamic process of capital accumulation and growth through a combination of increased FDI and reduced public investment and policy intervention. ■

These findings raise serious questions about the strategies adopted in a number of developing countries for activating a dynamic process of capital accumulation and growth through a combination of increased FDI and reduced public investment and policy intervention.

# Notes

1 The former group consists of Hong Kong (China), the Republic of Korea, Singapore and Taiwan Province of China, while the latter group comprises Indonesia, Malaysia, the Philippines and Thailand.

2 Between 1960 and 1997, the first-tier NIEs together registered only five episodes of negative annual growth, and the second-tier NIEs only eight such episodes.

3 In Africa, Botswana and Mauritius had the most successful growth record, the former experiencing sustained growth for over four decades. Two other island economies, Cape Verde and the Seychelles also saw faster growth in the period after 1973 compared with the two decades before (Maddison, 2001, table A4d).

4 There is a rich body of empirical literature on the determinants of growth using cross-country regression analysis. A recent review identified well over 100 economic, structural, sociological, geographical and historical variables which have been fed into growth equations (see Kenny and Williams, 2001). Most of the variables introduced in order to explain the growth residual after accounting for factor accumulation have been familiar since growth became an explicit goal for development policy in the 1950s (for example, Lewis, 1955; and Hirschman, 1958). However, such exercises suffer from serious methodological limitations (Mankiw, 1995: 307–308; Ros, 2000; Kenny and Williams, 2001; and Reati, 2001).

5 See, for example, Stern, 2001; and World Bank, 2003. This reintroduction of investment into the mainstream does not, however, imply a fundamental departure from the earlier focus on market-driven efficiency: "The word 'investment' in our title will evoke memories – in some – of the development philosophies of the 1950s and the 1960s, when the emphasis was on growth through capital accumulation. There was a mistrust of the private sector and little mention of entrepreneurship or social inclusion. Thus, development assistance was seen primarily as the transfer of capital to the countries recently emerging from colonialism and aspiring to join the ranks of industrialized countries. Since those early days of development economics, I hope we have learned much." (Stern, 2001: 2)

6 While some explanations of the East Asian financial crisis of 1997–1998 contend that the crisis-affected countries, including the Republic of Korea, suffered from poor competitive environments that resulted in overinvestment (World Bank, 2000), these explanations are widely challenged (Akyüz, 2000; Stiglitz, 2002).

7 For a discussion of the accumulation-concentration ratio, see *TDR 1997*: 164–166.

8 It is important not to confuse this policy approach with the more limited notion of "picking winners", to which it is sometimes reduced. For a further discussion of the range of policies used in the East Asian context, see *TDR 1994*, *1996* and *1997*; Amsden, 1993; Felix, 1994; Singh, 1995; Sen, 1996; Kwon, 1998; and Rasiah, 1998.

9 Many of these institutional features, which had been considered among the factors contributing to the "Asian miracle", were subsequently held responsible for the crisis in that region, including a robust network of government and business institutions, concentration of ownership in the hands of inside investors, an internal capital market organized within banks and firms, and high corporate leverage. In fact a major reason for the sharp deterioration in the performance of such institutional arrangements in East Asia was the dismantling of checks and balances needed for the efficient functioning of such arrangements. The break with past practice was notable in two crucial areas: control over external borrowing and State guidance of private investment. For a discussion of these issues, see Akyüz, 2000.

10 The countries in the Baker Initiative were Argentina, Bolivia, Brazil, Chile, Colombia, Côte d'Ivoire,

Ecuador, Mexico, Morocco, Nigeria, Peru, the Philippines, Uruguay, Venezuela and Yugoslavia. The Initiative, announced in October 1985, promised a sustained injection of external capital from both commercial and multilateral sources in return for the adoption of market-friendly reforms (*TDR 1988*, Part One, chap. IV).

11 Differing results have been reported for the impact of aid flows on investment. Hadjimichael et al. (1996) have reported a non-linear and negative effect of foreign assistance on private investment for a sample of sub-Saharan African countries between 1986 and 1992; Hansen and Tarp (2001) report a positive impact of aid on gross domestic investment for varying samples of developing countries.

12 In this exercise, a successful growth episode is defined as an uninterrupted period of 10 years or more, during which time the 5-year average of annual growth exceeds 3.5 per cent.

13 On the Korean response to the debt crisis, see Amsden and Euh, 1990; Chang and Yoo, 2002; and Kim Mahn Je, 1987: 529.

14 Social conflicts were kept in check, thanks partly to a more equitable distribution of the burden of adjustment; controls were maintained over the financial sector and real wages were able to recover without threatening exports, thanks to their robust investment performance and strong productivity growth. For further details, see Taylor, 1987; and Van der Hoeven, 2000.

15 On investment cycles in advanced countries, see *TDR 2001*, chap. I, and in East Asia, see *TDR 2000*, chap. IV.

16 The literature on FDI and development is even more extensive and inconclusive than that on public investment and development. For further discussion see *TDR 1996*, *1997* and *1999*; Milberg, 1999; and Hanson, 2001.

17 For a discussion of the impact of the recent merger-and-acquisition wave on developing countries, see Singh, 2002.

18 The firm-level evidence of spillovers is inconclusive (see Greenaway and Görg, 2001; Aitken and Harrison, 1999; and Kumar and Pradhan, 2002).

19 Cited in Communication from the United States to the WTO Working Group on the Relationship between Trade and Investment, 16 September 2002, para. 14.

20 Ibid.

21 Sala-i-Martin (1997) also finds a more robust impact on growth from equipment investment than from non-equipment investment. A recent study of equipment investment in 55 African countries for the period 1965–1990 also reported a positive impact of machinery equipment investment on economic growth (Jalilian and Odedukun, 2000). For a review of the literature discussing the importance of machinery and equipment imports in relation to the international diffusion of technology and, through this, to faster economic growth, see Keller, 2001.

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