



III

The Asian Crisis and the Region's Long-Term Growth Performance

Over the past three decades, the economies of east Asia made remarkable economic progress. Following on the heels of Japan's double-digit growth in the 1960s, Korea, Taiwan Province of China, Hong Kong SAR, and Singapore grew at very rapid rates from the mid-1960s, with their per capita incomes rising to match those in a number of advanced economies in western Europe. They were followed in the 1980s and the 1990s by the southeast Asian economies (especially Indonesia, Malaysia, and Thailand), which then also grew exceptionally fast. All these countries experienced sustained economic growth at rates that exceeded those earlier thought achievable, with some attaining growth of 8–10 percent a year for a decade.¹ The rapid growth of the east Asian economies was accompanied by impressive advances in social development: poverty, infant mortality, and adult illiteracy all declined significantly, while life expectancy at birth rose considerably. Also, and again contrary to earlier conventional wisdom,² rapid economic growth was achieved without increases in income inequality.³

Since mid-1997, however, a number of southeast Asian economies and Korea have been in the grip of severe financial crises that have thrown the region into a deep recession, while economic activity in Japan, after languishing since the bursting of the asset price bubble in 1990, has also contracted fairly sharply since spring 1997. The severity of the "Asian crisis" has raised questions about both the durability of the region's rapid growth and the factors that underlay it.⁴ Does the crisis indeed mark the end of the rapid growth that characterized the east Asian economies in

recent decades? Or will the east Asian economies regain their dynamism and resume rapid growth—even if not as rapid as in the past—as they did following the financial crises they experienced in the 1970s and 1980s? And what is required to build the basis for sustained recovery and growth?

To address these issues, this chapter revisits the east Asian growth experience, with a view to identifying both the strengths of the region's development strategy and weaknesses that may have been overlooked and that might have led to slower growth, even in the absence of the financial crisis. This will help a judgment to be reached about whether the recent problems reflect mainly short-term financial and macroeconomic imbalances that will dissipate within a relatively short period, provided that the financial crisis is appropriately dealt with, rather than more fundamental problems.

Sources of East Asia's Growth

Although no uniform model of development was applied throughout east Asia, central to the performance of the successful east Asian economies was an emphasis on stability-oriented macroeconomic policies, among the aims of which were relatively low inflation and the avoidance of overvalued exchange rates; high rates of physical and human capital accumulation; and export-oriented production, which, among other things, encouraged the adoption of advanced technology. Favorable initial conditions also played a part.⁵ More differentiated across countries, and more controversial in their effects, were industrial policies and government intervention (particularly in financial markets) aimed at mobilizing and allocating savings.

The sources of east Asia's rapid and sustained economic growth have been the focus of extensive research. Central to much of this research have been at-

¹For instance, Hollis B. Chenery and Alan Strout, "Foreign Assistance and Economic Development," *American Economic Review*, Vol. 56 (September 1966), pp. 679–733, suggested that the maximum achievable rate of growth was between 6 and 8 percent.

²Simon Kuznets, "Economic Growth and Income Inequality," *American Economic Review*, Vol. 45 (March 1955), pp. 1–28.

³There is evidence, however, that in recent years inequality has been on the rise in some economies, particularly Thailand and China; see Michael Walton, "The Maturation of the East Asian Miracle," *Finance & Development*, Vol. 34 (September 1997), pp. 7–10.

⁴The key factors that contributed to the crisis have been discussed in detail in the December 1997 *World Economic Outlook: Interim Assessment* and the May 1998 *World Economic Outlook*. The capital market dynamics and spillover of the crisis are discussed in IMF, *International Capital Markets: Developments, Prospects, and Policy Issues* (Washington, 1998, forthcoming).

⁵Initial conditions were particularly favorable in east Asia: educational systems were relatively strong; inequalities in the distribution of income and wealth (and) were less marked than in developing countries in other regions; dependency ratios were low; and initial income levels were low, so that there was considerable scope for catch-up. See Dani Rodrik, "King Kong Meets Godzilla: The World Bank and the East Asian Miracle," in Albert Fishow and others, *Miracle or Design? Lessons from the East Asian Experience*, Policy Essay II (Washington: Overseas Development Council, 1994).

tempts to measure the relative contributions that factor inputs—physical and human capital—and technological progress made to the persistently high rates of growth. A commonly used approach has been to deduct from growth in output per worker a weighted average of the accumulation of physical and human capital per worker, and to interpret the residual as total factor productivity (TFP) growth—the increase in productivity brought about by technological advances and greater organizational efficiency.⁶

Empirical estimates of the contributions of factor inputs and TFP growth to east Asian economies' output growth fall in a wide range, with capital accumulation generally found to have made the largest contribution. Productivity growth is found to have made smaller but still significant contributions.⁷ Thus, one recent study found that during 1960–94 in all four of the Asian newly industrialized economies and the three fast-growing ASEAN economies—Indonesia, Malaysia, and Thailand—the contribution of capital per worker dominated growth in factor productivity in explaining growth in output per worker (Table 3.1). Since the early 1980s, however, TFP growth appears to have played a larger role. For instance, in Singapore, TFP growth was around 1 percent a year during the periods 1960–73 and 1973–84, respectively, but rose to over 3 percent a year during 1984–94. Similarly, in Thailand, TFP growth was 1¼ percent a year during 1960–84, but rose to 3¼ percent a year in the subsequent ten years. These results may be compared with the experience of the industrial countries during 1960–94: although rates of growth in output per worker in the east Asian economies (except for the Philippines) were significantly higher than in the industrial countries, the contributions of TFP growth were markedly higher only in a few cases—China, Taiwan Province of China, and Thailand—despite the Asian economies' lower initial levels of technological development. Compared with the TFP growth of European economies and Japan during their fast catch-up years in the 1950s and 1960s, however, TFP growth in the east Asian economies has been much less rapid.⁸ However, no other group of developing countries has done as well as the east Asian economies.

Even though there is broad agreement on the dominant role played by resource accumulation in accounting for east Asia's superior growth experience, the relative importance of productivity growth remains

contentious (Table 3.2).⁹ The differences in estimates of the contribution of productivity growth are important, not only because they suggest different explanations for east Asia's past success, but because of their different implications for the long-term future prospects of the region. Thus, those who hold that most of the region's growth was due to capital accumulation, with productivity growth contributing little, tend to regard a growth slowdown as inevitable, as diminishing returns to capital set in. Future growth prospects will thus depend critically on structural changes that enhance the role of technological and efficiency gains.¹⁰ In contrast, for those who consider that productivity growth has made a relatively greater contribution, deceleration in economic growth may also be inevitable as a result of technological catch-up, but it should be possible to sustain relatively high rates of growth at lower rates of factor accumulation.

Taking into consideration international differences in productivity levels, there does appear to be abundant opportunity for further technological catch-up in the east Asian economies. Real output per worker in Korea, one of the most advanced of the east Asian economies, is only about one-half of the level in the United States, and labor productivity in most other east Asian economies represents smaller fractions of the U.S. level. Thus far, much of the catch-up in real GDP per capita in east Asia has occurred through increased capital intensity rather than growth in TFP, so that productivity gaps, although they have narrowed over time, remain wide. When differences in hours worked per worker are taken into account, the gaps in labor productivity between east Asia on the one hand and North America and Europe on the other are even larger.¹¹ In Korea, real GDP per hour worked was 46 percent of the U.S. level in 1996, while in Thailand and Indonesia it was 18 percent and 15 percent, respectively.¹²

Efficiency of Investment

Notwithstanding the east Asian economies' outstanding record of economic growth and their potential for continued productivity gains, the crisis has cast considerable doubt on their ability to sustain the very high rates of capital accumulation they experienced in

⁶Factor income shares typically have been used as weights in aggregating growth rates of factor inputs, reflecting the theoretical basis of the approach in the assumption of a "neoclassical" aggregate production function with marginal product factor payments.

⁷The exception is the Philippines, where, according to most estimates and time periods, productivity growth made little, or even a negative, contribution to output growth.

⁸See Nicholas Crafts, "East Asian Growth Before and After the Crisis," Working Paper 98/137 (Washington: IMF, October 1998).

⁹In part this is a result of differences in empirical methodologies and assumptions, and data deficiencies—see Box 9, "Measuring Productivity Gains in East Asian Economies," in the May 1997 *World Economic Outlook*, pp. 82–83, for a detailed analysis of the various reasons for the wide-ranging estimates and their implications.

¹⁰In the more advanced east Asian economies, such as Korea, there is also a need for the service sector to play a larger role.

¹¹Annual hours worked per worker in 1996 in the east Asian economies were between 15 percent and 30 percent higher than those in the United States, which, in turn, were substantially higher than those in Europe.

¹²Crafts, "East Asian Growth."

Table 3.1. Selected Economies: Sources of Economic Growth*(Contributions to average annual percent growth in output per worker)*

	1960–73	1973–84	1984–94	1960–94
Korea				
Output per worker	5.6	5.3	6.2	5.7
Capital per worker	3.2	3.4	3.3	3.3
Education per worker	0.9	0.8	0.6	0.8
Total factor productivity	1.4	1.1	2.1	1.5
Singapore				
Output per worker	5.9	4.3	6.0	5.4
Capital per worker	4.6	3.1	2.3	3.4
Education per worker	0.4	0.2	0.6	0.4
Total factor productivity	0.9	1.0	3.1	1.5
Taiwan Province of China				
Output per worker	6.8	4.9	5.6	5.8
Capital per worker	3.9	3.0	2.3	3.1
Education per worker	0.5	0.9	0.5	0.6
Total factor productivity	2.2	0.9	2.8	2.0
Indonesia				
Output per worker	2.5	4.3	3.7	3.4
Capital per worker	0.9	3.3	2.3	2.1
Education per worker	0.5	0.5	0.5	0.5
Total factor productivity	1.1	0.5	0.9	0.8
Malaysia				
Output per worker	4.0	3.6	3.8	3.8
Capital per worker	2.4	2.7	1.8	2.3
Education per worker	0.5	0.5	0.5	0.5
Total factor productivity	1.0	0.4	1.4	0.9
Philippines				
Output per worker	2.5	1.2	-0.3	1.3
Capital per worker	1.3	2.0	0.2	1.2
Education per worker	0.6	0.6	0.4	0.5
Total factor productivity	0.7	-1.3	-0.9	-0.4
Thailand				
Output per worker	4.8	3.6	6.9	5.0
Capital per worker	3.2	2.0	2.6	2.7
Education per worker	0.1	0.5	0.8	0.4
Total factor productivity	1.4	1.1	3.3	1.8
China				
Output per worker	2.2	4.3	8.0	4.5
Capital per worker	0.4	1.7	2.9	1.5
Education per worker	0.4	0.3	0.3	0.4
Total factor productivity	1.4	2.2	4.6	2.6
South Asia				
Output per worker	1.8	2.5	2.7	2.3
Capital per worker	1.4	0.9	1.0	1.1
Education per worker	0.3	0.4	0.3	0.3
Total factor productivity	0.1	1.2	1.5	0.8
Latin America				
Output per worker	3.4	0.4	0.1	1.5
Capital per worker	1.3	1.1	0.1	0.9
Education per worker	0.3	0.4	0.4	0.4
Total factor productivity	1.8	-1.1	-0.4	0.2
United States				
Output per worker	1.9	0.2	0.9	1.1
Capital per worker	0.5	0.3	0.3	0.4
Education per worker	0.6	0.5	—	0.4
Total factor productivity	0.8	-0.5	0.7	0.3
Other industrial countries				
Output per worker	4.8	1.8	1.7	2.9
Capital per worker	2.3	1.1	0.8	1.5
Education per worker	0.4	0.6	0.2	0.4
Total factor productivity	2.2	0.2	0.7	1.1

Source: Barry P. Bosworth and Susan M. Collins, "Economic Growth in East Asia: Accumulation Versus Assimilation," *Brookings Papers on Economic Activity*: 2 (1996), pp. 135–203.

Table 3.2. Selected East Asian Economies: Estimates of Total Factor Productivity Growth
(Percent a year)

	Period	Hong Kong SAR	Korea	Singapore	Taiwan Province of China	Indonesia	Malaysia	Philippines	Thailand
Young (1995)	1966–90	2.3	1.7	0.2	2.6				
Bosworth, Collins, and Chen (1995)	1960–80		0.7	0.3	1.3	1.0	0.7	0.5	1.1
Bosworth, Collins, and Chen (1995)	1986–92		1.9	4.0	2.5	0.8	2.8	—	4.0
Sarel (1996)	1975–90	3.8	3.1	1.9	3.5				
Sarel (1997)	1979–96			2.5		0.9	2.0	–0.9	2.0

Sources: Alwyn Young, “The Tyranny of Numbers: Confronting the Statistical Realities of the East Asian Growth Experience,” *Quarterly Journal of Economics*, Vol. 10 (August 1995), pp. 641–80; Barry P. Bosworth, Susan M. Collins, and Yu-chin Chen, “Accounting for Differences in Economic Growth,” *Brookings Discussion Papers in International Economics*, No. 115 (Washington: Brookings Institution, October 1995); Michael Sarel, *Growth in East Asia: What We Can and What We Cannot Infer*, Economic Issues, No. 1 (Washington: IMF, September 1996); and Michael Sarel, “Growth and Productivity in ASEAN Countries,” Working Paper 97/97 (Washington: IMF, August 1997).

recent years. Investment rates in Korea, Malaysia, and Thailand have been exceptionally high, at around 40 percent of GDP, in the 1990s. But there is a variety of evidence that suggests that in the east Asian economies the efficiency of investment has declined, partly because of their rapid rates of convergence toward the levels of per capita income of the advanced economies, but in some economies also partly owing to overinvestment.

It is difficult, of course, to determine whether a country is overinvesting. Several ways, each not without drawbacks, have been suggested in the economic literature to ascertain whether a country’s rate of investment is broadly appropriate. A commonly used method is to compare an economy’s real rate of return on domestic investment to its real rate of growth.¹³ If the return on investment is lower than the growth rate of the economy, then by reducing capital accumulation welfare will be enhanced: the consumption of both current and future generations can be increased. Such comparisons are difficult to make in practice, however, because it is not straightforward to measure the rate of return on investment for an economy as a whole. Moreover, returns on investment vary with the riskiness of projects.

One way of assessing the appropriateness of an economy’s rate of investment in the presence of risk and uncertainty is to compare gross investment with gross capital income (the sum of profit, rental income, and interest income). If investment consistently, over a number of years, exceeds capital income, then it may be argued that the economy is overinvesting: capital accumulation is absorbing more resources than all past accumulation is making available for consumption.¹⁴

¹³An early exposition is provided by Peter A. Diamond, “National Debt in a Neoclassical Growth Model,” *American Economic Review*, Vol. 55 (1965), pp. 1126–50.

¹⁴See Andrew B. Abel, N. Gregory Mankiw, Lawrence H. Summers, and Richard J. Zeckhauser, “Assessing Dynamic Efficiency: Theory and Evidence,” *Review of Economic Studies*, Vol. 56 (January 1989), pp. 1–20.

For the countries in crisis, data on capital income are readily available only for Korea. They show that, between the mid-1970s and mid-1990s, the share of total capital income in GDP fell substantially: from around 55 percent to less than 40 percent (Figure 3.1). The share of total investment in GDP, in contrast, rose from around 25 percent to about 40 percent.¹⁵ By 1996, the rate of investment was almost the same as the share of capital income. Although this is not conclusive evidence of overinvestment, it does suggest that the efficiency of investment in Korea was declining rapidly.

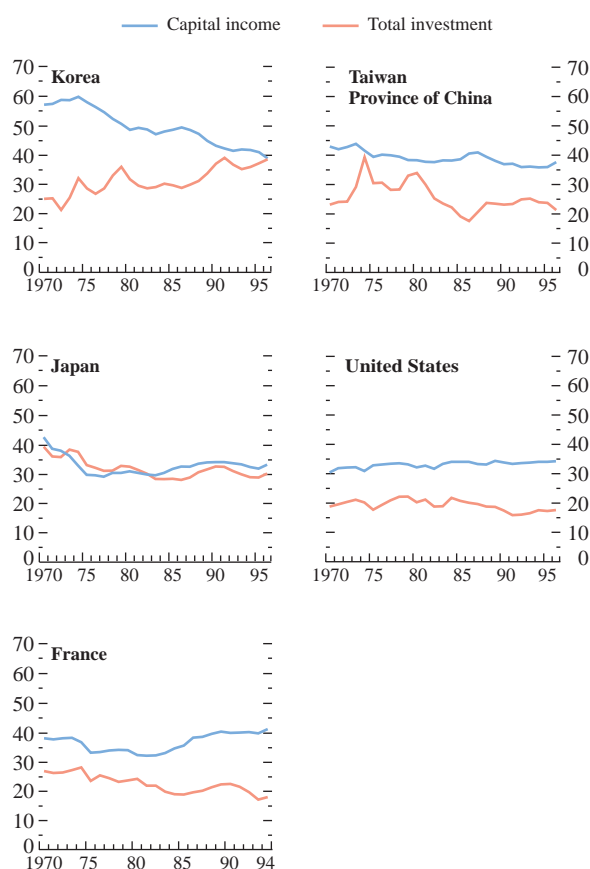
Another measure of changes in the efficiency of overall investment is provided by the incremental capital-output ratio (ICOR), which measures the ratio of investment in any period to the period’s change in output. A rising ICOR may be interpreted as indicating a declining output response to investment and, thus, a falling efficiency of investment. It could also indicate, however, that output is decelerating, relative to capital, for other reasons: for example, the economy may be shifting to a production structure with a higher capital intensity, which is a normal feature of industrialization.¹⁶ In almost all the crisis countries ICORs increased in the 1990s (Figure 3.2). In Korea and Thailand (and also in Hong Kong SAR), ICORs approximately doubled between 1990 and 1995, suggesting that investment became less efficient in generating growth. In Indonesia (and also Singapore), in contrast, ICORs remained roughly constant. The increase in ICORs in several of the east Asian economies

¹⁵By comparison, in the United States, capital income has increased slightly over the corresponding period to about one-third of GDP, while the investment rate has declined modestly to some 18 percent of GDP. Thus, in recent years, Korea’s investment rate was about double that of the United States for only a slightly higher share of capital income.

¹⁶Gross rather than net rates of investment are usually used to compute ICORs because of the differences across countries in the treatment of depreciation. Hence, increases in ICORs could also stem from a shift toward shorter lived capital equipment.

**Figure 3.1. Selected Economies:
Efficiency of Investment¹**
(Percent of GDP)

The efficiency of investment in Korea appears to have declined.



Sources: Korean National Statistical Office; Taiwan Province of China Directorate-General of Budget, Accounting, and Statistics; World Economic Outlook database; OECD database; and IMF staff estimates.

¹Given differences in the way the income of the self-employed is treated, cross-country comparisons of capital income have to be interpreted with care.

need not necessarily imply a declining efficiency of investment, however. As noted above, it could be an indication that these economies were shifting to a more capital-intensive production structure. In view of the similarities and close relationships between these economies in their production structures and trade, however, it does not appear plausible that Hong Kong SAR was moving to a more capital-intensive technology while Singapore was not, and that Thailand was upgrading its technology while Indonesia was not.

In recent years, in several of the east Asian economies increased portions of investment have been in nontraded or protected sectors—such as real estate or petrochemicals in Indonesia, Malaysia, and Thailand—that generated low returns, or in sectors with high or excess capacity—such as semiconductors, steel, ships, and automobiles in Korea—that also yielded low or even negative returns. In Thailand, for example, value added in the construction and real estate sector grew by over 11 percent annually in real terms between 1992 and 1996, rising from 12½ to 14 percent of GDP. During this period office vacancy rates increased, reaching 15 percent by the end of 1996. Similarly, in Indonesia the construction and real estate sector grew at over 13 percent annually between 1991 and 1996, rising from 9½ to 10½ percent of GDP, while in Malaysia, the construction sector grew by over 14 percent annually between 1993 and 1997.

In Korea, government policies, such as access to easy credit through directed lending, played an important role in allowing the chaebols (the large conglomerates) to pursue growth and market share, with inadequate attention to profitability. Although it could be argued that in the early years of industrialization these policies made a positive contribution to growth and profits—since Korean companies had only a small share of world production and labor costs were relatively low—in later years, and particularly by the 1990s, when Korean production accounted for significant shares of world production in industries such as semiconductors, steel, ships, and automobiles, profits fell as these industries increasingly suffered from excess capacity and intense competition worldwide. Despite the drop in profits, easy access to credit induced the chaebols to continue to invest and diversify away from core businesses into other industries, often also characterized by excess capacity. As a result, by 1996, the net profits of the 30 largest chaebols were close to zero, with six chaebols filing for bankruptcy in early 1997 before the beginning of the crisis.

In large part, investment in the crisis economies was financed by bank lending. As the returns from investment fell in these countries, the quality of bank asset portfolios declined as well. In Thailand, nonperforming loans of commercial banks reached almost 8 percent of total credit outstanding by mid-1996, and nonperforming loans of other financial institutions were even larger. By comparison, nonperforming loans in

the United States, using a more strict classification, were around 1 percent of total lending in 1996 and peaked at around 4 percent during the banking crisis of the 1980s.¹⁷ In Indonesia, classified loans accounted for over 10 percent of total loans in late 1996, and property lending had increased to about 20 percent of total lending. Exposure to the property sector was high also in Thailand and Malaysia, where it had reached about 18 percent and 25 percent of total lending, respectively.¹⁸ In Malaysia, although nonperforming loans had fallen substantially from a peak of over 35 percent in 1985 (following a banking crisis) to under 4 percent by 1997, banks were exposed by substantial lending for consumer credit and stock market investments, in addition to lending to the property sector. In Korea, commercial bank profitability, measured by returns on assets or equity, had declined substantially during the 1990s, falling to levels far below international standards by 1996.¹⁹ The role of government policies in contributing to the growing fragility of the financial system is discussed below.

Further research will be needed to throw light on the extent to which rates of return have been declining in east Asia. There are sufficient indications, nonetheless, to suggest that the high investment rates in recent years in a number of these economies were excessive.

The Role of Policies and Institutions in Fostering High Growth

As previously noted, central features of the high-growth east Asian economies included high rates of investment, saving, and human capital formation; exports having a leading role in the growth process; and stable macroeconomic conditions. Government policies and institutions played a large role in fostering these attributes. Financial sector policies, in particular, played an important role in mobilizing and allocating savings. In some cases, however, government intervention hindered financial market development and led to inefficient allocation of investment and other resources.

Resource Mobilization

Human capital formation advanced at a rapid pace, both quantitatively and qualitatively, in almost all the

¹⁷The levels of nonperforming loans are not strictly comparable across countries because of differences in classification procedures. Through 1996, the loan classification procedures in the Asian crisis economies generally did not meet international standards.

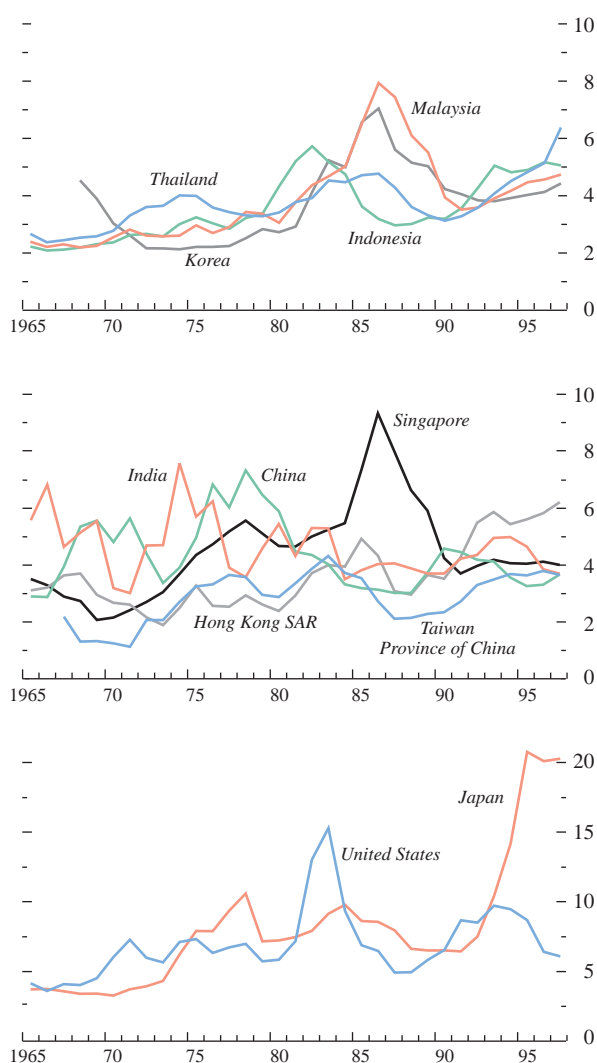
¹⁸See Amar Bhattacharya, Stijn Claessens, Swati Gosh, Leonardo Hernandez, and Pedro Alba, "Volatility and Contagion in a Financially Integrated World: Lessons from East Asia's Recent Experience" (unpublished; Washington: World Bank, May 1998).

¹⁹See Sung Kwack, "The Financial Crisis in Korea: Causes and Cure," Seminar Series, No. 1998-19 (Washington: IMF, June 1998).

**Figure 3.2. Selected Economies:
Incremental Capital-Output Ratios**

(Five-year moving average)

Incremental capital-output ratios have risen in several east Asian countries in recent years, possibly indicating declines in the efficiency of investment.



rapidly growing east Asian economies. As early as 1965, primary school enrollment rates were already higher in this region than in many other developing countries. Hong Kong SAR, Korea, the Philippines, and Singapore had achieved universal primary education, and even Indonesia—a populous nation and, at the time, one of the poorest developing countries—had a primary school enrollment rate of over 70 percent. In the past three decades further significant progress was achieved, except in Thailand. In Korea, secondary school enrollment increased from around 35 percent in 1965 to virtually 100 percent in 1995, while Indonesia's secondary school enrollment rate of close to 50 percent in 1995 was higher than in other countries with comparable levels of income. In Thailand, however, the secondary school enrollment rate of under 50 percent in 1995 was lower than that predicted by its income level on the basis of international data. Associated with this were serious shortages of skilled labor in Thailand in recent years, resulting in upward pressures on wages. Not only enrollment rates, but also the quality of education improved significantly during the past three decades in most of the east Asian economies, as average education expenditure per pupil rose and pupil-teacher ratios were reduced.²⁰

By raising the skill level of the workforce, education and training contribute directly to the expansion of an economy's productive capacity and growth potential. It is estimated that education accounts directly for about 10–15 percent of the growth in output per worker in the east Asian economies in the period 1960–94 (see Table 3.1).²¹ Human capital accumulation, however, also affects economic growth in indirect ways. Physical capital equipment and skill levels are often complementary, so that an increased availability of skilled labor may induce greater investment; conversely, as is the case in a number of developing countries, a paucity of skilled labor may deter certain types of investment.²² Moreover, empirical evidence indicates that, although foreign direct investment is an important vehicle for the transfer of technology to developing countries, the productivity of foreign direct investment is higher than that of domestic investment only when the host economy has a minimum of human capital.²³

²⁰For details see World Bank, *The East Asian Miracle: Economic Growth and Public Policy* (New York: Oxford University Press, 1993), pp. 43–45.

²¹Measured by the contribution of changes in the labor force's average years of schooling.

²²For evidence regarding capital-skill complementarity see Per Krusell, Lee E. Ohanian, Jose-Victor Rios-Rull, and Giovanni L. Violante, "Capital-Skill Complementarity and Inequality," Staff Report 239 (Minneapolis, Minnesota: Federal Reserve Bank of Minneapolis, September 1997).

²³See Eduardo Borensztein, Jose De Gregorio, and Jong-Wha Lee, "How Does Foreign Direct Investment Affect Economic Growth?" *Journal of International Economics*, Vol. 45 (June 1998), pp. 115–35.

Table 3.3. Selected Economies: Investment-GDP Ratios¹

(Percent)

	Averages			
	1960–69	1970–79	1980–89	1990–96
China ²	35	35	34	39
Hong Kong SAR	. . .	24	28	30
Indonesia ²	18	19	27	32
India ²	16	18	22	24
Japan	35	34	30	30
Korea	18	28	30	37
Malaysia ²	15	23	30	38
Philippines ²	19	25	23	23
Singapore ²	23	41	42	35
Taiwan Province of China ²	25	29	24	24
Thailand ²	22	25	28	41
Brazil ²	17	22	21	20
Chile	. . .	12	18	25
Mexico ²	17	22	22	22
Germany	26	23	20	22
Italy	. . .	26	23	19
Spain	. . .	24	22	22
United Kingdom	19	20	17	16
United States	21	20	20	17

¹Investment refers to gross fixed capital formation plus change in inventories.

²Data start in 1963.

East Asian economies began their takeoff to rapid growth with an edge over many other developing countries in human capital and maintained that edge through explicit policies of investment in education. But critical to their superior growth performance was their ability to supply their workforces consistently with rapidly increasing amounts of physical capital (Table 3.3). In Indonesia, Korea, Malaysia, and Thailand, gross fixed investment as a proportion of GDP rose steadily and markedly over the past three decades, to above 30 percent in the first case and close to 40 percent in the other three. The main exceptions are Hong Kong SAR and Taiwan Province of China, where investment was a fairly stable share of GDP throughout, close to one-fourth, and the Philippines, where investment rose from 19 percent of GDP in the 1960s to a steady level of around 23 percent in subsequent decades. Despite its lower rate of capital accumulation, Taiwan Province of China's growth performance has been as good as those of other east Asian economies.

Counterparts to the rapidly rising investment rates were, of course, rapidly rising saving rates and inflows of foreign capital. Several factors contributed to the rapid rise in domestic saving. Perhaps most important was the rapid pace of economic growth, which, by raising income levels above subsistence, led to higher aggregate saving rates. Rapid growth may have helped to raise overall saving also by increasing the incomes

of the working young at a disproportionately fast rate. The region's demographics, in particular its relatively low dependency ratios, were also conducive to high saving rates (Box 3.1).²⁴ The fruits of favorable economic policies—including a stable macroeconomic environment, especially low rates of inflation, positive real interest rates,²⁵ and a fast pace of financial deepening—are also likely to have had a strong positive influence on saving rates. In some countries, particularly Malaysia and Singapore, well-developed mandatory saving schemes have been in existence since the 1960s and 1970s, but their effects on overall rates of private saving have not been unambiguously determined.²⁶

The high rates of private saving have often been ascribed to exceptionally high propensities to save by east Asian households. Less noted has been the role of business saving, perhaps because few of these countries gather information on the components of total private saving on a regular basis, so that much of the data on business saving are fragmentary and derived indirectly.²⁷

Among the countries for which data are available, in Thailand, during the 1970s and 1980s, corporate saving accounted for almost 45 percent of total private saving and 8½ percent of GDP, on average. The share of corporate saving rose sharply during the late 1980s, to around 60 percent of total private saving and 13 percent of GDP. In Korea, corporate saving also played a significant role. Household saving was less than 3 percent of GDP in the 1950s and 1960s, on average, whereas corporate saving was close to 6 percent of GDP. The public sector accounted for more than 60 percent of total domestic saving. Over the years, however, both personal and corporate saving rose considerably: household saving increased to an average of 11 percent of GDP in the period 1974–79 and to 13 percent during 1990–95, while firms' retained earnings increased to 12½ percent and 14 percent of GDP in the corresponding periods (Table 3.4). With economic growth, corporate saving kept pace with household saving and in the 1990s still constituted 50 percent of

private saving. In contrast, in Singapore, partly reflecting the importance of the mandatory provident fund, where household contributions reached almost 15 percent of GDP in the mid-1980s, the share of corporate saving was smaller.

Compared with the advanced economies of Europe and North America, the shares of corporate saving in total private saving in the east Asian economies are not exceptionally high, but compared with the relatively less successful developing countries they are a larger source of saving, no doubt reflecting the relatively more stable macroeconomic performance and investment climate in east Asia. Nevertheless, retained earnings fell far short of the funds needed to finance business investment.²⁸ With private securities markets (bonds and equity) underdeveloped, especially until the early 1990s, corporations relied heavily on the banking system for financing (see below).

Reliance on foreign saving differed widely across countries. The newly industrialized economies, except Korea, were less dependent on foreign saving than the ASEAN-4, even in the early years of their development, and since the mid-1980s have posted current account surpluses. The composition of foreign saving also differed across countries. Some countries (Malaysia and Singapore) relied on direct and portfolio investment to finance domestic investment, while others (Korea and Thailand) depended largely on foreign borrowing (Table 3.5). In Korea, restrictive limits on foreign ownership along with capital controls influenced the composition of foreign funds, and until the 1990s direct and portfolio investment constituted a minor fraction of total foreign inflows. Liberalization of foreign ownership limits in the 1990s, however, led to a significant increase in foreign portfolio investment. By and large, external borrowing by the corporate sector, intermediated mainly through the banking system, was the main vehicle by which foreign funds were mobilized. One of the features of the current crisis, which distinguishes it from previous financial crises in the region, is the large size and critical role played by the corporate sector's foreign debt.

Financial Intermediation and the Role of the Financial Sector

Financial systems in east Asia, aided by favorable demographics and rapid growth, successfully encouraged domestic saving and until recent years for the most part allocated financial resources to investments that yielded significant returns. Financial intermediaries played the dominant role, particularly early in the development process; equity and bond markets were less important. East Asian governments intervened extensively in the financial sector, however, through reg-

²⁴See page 98. For further discussion of the theoretical and empirical relationship between growth and saving, see Anuradha Dayal-Gulati and Christian Thimann, "Saving in Southeast Asia and Latin America Compared: Searching for Policy Lessons," in John Hicklin, David Robinson, and Anoop Singh, eds., *Macroeconomic Issues Facing ASEAN Countries* (Washington: IMF, 1997), pp. 130–50.

²⁵Real interest rates, however, were negative over intermittent periods in some of the countries in the region. For example, in Korea during the early phase of its stabilization program in the 1980s, the real interest rate fell below –3 percent, implying a large transfer of real resources from creditors (especially households) to debtors (especially businesses).

²⁶See Dayal-Gulati and Thimann, "Saving in Southeast Asia and Latin America Compared"; and World Bank, *The East Asian Miracle*, pp. 219–20.

²⁷See for example, Patrick Honohan and Izak Atiyas, "Intersectoral Financial Flows in Developing Countries," *Economic Journal*, Vol. 103 (May 1993), pp. 666–79.

²⁸See Honohan and Atiyas, "Intersectoral Financial Flows in Developing Countries."

Table 3.4. Selected Economies: Composition of Private Saving*(Percent of GDP)*

	1970–74	1975–79	1980–84	1985–89	1990–96
Thailand					
Private saving	18	15	15	22	22
Household	14	11	10	10	9
Corporate	4	3	5	12	13
Korea					
Private saving	16	22	20	28	26
Household	7	10	8	13	13
Corporate	8	12	12	15	14
Taiwan Province of China					
Private saving	...	23	27	33	24
Household	14	12	14	17	13
Corporate	...	10	14	15	11
Philippines					
Private saving	20	22	22	18	16
Household	6	8	3	3	...
Corporate	14	14	19	16	...
Japan					
Private saving	31	30	27	26	25
Household	...	...	12	10	9
Corporate	...	...	15	16	17
India					
Private saving	15	19	17	19	21
Household	13	17	15	17	19
Corporate	2	2	2	2	3
United States					
Private saving	17	18	18	16	15
Household	...	...	6	4	4
Corporate	...	...	12	12	11

Sources: Sang-Woo Nam, "What Determines National Saving? A Case Study of Korea and the Philippines," Policy, Planning, and Research Working Paper WPS 205 (Washington: World Bank, May 1989); World Bank; national authorities; OECD; and IMF, World Economic Outlook database and staff estimates.

ulations, state-owned financial institutions, and by guiding and rewarding financial market participants. Usually these interventions directly or indirectly favored financial intermediation, particularly through the banking system, relative to securitization. Government policies and the role of government intervention varied widely by country, however, and there was no one model of financial sector development. In Hong Kong SAR, for example, the government's role generally was limited to prudential regulation and supervision, whereas at the other extreme, in Korea, the government actively directed the allocation of credit.²⁹

²⁹For discussions of the role of the financial sector in east Asia, see Shakil Faruqi, ed., *Financial Sector Reforms, Economic Growth, and Stability: Experiences in Selected Asian and Latin American Countries* (Washington: World Bank, 1994); Shahid N. Zahid, ed., *Financial Sector Development in Asia* (Hong Kong SAR and New York: Oxford University Press, 1995); Shahid N. Zahid, ed., *Financial Sector Development in Asia: Country Studies* (Manila: Asian Development Bank, 1995); and Joseph E. Stiglitz and Marilou Uy, "Financial Markets, Public Policy, and the East Asian Miracle," *World Bank Research Observer*, Vol. 11 (No. 2, August 1996), pp. 249–76.

In several east Asian economies, the public sector created, owned, and managed financial institutions to encourage and intermediate saving, particularly where financial institutions were weak or did not exist. These institutions included postal savings systems, development banks, and state-run commercial banks. In Korea, Malaysia, Singapore, and Taiwan Province of China, postal savings systems were established to encourage small savers by offering a secure and convenient way to deposit their savings through extensive post office networks. In these four economies, as well as in Indonesia and Thailand, development banks provided long-term credit to priority industries, small firms, agriculture, housing, and poorer borrowers. All commercial banks were state-owned and managed in Korea from the early 1960s to the early 1980s, while in Taiwan Province of China the largest commercial banks are still state-owned and operated. In most of the other east Asian economies as well, the government helped to establish and continues to own some of the commercial banks (Table 3.6). Moreover, most east Asian governments, except those in Hong Kong SAR, Singapore, and recently Indonesia, protected fi-

financial institutions from domestic and foreign competition by restricting entry and branch licensing.³⁰

East Asian governments also guided the financial sector by way of tax incentives and subsidies, and by rationing access to limited credit and foreign exchange. For example, in Korea and Taiwan Province of China, households were encouraged to use the postal savings system through the exemption of interest income from tax, while in many east Asian countries development banks' policy loans to priority industries were subsidized. In Korea, in particular, companies that performed well in export markets were granted ready access to credit and foreign exchange.

Economic regulations included controls on interest rates and international capital flows entailing moderate financial repression; restrictions on competition and entry into the financial sector; and restrictions on the activities of financial institutions, such as lending for certain uses or to certain sectors. Unlike in other developing countries, however, where the main function of financial repression was to help lower the public sector's debt-service costs, financial repression in east Asia mainly benefited the private sector, especially corporate borrowers.³¹ One consequence of this repression was that income was transferred from net savers, particularly households, to net investors, particularly corporations, as interest rates were kept low.³² Another was that financial repression increased the scarcity of funds, thereby providing added leverage and apparent justification for government intervention. Complementing financial repression were controls on international capital flows. Without these controls, households' funds might have flowed abroad when domestic deposit rates were held significantly below international rates.

At times, east Asian governments also limited lending for consumer spending, housing, real estate, and equity purchases. The restrictions on lending for consumer spending and housing encouraged households to save before making large purchases, while the restrictions on lending for real estate and stock market investments discouraged speculative borrowing.

³⁰In Indonesia, entry and licensing requirements, in fact, may have been too lenient from a prudential perspective, especially because bank capital requirements were very low.

³¹In east Asia, government revenues from financial repression were significantly lower than in most Latin American and African countries—for estimates of revenue generated through financial repression, see Alberto Giovannini and Martha De Melo, "Government Revenue from Financial Repression," *American Economic Review*, Vol. 83 (September 1993), pp. 953–63. For a general discussion of the issue, see Box 5, "Financial Repression," in the October 1996 *World Economic Outlook*, p. 73.

³²In other developing countries, financial repression has been shown to have reduced national saving by leading to persistently negative real interest rates, which reduced household saving by more than the increases in government or corporate saving. In east Asia, because inflation was relatively low and stable, real interest rates generally remained positive.

Table 3.5. Selected Economies: Net Private Capital Flows¹

(Percent of GDP)

	1975–82 ²	1983–91 ²	1992–96 ²
China			
Net private capital flows	0.3	1.1	3.5
Net direct investment	0.1	0.6	4.2
Net portfolio investment	—	0.1	0.3
Other net investment	0.2	0.4	–1.0
Short-term liabilities	0.2	–0.2	–0.2
Indonesia			
Net private capital flows	1.1	2.6	4.8
Net direct investment	0.5	0.6	1.8
Net portfolio investment	0.1	0.1	0.7
Other net investment	0.5	1.9	2.3
Short-term liabilities	–0.8	1.4	2.4
India			
Net private capital flows	–0.2	1.4	1.5
Net direct investment	—	0.1	0.4
Net portfolio investment	—	—	0.8
Other net investment	–0.2	1.4	0.3
Short-term liabilities	0.1	0.7	–0.1
Korea			
Net private capital flows	5.7	–0.4	3.2
Net direct investment	0.1	0.1	–0.3
Net portfolio investment	0.1	0.3	2.4
Other net investment	5.5	–0.8	1.1
Short-term liabilities	3.6	0.6	2.7
Malaysia			
Net private capital flows	5.1	4.1	10.5
Net direct investment	3.7	3.6	6.5
Net portfolio investment	—	—	—
Other net investment	1.4	0.5	4.0
Short-term liabilities	0.8	0.5	3.5
Philippines			
Net private capital flows	5.5	–0.8	4.8
Net direct investment	0.5	1.0	1.7
Net portfolio investment	0.1	0.1	0.1
Other net investment	5.0	–1.9	3.0
Short-term liabilities	2.9	–2.0	2.3
Taiwan Province of China			
Net private capital flows	1.9	–2.2	–2.5
Net direct investment	0.3	–0.9	–0.6
Net portfolio investment	0.1	–0.3	0.2
Other net investment	1.5	–1.0	–2.0
Short-term liabilities	–0.6	2.0	1.4
Thailand			
Net private capital flows	4.0	5.7	8.8
Net direct investment	0.4	1.3	1.0
Net portfolio investment	—	0.8	2.2
Other net investment	3.5	3.6	5.7
Short-term liabilities	1.7	2.8	4.7
Brazil			
Net private capital flows	4.1	0.6	3.5
Net direct investment	0.9	0.4	0.5
Net portfolio investment	0.1	—	4.1
Other net investment	3.2	0.2	–1.1
Short-term liabilities	0.8	0.5	0.2
Chile			
Net private capital flows	7.1	3.9	8.9
Net direct investment	0.7	2.2	3.1
Net portfolio investment	—	0.2	1.2
Other net investment	6.4	1.5	4.6
Short-term liabilities	1.7	0.5	1.7
Mexico			
Net private capital flows	4.3	–0.5	3.0
Net direct investment	0.8	1.0	2.2
Net portfolio investment	0.1	–0.1	1.3
Other net investment	3.4	–1.4	–0.6
Short-term liabilities	0.6	–0.5	0.2

¹Because of data limitations, other net investment may include some official flows.

²Annual averages.

Table 3.6. Selected Economies: Structure of Financial System¹

	Hong Kong SAR	Indonesia	Korea	Malaysia	Philippines	Singapore	Taiwan Province of China	Thailand
Number of institutions								
State commercial banks	0	7	6	1	5	0	8	2
Development or regional banks	0	27	3	1	3	0	4	5
Private commercial banks	182	205	76	34	25	143	87	29
Domestic	31	164	24	21	21	12	22	15
Foreign or joint-venture	151	41	52	13	4	131	65	14
Merchant or specialized banks ²	62	...	...	12	...	79	8	0
Other savings and finance institutions ³	124	>500	>1,000	168	>1,000	182	>400	>1,000
Postal savings system	—	0	1	1	0	1	1	0
Insurance companies ⁴	223	145	60	67	144	144	53	12
Share of assets (in percent of total)⁵								
State commercial banks	...	36.9	12.0	...	12.9	...	33.1	3.4
Development or regional banks	...	2.2	8.9	0.6	3.1	...	9.5	9.2
Private commercial banks	89.3	46.6	33.1	59.0	50.4	75.4	13.6	64.6
Domestic	...	39.1	29.6	...	43.5	...	10.7	62.6
Foreign or joint-venture	...	7.5	3.5	...	6.8	...	2.9	2.0
Merchant or specialized banks ²	4.5	...	...	5.4	...	16.0	7.3	...
Other savings and finance institution ³	2.7	9.4	37.9	29.5	14.1	...	20.4	21.0
Postal savings system	...	...	0.8	0.9	...	...	11.7	...
Insurance companies ⁴	3.5	4.9	7.5	4.5	19.5	8.6	4.4	1.8

Sources: Hong Kong Monetary Authority; Hong Kong Office of the Commissioner of Insurance; IMF, *Indonesia—Selected Issues*, IMF Staff Country Report 97/76 (Washington: IMF, June 1997); Marcus Noland, "Restructuring Korea's Financial Sector for Greater Competitiveness," APEC Working Paper 96-14 (Washington: Institute for International Economics, 1996); Shahid N. Zahid, ed., *Financial Sector Development in Asia: Country Studies* (Manila: Asian Development Bank, 1995); Bank Negara, Malaysia; Monetary Authority of Singapore; Council of Economic Planning and Development, *Taiwan Statistical Data Book* (Taipei, Taiwan Province of China, 1997); and IMF staff estimates.

¹Structure for years as follows: Hong Kong SAR, 1996; Indonesia, 1996 (except 1991 for share of assets of other finance and insurance companies); Korea, 1994 for number of institutions and 1993 share of assets; Malaysia, 1997; Philippines, 1991; Singapore, 1996 (July for number of institutions and end-year for share of assets); Taiwan Province of China, 1996 for number of institutions and 1990 for share of assets; and Thailand, 1997 for number of institutions and 1992 for share of assets.

²Includes restricted-license banks for Hong Kong SAR (24 of these banks were incorporated outside of Hong Kong SAR) and medium business banks for Taiwan Province of China.

³Includes (domestically or foreign-owned) rural, thrift, and savings banks; credit unions and cooperatives; other savings or deposit-taking institutions; and investment, leasing, and finance companies. Excludes unit trusts, mutual funds, and securities dealers and brokers.

⁴Includes state-owned, domestic private, foreign, and offshore (life, property, casualty, social, and reinsurance) insurance companies.

⁵May not add up to 100 because of rounding. Excludes assets of the postal savings system and other savings and finance institutions for Singapore and assets of the mandatory pensions schemes for Malaysia and Singapore.

In all of the east Asian economies financial intermediation, as measured, for instance, by the ratio of broad money (M2) to GDP, expanded rapidly over the past three decades (Table 3.7). As noted earlier, this occurred in part because of the underdevelopment of securities markets, which meant that to finance the rapid accumulation of capital taking place companies had to rely on debt financing, mainly through banks and other financial intermediaries.

The reliance on private sector debt in these economies can also be gauged using two other measures: private sector credit as a percent of GDP, and debt-equity ratios (Tables 3.8 and 3.9). In most east Asian economies, private sector credit expanded rapidly during the 1980s and 1990s, and by 1995 the ratio of private sector credit to GDP was at least equal to that in the United States. Furthermore, the debt-equity ratio in Korea, the only crisis country for which data are readily available, was very high. In the period 1975–90, retained earnings financed, on aver-

age, about 30 percent of total corporate investment in Korea,³³ and the ratio of debt to equity rose from around 90 percent in the 1960s to close to 350 percent in the mid-1980s, before declining to around 300 percent in the first half of the 1990s. On the eve of the financial crisis, however, the debt-equity ratio had reached nearly 400 percent.³⁴ By comparison, in Taiwan Province of China, the debt-equity ratio was around 85 percent, in Japan around 200 percent, and in the United States just above 150 percent in the 1990s. The very high and rapidly growing debt levels in the east Asian economies indicate that both the banking and corporate sectors were becoming in-

³³See Ajit Singh, "Savings, Investment, and the Corporation in the East Asian Miracle," Study No. 9, Project on East Asian Development: Lessons for a New Global Environment (Geneva: United Nations Conference on Trade and Development, March 1996).

³⁴Sung Kwack, "The Financial Crisis in Korea."

Table 3.7. Selected Economies: Broad Money (M2)*(Percent of GDP)*

	1965	1970	1975	1980	1985	1990	1995
China	...	...	...	37	55	80	102
Hong Kong SAR	...	...	...	...	...	...	173
Indonesia	11	10	16	17	24	40	48
Korea	12	33	31	33	35	38	44
Malaysia	31	34	45	52	63	66	91
Philippines	22	23	18	24	28	34	50
Singapore	56	66	61	64	72	91	84
Taiwan Province of China	34	41	57	66	109	148	194
Thailand	25	28	34	38	56	70	79
Germany	44	49	54	55	59	66	64
Japan	77	74	85	86	96	117	114
United States	66	63	65	61	67	66	58

Source: IMF, *International Financial Statistics (IFS)* (Washington, various years).

creasingly vulnerable to adverse shocks. This fragility may have been exacerbated by the short-term nature of the debt and because credit growth was often led by nonbank financial intermediaries, such as finance companies.³⁵

Although stock market capitalization in east Asia rose dramatically in the 1990s until 1997 (Figure 3.3), securities markets in the region are relatively young and underdeveloped, for a variety of reasons.³⁶ The shares of many companies that are traded on the stock exchanges are closely held, with the percent of shares actively traded being relatively low, despite improve-

ments in market liquidity during this decade. Furthermore, unlike in industrial countries, equity markets play a limited role in corporate governance, owing to the importance of family-controlled firms. As a result, companies have not relied on these markets for financing, and equity prices have not performed the functions of evaluating or effectively disciplining corporate or managerial performance.

Other securities markets in the region, such as money and bond markets, are even less developed and liquid. Fixed-income markets typically develop after the creation of a government bond market. In east Asia, however, government securities markets have been slow to develop: governments either have not required substantial budgetary financing, because of their prudent fiscal stances, or have borrowed from banks to cover fiscal shortfalls. East Asian governments may also have discouraged the development of securities markets through their interven-

³⁵See also IMF, *International Capital Markets: Developments, Prospects, and Key Policy Issues* (Washington: IMF, 1998, forthcoming).

³⁶See Stijn Claessens and Thomas C. Glaessner, *Are Financial Sector Weaknesses Undermining the East Asian Miracle? Directions in Development* (Washington: World Bank, 1997).

Table 3.8. Selected Economies: Private Sector Credit¹*(Percent of GDP)*

	1965	1970	1975	1980	1985	1990	1995
China ²	...	...	...	53	69	89	87
Hong Kong SAR	...	...	...	...	...	...	155
Indonesia	5	9	21	10	18	47	53
Korea	11	34	35	42	49	57	61
Malaysia	13	18	27	38	62	71	85
Philippines	19	19	24	31	20	19	38
Singapore	38	46	57	71	92	82	91
Taiwan Province of China	24	32	51	55	67	100	149
Thailand	14	18	26	30	46	65	98
Germany	57	64	70	79	87	95	100
Japan	81	78	88	85	99	124	118
United States	53	55	62	65	68	71	65

Source: IMF, *IFS*.

¹Private sector credit includes lending by the monetary authorities and deposit money banks; it excludes lending by other banking institutions, for which data are not available for most of the countries listed.

²Credit to nongovernment sector.

Table 3.9. Selected Economies: Debt-Equity Ratios of Manufacturing Corporations*(Percent)*

	1985	1990	1991	1992	1993	1994	1995
Korea	348	285	306	318	294	302	286
Taiwan Province of China	114	83	98	93	88	87	86
Japan	252	226	221	216	213	209	206
United States	121	149	147	168	174	166	159

Source: Sung Kwack, "The Financial Crisis in Korea: Causes and Cure," IMF Seminar Series, No. 1998-19 (Washington, June 1998).

tions.³⁷ For instance, in Thailand (as in Japan), the government directly hindered the development of the bond market by granting a monopoly in the issuance of long-term debentures to one bank.

The rapid expansion of financial intermediation in the east Asian economies was not always matched by a commensurate strengthening of regulatory and supervisory systems. Indeed, all of these economies in varying degrees suffered from financial sector distress at times during the past two decades (Table 3.10). In several instances, such as in Hong Kong SAR during 1982-86, Indonesia during the early 1990s, Malaysia during 1985-88, the Philippines during the mid-1980s, Taiwan Province of China during 1983-84, and Thailand during 1983-87, some financial institutions failed or were closed. In Malaysia, the closure of banks led to runs on other banks, while in Hong Kong SAR the period of financial sector problems coincided with a period of exchange market pressure. In other cases—for example, Korea during the mid-1980s and Singapore in 1982—although banks did not fail, nonperforming loans grew, and financial institutions came under significant stress.

Banking sector distress in these economies was caused by both external and domestic factors. External causes included increases in international interest rates (for several economies in the early 1980s), falling export demand (in Korea), or terms of trade shocks (in Malaysia and the Philippines). Domestic causes included weak prudential regulations (in all of these economies), speculative borrowing (related mainly to real estate in Hong Kong SAR, Malaysia, and Thailand; equities in Malaysia; exchange rates in Thailand; and arbitrage across the yield curve in Taiwan Province of China), and lending on noncommercial criteria, often to clients connected to bank management or the government (in Indonesia, the Philippines, and Thailand).

³⁷Maxwell J. Fry, "Nine Financial Sector Issues in Eleven Asian Countries," International Finance Group Working Paper 90-09 (Birmingham, U.K.: University of Birmingham, October 1990) argues that long-term securities markets will only develop as market participants "learn-by-doing" with market-determined interest rates. Therefore, when interest rates are administered, the development of bond markets may be hampered.

Governments responded to the crises in different ways. In Hong Kong SAR and Taiwan Province of China, most insolvent financial institutions were merged, liquidated, or allowed to fail, and management was replaced when institutions were merged or bought by healthier banks. In contrast, in Indonesia, Malaysia, and Thailand, although a few, generally small, financial institutions were allowed to fail, most institutions were allowed to remain in operation through government intervention, despite nonperforming loans in the banking sector that exceeded 25 percent of total assets. In Korea, where nonperforming loans peaked at over 7 percent of total lending, no financial institutions were closed.³⁸ Furthermore, even when financial institutions failed, most depositors were protected, notwithstanding the absence (except in the Philippines) of explicit deposit insurance. In almost all of these economies, prudential regulations and supervisory frameworks were tightened after the crises, but only in Hong Kong SAR and Singapore were reforms implemented in a systematic way.

From the mid-1980s onward, east Asian governments began to liberalize their financial sectors. The liberalization included domestic reforms as well as liberalization of exchange and capital controls. These reforms were not solely in response to the banking crises of the 1980s but were motivated also by changes in needs for financing as these economies matured, production processes became more complex, and a broader range of often more sophisticated financial instruments took on greater importance.³⁹ Financial market liberalization and reform, however, did not generally occur in a coherent fashion: rather, governments liberalized in an ad hoc manner as problems arose, and they failed to upgrade accounting and reporting standards and to strengthen regulatory and supervisory systems.

³⁸By comparison, in the United States during the banking crisis of the mid-1980s when nonperforming loans peaked at around 4 percent of total loans, over 2,000, mainly small, banks and savings and loan institutions failed.

³⁹Membership in the World Trade Organization (WTO) and, for Korea, in the OECD, may also have encouraged financial sector liberalization in recent years.

In Korea, for example, the liberalization of the financial sector was very gradual and selective.⁴⁰ On the external side, developments in the current account essentially dictated the way capital flows were controlled or liberalized. When the current account weakened (for example, in the early 1980s), the government restricted overseas investments by residents and eased inward restrictions on capital flows. When the current account shifted into surplus in the late 1980s, the government abolished all restrictions on outward foreign direct investment below \$1 million, but foreign commercial loans to private domestic firms were restricted.⁴¹ When again the current account worsened in the early 1990s, capital account liberalization proceeded. On the domestic side, state banks were privatized, interest rates were gradually deregulated, policy lending was reduced, and the development of securities markets was encouraged. The government, however, was tardy in improving the supervisory and regulatory framework as the financial sector was liberalized, and debt levels remained high. Furthermore, as capital controls were relaxed, albeit mostly for domestic commercial banks, external debt rose.

Similar weaknesses developed in Indonesia, Thailand, and to a lesser extent in Malaysia as the financial sector and capital account were liberalized. In addition, previous government interventions to support weak or insolvent financial institutions (for example, in Indonesia, Malaysia, and Thailand) and government-directed credit to corporations through banks (in Korea) clearly exacerbated moral hazard by creating the perception of implicit guarantees and thereby encouraging excessive risk taking.⁴² In the three southeast Asian countries, banks also lent heavily to the property sector and for equity investments. Hence by the mid-1990s, the financial sector was vulnerable to asset price deflation. Offshore financial institutions, such as the Bangkok International Banking Facilities in Thailand, actively intermediated funds raised through short-term foreign borrowing, increasing the private sector's vulnerability to currency depreciation. In Indonesia, the fragmentation of the banking system that occurred after bank licensing was liberalized without appropriate capital requirements may also have increased the fragility of the financial system. Improvements in the prudential

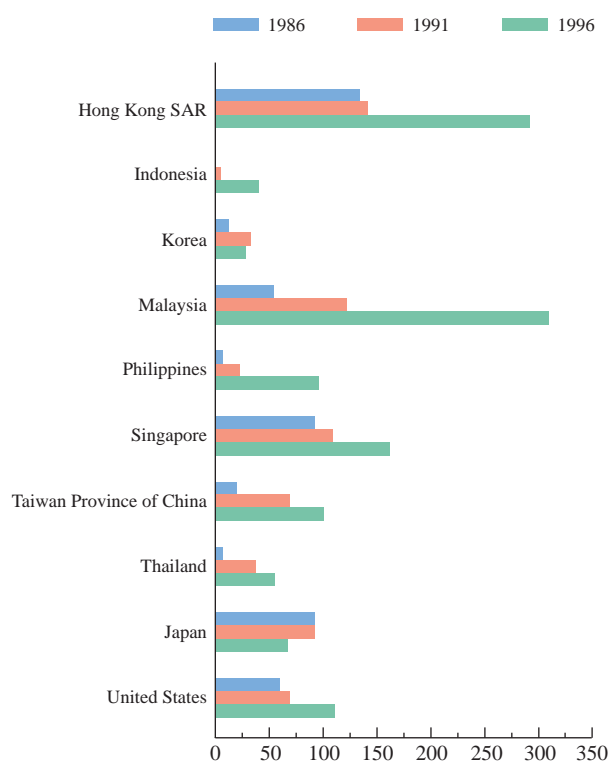
⁴⁰See R. Barry Johnston, Salim M. Darbar, and Claudia Echeverria, "Sequencing Capital Account Liberalization: Lessons from the Experiences in Chile, Indonesia, Korea, and Thailand," Working Paper 97/157 (Washington: IMF, November 1997).

⁴¹See Yung Chul Park and Chi-Young Song, "Managing Foreign Capital Flows: The Experiences of the Republic of Korea, Thailand, Malaysia, and Indonesia," *International Monetary and Financial Issues for the 1990s* (New York: United Nations Conference on Trade and Development, 1997).

⁴²See IMF, *International Capital Markets*, 1998 (forthcoming); and Paul Krugman, "What Happened to Asia?" January 1998 (available via the Internet: <http://web.mit.edu/krugman/www/disinter.html>).

**Figure 3.3. Selected Economies:
Stock Market Capitalization¹**
(Percent of GDP)

Stock market capitalization has risen in east Asia in the 1990s.



Sources: International Finance Corporation, *IFC Factbook*; and IMF, World Economic Outlook database.

¹Data for capitalization are end of period, and for GDP are period average.

Table 3.10. Selected East Asian Economies: Banking Sector Problems

Economy	Dates	Extent of Financial Distress	Government Measures/Estimated Losses
Hong Kong SAR	1982–83	Nine deposit-taking institutions failed.	The authorities revamped regulatory and auditing systems for financial institutions.
	1983–86	Seven banks and other financial institutions failed or were merged, taken over, or liquidated.	The authorities introduced new management in several institutions and provided credit for others.
Indonesia	1992–96	A large private bank failed, causing runs on smaller banks. Nonperforming loans peaked at over 25 percent of total lending.	The government recapitalized five state banks at a cost of about 2 percent of GDP. One bank was liquidated.
Korea	mid-1980s	Nonperforming loans of deposit-money banks peaked at over 7 percent of total assets.	
Malaysia	1985–88	At peak, nonperforming loans were over 30 percent of total loans. Sporadic runs on financial institutions. Several finance companies failed or were merged. Overall, the authorities intervened in 3 banks, 4 finance houses, 14 insurance companies, and 24 other deposit-taking institutions.	The reported losses were equivalent to about 5 percent of GDP. The shareholders of some institutions were required to inject new capital, with supplements from the central bank. Loans to some banks were provided at concessional rates. The supervisory and regulatory framework was strengthened, and a secondary mortgage market to aid bank liquidity was established.
Philippines	1981–87	Banks accounting for almost 2 percent of total assets failed in 1981. Through the mid-1980s, 3 private commercial banks, 128 rural banks, and 32 thrift institutions failed. Nonperforming loans were almost 20 percent of total loans at peak.	The central bank provided substantial liquidity, amounting to 3 percent of GDP at peak. Several insolvent institutions were closed or were taken over, and depositors were paid off (depositor losses were equivalent to over 5 percent of total deposits). The government took over several banks and established an agency to administer, recover, and dispose of nonperforming loans.
Singapore	1982	Nonperforming loans of commercial banks reached almost 1 percent of GDP.	The government provided tax breaks for two years to write off losses.
Taiwan Province of China	1983–84	Four trust companies and 11 cooperatives failed.	Healthier banks bought or took over management of weaker ones.
	1995	A credit cooperative failed, causing runs on other credit unions.	
Thailand	1983–87	Runs on financial institutions caused over 20 finance companies to fail. More than 25 percent of financial system assets were impaired.	The authorities intervened to assist over 50 finance companies and banks: 25 were closed and another 9 were merged; 20 other institutions received government subsidies. The total cost to the government was about 1 percent of GDP. Depositors of finance companies bore about 50 percent of losses.

Sources: Gerard Caprio, Jr. and Daniela Klingebiel, "Bank Insolvencies: Cross-Country Experience," Policy Research Working Paper 1620 (Washington: World Bank, July 1996); Carl-Johan Lindgren, Gillian Garcia, and Matthew I. Saal, *Bank Soundness and Macroeconomic Policy* (Washington: IMF, 1996); and World Bank, *The East Asian Miracle: Economic Growth and Public Policy* (New York: Oxford University Press, 1993).

regulatory and supervisory frameworks and their rigorous enforcement, risk-weighted capital adequacy requirements, limitations on overexposure to individual sectors, rules for loan-loss provisioning, and restrictions on lending to related parties might have mitigated the risks and reduced the vulnerability that developed as domestic and external financial controls were removed in these countries.

Export Orientation and Trade Openness

A key ingredient of the east Asian economies' successful development strategy was their export orientation. Although each of these economies, other than Hong Kong SAR, went through an initial import-

substitution phase, they subsequently promoted exports while, in most cases, continuing to protect domestic industries from import competition.⁴³ The ex-

⁴³The east Asian experience was instrumental in changing established views regarding trade policy and economic development—in particular, in altering the consensus view from favoring "import-substitution" to favoring "outer-oriented" trade policies. See Anne O. Krueger, "Trade Policy and Economic Development: How We Learn," *American Economic Review*, Vol. 87 (March 1997), pp. 1–22. Import substitution policies were favored until 1958 in Taiwan Province of China, 1960 in Korea, 1967 in Singapore, 1970 in Malaysia, and 1980 in Thailand. Indonesia, which had followed export-oriented policies and liberalized trade in the late 1960s, turned inward during the oil and commodity price boom of the 1970s, but returned to an export-push strategy in the second half of the 1980s. In recent years, China and the Philippines have also promoted exports.

ports and imports of all of these economies grew even faster than their output, and the newly industrialized Asian economies' shares of world trade now far exceed their shares of world output (Figures 3.4 and 3.5). In large part, manufactured exports—initially labor-intensive manufactures and more recently high-technology exports such as machinery and equipment—have led the export drive.⁴⁴

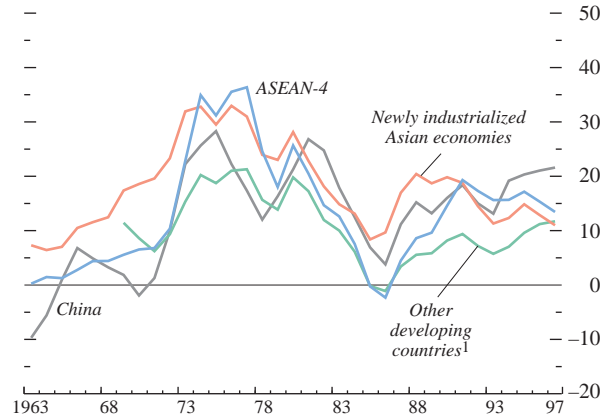
Exports have been regarded as vital to the east Asian growth strategy, for several reasons. First, exports provided demand needed to sustain the growth process. For the most part, these countries had relatively small internal markets—small populations or low per capita incomes at the initial stages of development. Therefore, rapid growth required external markets. Second, producing for export markets encouraged efficiency because domestic firms had to compete internationally. This was particularly important because east Asian governments had often discouraged domestic competition in order to enhance corporate earnings and saving, protect infant industries from foreign competition (so as to develop comparative advantages in new areas, particularly in manufacturing), and stimulate rapid growth (so that firms would achieve economies of scale). Furthermore, as part of their export-promotion strategies, east Asian governments encouraged the import of technology by fostering licensing for knowledge-intensive or technology-intensive products (for example, in Korea, modeled on the experience of Japan), by promoting inward foreign direct investment geared mainly toward export industries (in Indonesia and Thailand, for example), or by spurring capital goods imports through tax and subsidy incentives and tariff policy.⁴⁵ Third, export promotion reinforced both the need for, and the ability to maintain, macroeconomic stability. On the one hand, east Asian governments generally sought to sustain competitive exchange rates to foster exports. Maintaining fiscal and monetary stability was important, therefore, to prevent real currency appreciation and exchange rate instability. On the other hand, export growth helped to resolve the potential conflict between rapid economic growth and the external financing constraint by helping to avoid the emergence of large current account deficits. In addition, as exports rose and generated income they contributed to government revenues and the government's ability to maintain fiscal balance, in a virtuous circle.

⁴⁴In Indonesia, Malaysia, and Thailand, oil and other natural resource exports have been significant for periods of time.

⁴⁵Borensztein, De Gregorio, and Lee, "How Does Foreign Direct Investment Affect Economic Growth?" for example, shows that foreign direct investment is an important vehicle for the transfer of technology, contributing relatively more to growth than domestic investment when the stock of human capital exceeds some threshold. Gene Grossman and Elhanan Helpman, *Innovation and Growth in the Global Economy* (Cambridge, Massachusetts: MIT Press, 1991), emphasize that technological spillovers can come through imports as well as exports.

Figure 3.4. Selected Economies: Growth of Merchandise Exports
(Percent a year; five-year moving average)

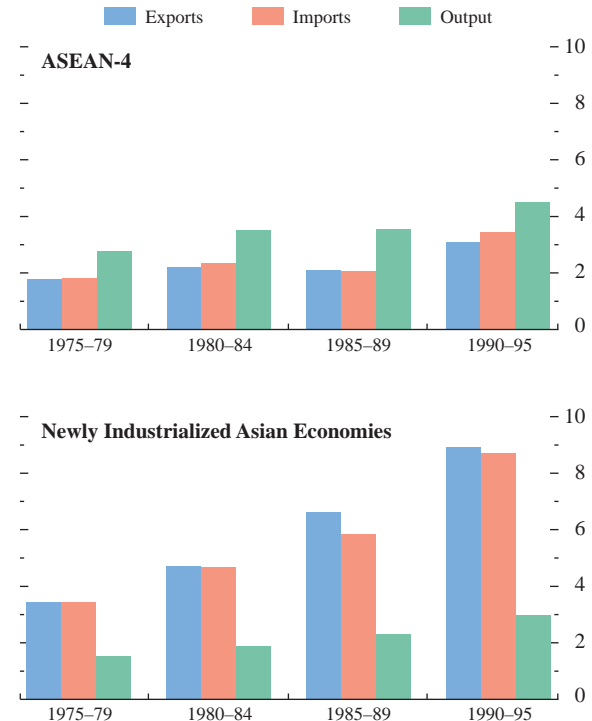
Exports have grown faster in east Asia than in other developing countries.



¹Excludes fuel exporters.

Figure 3.5. Selected Country Groups: Shares of World Exports, Imports, and Output
(Percent)

East Asia's shares of world trade and output have risen steadily over the past two decades.



Box 3.1. Aging in the East Asian Economies: Implications for Government Budgets and Saving Rates

Beyond the recent economic turmoil afflicting many of the Asian economies, one facet of their longer-term prospects not often remarked upon is that, like many industrial countries, their populations are aging (albeit with a lag relative to the industrial countries). The share of the elderly in the populations of the Asian economies of China, Indonesia, Korea, Malaysia, the Philippines, Singapore, Thailand, Taiwan Province of China, Vietnam, and Hong Kong SAR will at least double by 2025, and the share of the young will fall sharply. There has also been a swift transformation in the health status of these economies' populations toward patterns increasingly mirroring those in industrial countries. These developments will influence the long-term development of these economies—affecting labor markets, saving and investment, and growth rates, and posing policy challenges for government, particularly in the social sectors. Given Asia's importance in the world economy, there may be global macroeconomic ramifications as well.

In demographic terms, Hong Kong SAR, Korea, Singapore, and Taiwan Province of China—the newly industrialized Asian economies—are the furthest advanced in terms of population aging. Their working-age populations will increase modestly during 2000–30 and then shrink. By 2010, their overall dependency rates will begin to rise sharply, reflecting the rising shares of the elderly. For China, these structural changes will begin about ten years later. For Indonesia, Malaysia, the Philippines, Thailand, and Vietnam the declines in fertility and increases in life expectancy are more recent. Overall dependency rates will fall until 2020, when the elderly dependency rate will begin to rise sharply, reaching 22–28 percent by mid-century.

The aging of a country's population poses important long-term public policy challenges. Educational systems will need to adapt, and rapidly modernize, while aging societies will confront difficult challenges in meeting the growing and shifting demands for medical care. Social insurance mechanisms will be needed to ensure that the elderly have adequate financial resources when they retire, particularly since traditional extended family support systems normally weaken as economies mature.

Forecasting the budgetary effects of aging is always problematic. But the lack of established comprehensive social insurance systems in many Asian countries and the uncertainty about the direction of public policy makes forecasting particularly difficult. It seems clear, however, that the narrow demographic effects on government budgets of aging populations (in terms of rising shares of the elderly in the populations) will be quite pronounced for the newly industrialized Asian economies primarily because their social insurance schemes are more developed. Conversely, the more limited social insurance commitments of China and the countries in southeast Asia suggest that the impact of aging populations alone may not have significant fiscal effects. A realistic budgetary projection, however, would need to take account of the likelihood that these countries will seek to broaden significantly the coverage of their social insurance systems, long before the elderly become more important in the population. Such policy changes, interacting with the aging of the populations, are likely to create significant fiscal pressures. Indeed, a recent IMF study suggests that the introduction of a plausible extension of the social sector policy framework could lead to a substantial increase in budgetary outlays on

Many government policies assisted the export drive. Thus, despite high effective rates of protection, exporters had access to imports at close to world prices through a variety of channels, including free trade zones, export-processing zones, bonded warehouses, duty drawbacks, and tariff exemptions. In fact, comparisons of international and domestic price levels and their variability show significantly smaller price distortions in the east Asian economies than in other developing countries.⁴⁶ Also, east Asian governments typically provided preferential financing and tax incentives for exports, subsidized export-marketing efforts and export-related infrastructure, promoted the creation of international trading companies, and, particularly in the southeast Asian economies, provided incentives for foreign investment directed toward exports.

The export drive was also abetted by the availability of external markets, particularly in Japan and the United States, but also increasingly within the Asian region (Figure 3.6). Japan, the United States, and the EU furnished substantial demand for the labor-intensive manufactures that generated the largest growth in east Asian exports, and more recently, also provided a market, particularly in the United States, for technology-intensive products. Reciprocally, the industrial countries (especially Japan) exported the capital goods that the Asian economies required to produce their export goods and improve the technology base.

Expanding intraregional trade also played a critical role. A large part of this trade consisted of trade in intermediate goods, allowing the east Asian economies to generate economies of scale. This expansion was aided, in part, by the more advanced economies in the region, starting with Japan and subsequently Korea, Singapore, and Taiwan Province of China, investing directly and relocating firms to other east Asian economies. By the mid-1990s, about one-half of the

⁴⁶See David Dollar, "Outward-Oriented Developing Economies Do Really Grow More Rapidly: Evidence from 95 LDCs, 1976–85," *Economic Development and Cultural Change*, Vol. 40 (April 1992), pp. 523–44.

pensions and medical care in coming decades in these countries.¹

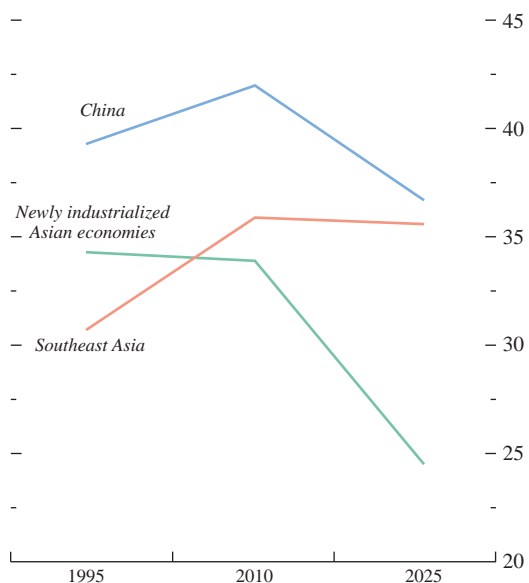
In addition to the fiscal effects, one can expect that the aging of east Asian populations may have a significant effect on national saving rates, bolstering their already high levels in the next decade but then eroding saving rates as elderly dependency rates begin to rise. Another recent IMF study has sought to gauge the possible partial effects, over time, of expected demographic shifts on private sector saving rates.² Such an exercise suggests that through 2010, there may be an increase in private saving rates. Through 2025, only in the four newly industrialized Asian economies would demographic factors adversely influence private saving rates. Thus, at a time when industrial countries' saving rates are declining as a result of their demographic profiles, the east Asian countries should provide some additional saving. After 2025, however, private saving rates may decline markedly across the region, as elderly dependency rates rise.

Combining the effects on the public and private sectors (and taking account of possible Ricardian equivalence effects), one may initially observe a deterioration in national saving rates in the newly industrialized Asian economies by 2010, and to a lesser extent in China (*see figure*). In contrast, national saving rates may increase in southeast Asia. From 2025 on, however, the Asian newly industrialized economies and China may observe significant deteriorations in national saving rates.

¹Peter S. Heller, "Aging in the Asian 'Tigers': Challenges for Fiscal Policy," Working Paper 97/143 (Washington: IMF, October 1997).

²Peter S. Heller and Steven A. Symansky, "Implications for Savings of Aging in the Asian Tigers," Working Paper 97/136 (Washington: IMF, September 1997).

National Saving Rates¹
(Percent of GDP)



¹The newly industrialized Asian economies are Hong Kong SAR, Korea, Singapore, and Taiwan Province of China. Southeast Asia comprises Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. Saving rate for 2010 and 2025 are IMF staff projections.

exports of each of the east Asian economies went to other countries in the region, including Japan (see Figure 3.6). The Philippines is the least regionally integrated economy, with more than one-third of exports destined to the United States. China and Indonesia are the most regionally integrated, with almost 60 percent of their exports directed to other countries in the region. The increased regional trade integration has undoubtedly been a positive element in the region's economic development, but it has also tended to exacerbate the regional spillovers of the recent financial crises, magnifying their effects on trade and activity within the region relative to their effects on the rest of the world economy.

Macroeconomic Stability

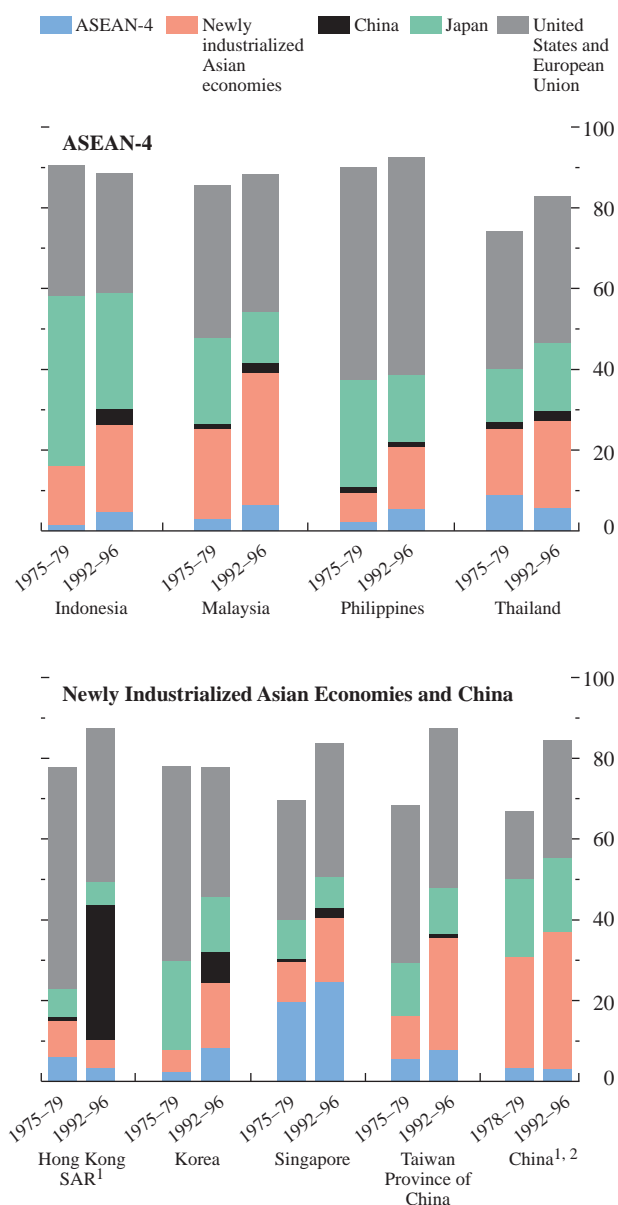
Unlike many other developing countries that experienced numerous boom-bust cycles during the past three decades, the fast-growing east Asian economies generally maintained a relatively high degree of

macroeconomic stability until recently. Fiscal and current account deficits were less than one-half the average for other developing countries, and inflation for the most part was kept in the single digits. In some economies (for instance, Indonesia, Taiwan Province of China, and Thailand), legislation limited the size of public sector deficits, while in other economies (for instance, Korea, Malaysia, and Singapore) strong political support for anti-inflationary policies acted as a constraint on fiscal policies. Also, in Hong Kong SAR, the currency board arrangement in place since 1983 has disciplined fiscal policy as well as constraining monetary action. Disciplined macroeconomic policies provided a stable environment for private sector decision making and contributed to the high rates of saving, domestic and foreign investment, and export growth that were ingredients in the region's growth performance (Table 3.11).

This generally favorable performance, however, was not without difficulties. Indeed, several of the east Asian economies experienced intermittent bouts of

**Figure 3.6. Selected Economies:
Destination of Exports**
(Percent of total exports)

Intraregional exports in east Asia have risen to about one-half of all exports, while the United States and European Union continue to be important export markets.



Source: IMF, *Direction of Trade Statistics*.

¹Data for exports from Hong Kong SAR and China include China's exports to Hong Kong SAR, which are reexported to other destinations.

²Data start in 1978.

overheating pressures, indicated by rising inflation, at least in asset markets, and sizable current account deficits. In the period leading up to the recent crises a number of east Asian economies witnessed sharp increases in private capital inflows, attracted in part by the high rates of growth, which contributed to overheating pressures. Goods price inflation remained moderate, but asset prices—real estate and equity prices—rose at a rapid pace. In some countries real exchange rates appreciated, eroding competitiveness and exacerbating the deterioration of current account imbalances. With currencies essentially pegged to the U.S. dollar in many of the east Asian countries, and with the scope for, or the readiness to undertake, fiscal adjustment limited, the policy response to the capital inflows was often limited to sterilization of their monetary impact, which tended to be impractical given the size of the inflows. By late 1996 and early 1997, the fine balance between macroeconomic stability with pegged exchange rates, high investment, and rapid growth began to unravel in many parts of east Asia, particularly in Thailand.⁴⁷

The East Asian Development Strategy in a Changing Environment

The east Asian growth experience and the recent crises cannot be assessed only in terms of developments in the east Asian economies themselves; they have to be viewed, rather, in the context of a changing world economy. In particular, the recent crises have revealed, in ways that previous crises did not, the limitations of “managed development” in an increasingly integrated world economy.

In recent decades, as the east Asian economies have been experiencing rapid economic growth, the world economy has become increasingly integrated. Globalization, especially of financial markets, has greatly increased the potential costs to countries of the failure to maintain sound domestic financial sectors. In some respects the east Asian development strategy was well suited to the evolving environment: east Asian governments on the whole fostered macroeconomic stability and encouraged mobilization of domestic resources necessary for sustained rapid growth, and their outward-oriented strategy allowed them to benefit from expanding markets for their products. But the strategy was not so well suited to fostering strong domestic financial systems. This was partly a problem of success: economic growth was so rapid that it was difficult for institutional development, and prudential regulation and supervision, to keep pace with require-

⁴⁷For further details regarding macroeconomic developments prior to the crisis in mid-1997, see the December 1997 *World Economic Outlook: Interim Assessment*, pp. 8–10.

Table 3.11. Selected Economies: Macroeconomic Indicators

	Growth (percent a year)	Inflation (percent a year)	Fiscal Balance ¹ (percent of GDP)	Current Account Balance ² (percent of GDP)
1975–85 (average)				
China	7.9	2.7	–1.0	0.4
Hong Kong SAR	8.2	8.2	1.1	3.0
Indonesia	5.7	13.4	0.3	–2.0
Korea	7.6	13.5	–2.2	–3.7
Malaysia	6.3	4.8	–5.3	–3.2
Philippines	2.9	15.6	–2.0	–5.1
Singapore	7.2	3.4	1.9	–7.2
Taiwan Province of China	8.3	6.3	0.3	4.3
Thailand	6.6	7.2	–3.7	–5.5
Brazil	4.1	101.2	—	–3.6
Chile	2.2	81.0	0.9	–6.5
India	5.0	6.7	–6.8	–0.7
Mexico	4.7	39.5	–5.2	–2.3
1986–96 (average)				
China	9.9	11.6	–1.9	0.4
Hong Kong SAR	6.3	8.0	2.1	5.6
Indonesia	7.4	8.2	–0.5	–2.8
Korea	8.6	5.7	–0.1	0.9
Malaysia	7.8	2.6	–2.4	–2.6
Philippines	3.7	8.9	–2.3	–2.5
Singapore	8.4	1.9	9.1	9.5
Taiwan Province of China	7.7	3.0	–0.5	7.8
Thailand	9.1	4.5	2.1	–4.9
Brazil	2.6	983.1	–1.3	–0.6
Chile	7.7	15.8	2.6	–3.1
India	5.9	9.2	–7.4	–2.0
Mexico	2.0	45.7	–4.0	–2.8

¹Central government.

²For Hong Kong SAR, data are for the goods and services balance.

ments. Thus, in Korea, for instance, the financial system remained underdeveloped compared with systems in other countries with similar levels of per capita income. But it was also a result of two other factors. First, government interventions and “guidance” of the financial sector retarded the development of domestic securities markets and also led to problems associated with connected lending, implicit guarantees, and overly exposed financial sectors. Second, financial liberalization was not well sequenced.

With regard to the first of these factors, governments have an important responsibility to supervise and safeguard financial systems because of their central role in the payments mechanism and in the mobilization, intermediation, and allocation of savings. Governments may also need to intervene actively in financial markets because of market failures, typically stemming from incomplete or asymmetric information.⁴⁸ There are reasons to believe that financial mar-

ket failures may be particularly acute in emerging market economies. For example, in a relatively immature financial system, banks and other financial institutions may face limited competition or may not even exist in certain rural areas, so that the private sector may be discouraged from saving or investing. Also, reliable sources of information, such as credit agencies, may not exist, so that banks or other creditors may be hesitant or unwilling to lend to viable borrowers.

Clearly, government interventions may be justified to correct some market failures and can, in principle, improve the efficiency of financial markets. Often, however, as has been the case in many developing countries, such interventions are counterproductive, hampering the efficiency of financial markets. Further-

borrower. As a result, financial resources will not be rationed by equilibrating prices (in this case, interest rates) but by other generally information-based means. Financing, therefore, may not go to investments with the highest social returns. For a more detailed discussion of market failures in the financial sector and the potential role of government, see Joseph E. Stiglitz, “The Role of the State in Financial Markets,” in *Proceedings of the Annual World Bank Conference on Developments Economics 1993*, edited by Michael Bruno and Boris Pleskovic (Washington: World Bank, 1994), pp. 19–52; and World Bank, *The East Asian Miracle*, pp. 205–21 and pp. 273–91.

⁴⁸For example, many financial transactions do not reflect concurrent exchanges of goods or services, and participants in these transactions base their decisions on information about future economic conditions and prices. Also a creditor usually will have less information about a borrower and the use of the borrowed funds than the

more, what may appear to be a successful government intervention in one dimension may have negative effects in another. For example, policies such as restraints on consumer credit may help to mobilize and increase domestic saving and investment, but they may also lead to a suboptimal level and inefficient pattern of consumption and to a misallocation of investment. Also, interventions that may be appropriate for a certain stage of economic and financial development may well be inappropriate at more advanced stages, but they might be difficult to dismantle because of vested interests that have become established or because they have hindered the development of managerial competencies and institutional structures. Thus, directed lending and other government involvement in the loan decision process may result in banks having poor credit risk assessment capabilities, since loan officers will be inexperienced in evaluating and monitoring the performance of debtors with long-term financing needs. They may also retard the development of effective accounting, legal, supervisory, monitoring, and information systems.

This was the case in the crisis countries: the institutional structure became increasingly inadequate at efficiently intermediating the large and growing volume of saving, and the moral hazard problems present in all financial systems were magnified. Owing to underdeveloped capital markets and regulations that prevented domestic savers from investing abroad, banks had a dominant position in the intermediation of funds. Connected lending, poor credit risk assessment, and other deficiencies, however, contributed to excessive debt creation and to the financing of marginal or uncertain investment projects, while restrictions on the entry of foreign financial institutions limited competitive discipline and the injection of outside expertise. Financial discipline tended not to be imposed by banks because of implicit or explicit guarantees on both bank assets and liabilities. A history of public guarantees of private projects, some of which were undertaken under government guidance, directly subsidized or supported by policies of directed credit to favored companies or sectors, had contributed to insufficient attention being paid by corporations and banks to the underlying riskiness and returns of investment projects. Distorted incentives in project selection, combined with insufficient expertise in the monitoring and evaluation of projects, weak prudential supervision and regulation, and low capital adequacy ratios, resulted in the buildup of structural weaknesses in undercapitalized financial systems.⁴⁹

These weaknesses were exacerbated by financial market deregulation and capital account liberalization

during the 1990s. Capital inflows gave banks and other financial intermediaries a larger supply of funds to intermediate. The partial and improperly sequenced financial liberalization, coupled with effectively pegged exchange rates, contributed to a poor allocation of funds for investment. Financial deregulation made it easier for traditional borrowers to find new sources of finance without making it correspondingly easier for banks to maintain the quality of their loan portfolios. The enhanced moral hazard was manifested in a growing number of nonperforming loans.

In the years leading to the recent crises, the weaknesses in the financial systems were aggravated by excessive investment in low-profitability projects and overborrowing. Rapid economic growth, however, tended to mask the inefficient investments, while poor data disclosure standards and lack of transparency, lax loan classification and provisioning practices, and regulatory forbearance masked the true extent of financial sector weaknesses. Moreover, a history of government intervention and support in favor of troubled financial institutions and corporations had done nothing to strengthen financial discipline in a way that made future crises less likely.

These problems, however, should not lead one to overlook the many positive features of the east Asian economies—in particular, their outward orientation, their emphasis on human capital formation and technology transfer, and their high saving rates—features that are even more advantageous in today's globalized markets than in the past. Indeed, their prospects for rapid economic growth are still favorable but will require significant changes from the model based on very high rates of capital accumulation and, especially in recent years, high reliance on capital inflows. Although relatively high investment rates are likely to be a feature of the east Asian economies for some years to come, more of the growth will have to come from improved productivity performance, including through better use of capital. Changes to the model will also have to be made with respect to financial structure and governance, both in the corporate sector and in public policymaking.

The crisis has particularly highlighted the incompatibility of government intervention in the financial sector and the investment process with highly integrated capital markets. The changing needs of an advancing economy and the globalization of financial markets alter the role the government can effectively play in the economy to one of ensuring the regulatory, legal, and political institutional structures capable of supporting rapid economic growth.

Building the Basis for Sustained Recovery and Growth

A pronounced slowdown in economic growth is an unavoidable consequence of crises of the type that

⁴⁹See Morris Goldstein, "The Asian Financial Crisis: Causes, Cures, and Systemic Implications," *Policy Analyses in International Economics*, No. 55 (Washington: Institute for International Economics, June 1998).

have hit the east Asian economies.⁵⁰ The downturns have been led by the compression of domestic demand, as large exchange rate depreciations, equity price declines, and increases in interest rates have reduced real income and wealth and boosted debt-servicing costs. Demand and activity have also been reduced by a tightening of bank credit resulting from the deterioration of banks' balance sheets. The impetus for recovery will most likely come from two sources: an expansion of exports and import-competing production in response to the real exchange rate depreciations that have occurred, and a recovery of confidence among domestic and external investors once financial stability is restored. The forces likely to contribute to the initial process of recovery are discussed in Chapter II.

Financial stabilization to foster the initial turnaround in activity is only the first order of business. To build the basis for a sustained and strong recovery of activity over the next several years, major efforts are also needed, and are under way, to restructure the financial and corporate sectors.

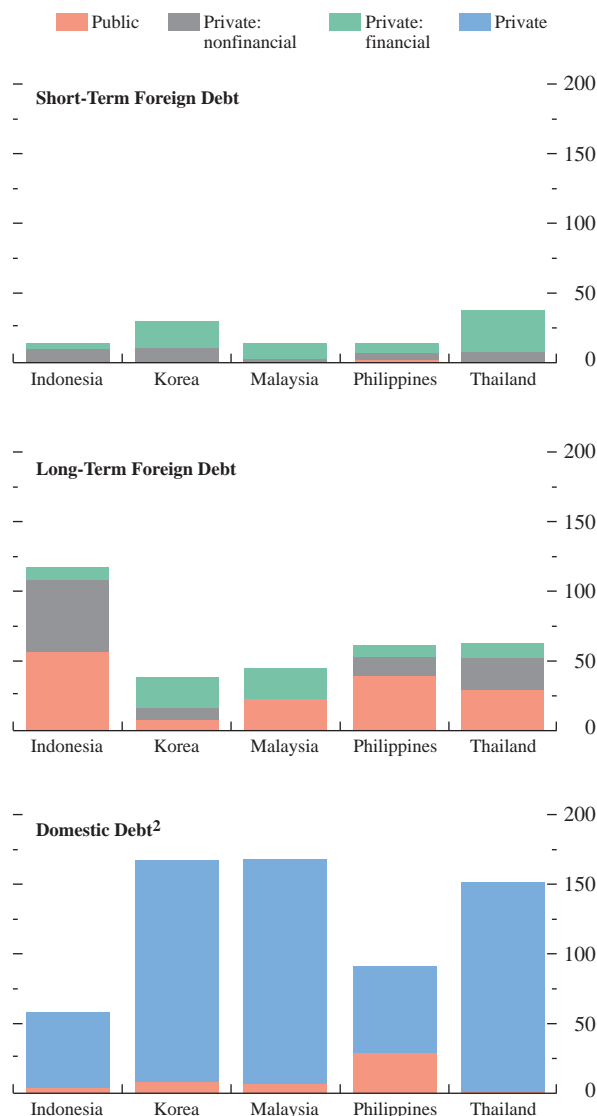
In the financial sector this will require the restructuring and recapitalization of weak but viable financial institutions and the closing or merger of nonviable institutions. Significant progress has been made in these areas in Thailand and Korea, but more remains to be done in Indonesia. Despite the progress, the financial systems in these economies remain fragile. Nonperforming loans are estimated at between 20 and 40 percent of total loans in the crises economies, and banking sectors remain illiquid and undercapitalized. Furthermore, many financial institutions are likely to be insolvent, implying large recapitalization requirements. There are a number of approaches that could be adopted to rehabilitate banking systems.⁵¹ Typically, they involve several elements: the injection of some public funds to recapitalize distressed banks; the temporary transfer of ownership of nonviable banks to an independent public agency; and the resale to the private sector of the banks in which the authorities have intervened, which in some cases will require the liberalization of foreign-ownership limits so that foreign investors can help to finance the recapitalization.

In conjunction with bank restructuring and recapitalization, there is a need for financial reconstruction of the corporate sector. The crises have led to large increases in domestic and foreign debt burdens of both the private and public sectors. At the end of 1997, total (domestic and foreign) debt of private and public sectors in Korea, Malaysia, and Thailand exceeded 225

Figure 3.7. ASEAN-4 Plus Korea: Stock of Debt at End-1997¹

(Percent of GDP)

Private sector debt dominates the large overall debt burden in the Asian crisis countries.



Sources: National authorities; and IMF staff estimates.

¹Based on end-1997 exchange rates.

²Banking sector credit.

⁵⁰Based on past experience (over the period 1975–97), it takes, on average, about three years for output growth to return to trend following a banking crisis—see “Financial Crises: Characteristics and Indicators of Vulnerability,” Chapter IV in the May 1998 *World Economic Outlook*, pp. 74–97.

⁵¹See “Resolving Banking Sector Problems,” Box 6 in the May 1998 *World Economic Outlook*, pp. 80–81.

Table 3.12. ASEAN-4 Plus Korea: Macroeconomic Developments and Debt Dynamics¹*(Average percent change unless otherwise indicated)*

Country	Developments in 1997				Estimated Cumulative Increase in 1996 Debt-to-GDP Ratio, December 1997 ² (percentage points)	Developments in January–June 1998				Estimated Cumulative Increase in 1996 Debt-to-GDP Ratio, June 1998 ² (percentage points)
	Interest ¹ rate	Inflation	Growth	Exchange rate		Interest ¹ rate	Inflation	Growth	Exchange rate	
External debt										
Indonesia	8	7	5	-52	47	13	43	-12	-50	88
Korea	8	4	6	-43	40	10	6	-5	6	39
Malaysia	8	3	8	-33	29	10	4	-5	-1	39
Philippines	9	6	5	-29	26	10	7	—	-5	30
Thailand ³	8	6	—	-44	48	9	5	-8	16	35
Domestic debt										
Indonesia	27	7	5	-52	14	44	43	-12	-50	11
Korea	13	4	6	-43	3	21	6	-5	6	13
Malaysia	8	3	8	-33	-3	11	4	-5	-1	3
Philippines	13	6	5	-29	1	20	7	—	-5	4
Thailand	16	6	—	-44	10	24	5	-8	16	27

Note: Assumes that the end-period stock of debt is completely rolled over at the average interest rate.

¹The interest rate used for the external debt calculation is the average annual offshore rate, which is calculated as the eurobond spread plus U.S. short-term interest rate. For the domestic debt calculation, the interest rate used is the average annual short-term domestic rate.

²Estimated cumulative impact on the debt-to-GDP ratio, from its December 1996 level, of the change in the interest rate, the exchange rate, and nominal GDP during 1997 (and during the first half of 1998).

³Since data for Thailand on quarterly GDP is not available, the projected growth rate for 1998 is used instead.

percent of GDP, while in Indonesia it stood at around 190 percent of GDP. Unlike in the Latin American debt crisis of the 1980s, most of the debt is private rather than sovereign. In Korea, Malaysia, and Thailand, private sector debt accounted for over 85 percent of total debt at end-1997 (Figure 3.7; see preceding page), while in Indonesia and the Philippines private debt amounted to 70 and 60 percent, respectively, of total debt.⁵² The composition of debt has varied significantly across countries, with external debt as a proportion of GDP particularly high in Indonesia, Korea, and Thailand.

Large corporate debt burdens have undermined the solvency of many potentially viable enterprises, and corporate bankruptcies have risen sharply. The debt overhang has also made it very difficult for less financially stressed enterprises to access capital markets; it has impaired the ability of otherwise viable firms to obtain credit for working capital and trade, which has contributed to the sharp contractions in output. The debt problem has also acted as a disincentive to the investment of new resources in debt-ridden enterprises since the benefits would in large part accrue to holders of old debt.

Although the current debt burdens in many of these countries are very large, they reflect not only the do-

mestic and foreign borrowing undertaken in the years preceding the crises, but also the sharp currency depreciations and increases in interest rates that have occurred subsequently (Table 3.12). In Indonesia, for example, even if there had been no new borrowing after the end of 1996, macroeconomic developments alone, of which currency depreciation is dominant, would have raised the 1996 debt-to-GDP ratio by close to 50 percentage points by December 1997 and by over 85 percentage points by March 1998. Restoring macroeconomic stability and preventing further collapses in exchange rates is therefore critical to preventing further increases in debt burdens. Indeed, just as the steep currency depreciations were important in boosting debt burdens, a return of investor confidence and the consequent appreciation of currencies will reduce them. Nevertheless, even with a more favorable macroeconomic environment, it appears that some form of private sector debt restructuring will be essential for the medium- and long-term recovery of the crisis economies. While burden sharing between debtors and creditors should be an important element of a restructuring process so as to minimize future moral hazard problems, the solutions to be adopted—which may need to involve a mix of debt restructuring, debt forgiveness, reduced interest rates, and debt-for-equity swaps—will need to be worked out on a case-by-case basis. Any provision of public funds should be limited so as to minimize the burden on taxpayers, but the authorities need to establish the legal and regulatory frameworks within which restructuring exercises can be fruitfully carried out. Corporate debt-restructuring

⁵²A more appropriate measure of corporate solvency is the debt-equity ratio. Although data on debt-equity ratios are not systematically available for many of the crisis countries, the sharp declines in equity prices together with the steep currency depreciations and increases in interest rates suggest that corporate indebtedness has risen severalfold.

Box 3.2. Summary of Structural Reforms in Crisis Countries

The IMF-supported programs and policy advice to the Asian crisis countries have placed particular emphasis on wide-ranging structural reforms of the financial and corporate sectors, competition and governance policies, and trade regimes. In broad terms, the suggested reforms may be summarized as follows.

Financial and Corporate Sector Reforms

- Closure of insolvent financial institutions, with their assets transferred to a resolution or restructuring agency (Korea, Indonesia, and Thailand); together with recapitalization and mergers of others (all countries). The reform programs in Malaysia and Thailand place particular importance on the finance company sector.
- Announcement of limited use of public funds for bank restructuring; actual funds used to be made explicit in the budget (all countries).
- Measures to significantly strengthen prudential regulations, including loan classification and provisioning requirements, and capital adequacy standards (all countries).
- Measures to strengthen disclosure, accounting, and auditing standards, as well as the legal and supervisory frameworks (all countries).
- Liberalization of foreign investment in domestic banks (Korea, Indonesia, and Thailand).
- The introduction of more stringent conditions for official liquidity support (Indonesia, Malaysia, and Thailand).
- Strengthening of prudential regulations on loan exposure (all countries).
- Introduction of funded deposit insurance schemes (planned in Indonesia and Thailand; under consideration in Malaysia; already in place in Korea and the Philippines).
- Restructuring of domestic and external corporate debt (Indonesia, Korea, Thailand) and closure of nonviable firms (Korea).

Competition and Governance Policies

- Liberalization of restrictive marketing arrangements for a variety of key commodities (Indonesia).
- Establishment of competitive procedures for privatization of government assets and for procurement (Indonesia; planned in Malaysia and Thailand).
- Announcement of bans on or limits to the use of public funds to bail out private corporations (Indonesia, Korea, Malaysia, and Thailand).
- Introduction or strengthening of bankruptcy laws and exit policies (Indonesia, Korea, and Thailand).
- Acceleration of privatization or closure of nonviable public enterprises (Indonesia).
- Strengthening of corporate disclosure standards (Korea).
- Liberalization of foreign investment in ownership and management in sectors other than the financial sector (Korea, Indonesia, Malaysia, and Thailand).

Trade Reforms

- Reduction of import tariffs and export taxes (Indonesia).
- Easing of quantitative import or export restrictions (Indonesia and Korea).

Social Policies

- Labor-intensive public works programs (Indonesia, Thailand) and expansion of unemployment insurance system (Korea).
- Protection of low-income groups from increases in prices of food and other essentials (Indonesia, Malaysia, the Philippines, Thailand).
- Provision of higher spending for health and education (Indonesia) and reallocation of budgetary expenditures to health programs for the poor (Thailand).
- Expansion of scholarship and loan programs to minimize number of student dropouts (Thailand, Malaysia).
- Provision of subsidized credit for small and medium-sized enterprises (Indonesia, Malaysia).

efforts are now under way in Indonesia, Korea, and Thailand, but this is likely to be a drawn-out process.

Besides the needed restructuring and recapitalization of the banking system and the nonfinancial corporate sector, financial reforms are required to prevent a recurrence of similar crises. There is a clear need for stronger prudential, supervisory, accounting, and legal standards, as well as improved corporate governance and the establishment of more transparent relations among government, banks, and corporations (Box 3.2).

* * *

From a long-term perspective, a fundamental question facing the east Asian economies is whether they can gradually shift from mainly input-driven growth to growth that is based more on stronger gains in efficiency. That will depend on continuing improvements in the institutional infrastructure to provide a support-

ive climate for investment and the supply of finance, risk taking and innovation, and the efficient allocation of investment. The crisis has brought to the fore the structural weaknesses that in recent years have led to the inefficient use of capital in the economies concerned and that, if left unaddressed, would have eroded the scope for rapid growth even in the absence of the crisis. These weaknesses include the jump in investment rates in the first half of the 1990s to levels that were not sustainable, especially in view of the high reliance on foreign saving. They also included, in a number of economies, excessive corporate sector leveraging, declining rates of return, excess capacity in some industries, and property market bubbles. Perhaps most critical was the growing fragility of financial systems.

To restore the long-term health of the crisis economies, it will of course be necessary to work off the ex-

cesses that have accumulated in recent years. This will require a considerable effort to restructure the financial system and, to some extent, the corporate sector. However, it would be wrong to view the crises as simply a cyclical episode from which growth eventually will bounce back to the rapid pace these economies enjoyed in the past. The crisis has revealed fundamental weaknesses that will require profound reforms to foster more efficient and robust financial systems, substantially reduce the role of governments in financial

intermediation, and strengthen governance and accountability in the corporate sector. That is why financial sector restructuring and other structural reforms are at the heart of the IMF-supported programs. Through such reforms the region in the future may well be able to combine somewhat lower—but more sustainable—levels of investment with stronger productivity growth. The outcome may well be a growth trend that is less steep than in the past, but that still is impressive by international standards.