Miracles and Crisis:
East and Southeast Asian Countries: Boom, Collapse and Recovery

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1. Introduction

For over thirty years four countries were among the fastest growing in the world, granted the title of 'miracles' by the World Bank.[1] From the early 1960s to the mid-1990s Indonesia, the Republic of Korea, Malaysia and Thailand averaged GDP growth rates in excess of six percent.[2] In 1997 all four entered into a severe economic crisis, with Indonesia and Thailand suffering economic collapse, while Korea and Malaysia experienced sharp decline. While severe, these depressions were followed by recovery to moderate growth, though slower than during the thirty year boom. This chapter analyses that history of growth, crisis and recovery.

Second 2 reviews the long boom and considers some of its causes. This is followed in Section 3 by an analysis of the crisis years. The orthodox explanations are considered and rejected as improbable. More convincing is that to varying degrees, the governments of the countries adopted policies that made their economies increasingly vulnerable to the external 'shocks' that occurred in the 1990s, which invited financial speculation. In this section the declines suffered by the previously rapidly growing four are compared to the much stronger performances of the Asian transition countries (especially China and Vietnam). In the fourth section the recovery during the 2000s is considered. Section 5 seeks to account for the high growth rates of the IKMT countries during their boom, and of other fast growing countries in the region.

2. Long Boom, 1960-1996

The central problem in considering the remarkable performance over three decades of the IKMT countries is to separate ideology from economic analysis. During

the 1970s, mid-way through the long boom, the analysis was straight-forward, that these countries had enjoyed relatively high investment rates that lay the basis for a potentially high growth rate, and industrial policies combining export promotion with subsidies and import substitution provided the medium term demand stimulus.[3] From the latter part of the 1970s through the 1980s and into the 1990s, economic ideology shifted towards an increasingly fundamentalist neoliberalism. This shift was manifested in a 1993 World Bank study called, inaccurately,[4] the *East Asian Miracles*, in which it was argued that the Asian boom countries represented examples of the policy application of free market principles, 'market-friendly' policies. Part of this argument was the assertion that this alleged policy approach explained why the Asian 'miracles' had performed so much better than the Latin American countries.

The unfavorable comparison to the Latin American countries has little validity. The orthodoxy attributes the difference in performance between the Latin American countries and the 'miracles' to basic differences in policy-orientation: that the high growth Asian countries pursued sound macro policies, while Latin American governments persisted with 'closed economy', import substitution regimes characterized by heavy state intervention.[5] This interpretation has been the source of considerable mischief in policy-advice from international organizations.

If the Latin American governments failed on macro basics, while the governments of the Asian 'miracles' excelled prior to some crisis period, then it provides a superficial explanation for the Latin American debt crisis of the 1980s and, by implication, for the later Asian crisis which is treated in the next section. The Latin American crisis would be explained by unwise policy choices over several decades, and the Asian financial crisis[6] by deterioration in what had previously been sound policy fundamentals. Inspection of the statistics yields unexpected conclusions. The oft-quoted 'stylized facts' about Latin America prove invalid: on average, fiscal deficits were not higher in the Latin American countries, and nor did government expenditure take a significantly larger share of national income.[7]

Whatever the explanation for the growth rates of Indonesia, Korea, Malaysia and Thailand, they were impressively high as Table 2.1 shows. Indonesia had slow and negative rates in the first half of the 1960s, but the other three countries grew in excess of

six percent, and during the 1980s and into the 1990s this rate of growth was sustained and exceeded by all four countries. As impressive as these growth rates were, they were not unique to the market economies of East and Southeast Asia, because China grew even faster in the 1960s and almost as fast in the 1970s, well before the market reforms were introduced. The most obvious explanation of the growth rates for the four 'miracles' and China was high investment, as Table 2.2 demonstrates. During the 1970s the share of gross investment in GDP in the IKMT group was close or above twenty-five percent, rising towards thirty percent in the 1980s, and well above thirty percent in the 1990s before the Asian crisis of 1997-1999. China, too, had high investment rates, of over thirty percent of GDP from 1970s onwards.

The Philippines was no exception to the investment and growth rates link. While its growth rates in the 1960s and 1970s were below those for the IKMT group (except for Indonesia in the 1960s), they were high compared to developing countries as a whole. The dramatic fall in the 1980s can be explained by the same growth-depressing effect suffered by the Latin American countries, a rapidly growing and unsustainable external debt.[8] The growth depressing effect is demonstrated in Table 2.3, which calculated the observed investment-growth ratio by country.[9] For the ten countries in the table over four time periods, in only three cases did this ratio exceed five, the Philippines during the 1980s and 1990s, and Myanmar in the 1980s. For the other countries, higher ratios were typically associated in rapid growth rates, most notably Thailand, whose highest value for the investment-growth ratio was associated with the country's most rapid growth rate for the four time periods.[10] The emphasis that some authors place on export growth as the explanation for the long boom may confuse cause and effect, especially since the argument cannot be made for Indonesia and is dubious for Malaysia.[11] Section 5 considers these investment-growth ratios in detail.

In addition to high average rates of growth, the variation in growth for IKMT group was relatively low, as Figure 2.1 shows. Korea had the highest average and also had the highest coefficient of variation, .39, which implies an annual average deviation of less than two percentage points in absolute value. The annual variation for the other three countries was in each case less than 1.5 percentage points. While the cyclical patterns of the countries do not coincide, one can observe clear patterns in the growth rates. As the

Asia crisis approached, Indonesia and Malaysia were in an upswing, with growth rates well above the long term average, Korea was in the process of recovery to more rapid growth, and only Thailand was experiencing relative decline. The Philippines was also in a cyclical upswing (Figure 2.2), after a negative rate in 1991. Thus, with the possible exception of Thailand, the pre-crisis growth rates of the IKMT group and the Philippines did not suggest the growth collapse to come.

For the transition countries growth was strong in the 1990s (Figure 2.3), particularly robust for China at 10.5 percent a year and Vietnam at 7.9. Slower but impressive were Laos 6.5 and Cambodia 5.5. The very rapid rates of China and Vietnam resulted from high investment rates in China, and for both countries the dynamic gains from initial introduction of market regulation in key sectors. As is well documented, the governments of both countries pursued a set of policies designed to closely manage the transition from central planning to market regulation: 1) regulated trading systems with managed exchange rates, 2) central role of public sector enterprises, 3) encouragement of foreign investment within tight regulation, and 4) expansionary macro policies.[12]

At the mid-1990s there seemed no reason to doubt that rapid growth in the East and Southeast Asian region would continue.[13] Even the weakest of the economic performers, Myanmar and the Philippines displayed increasing growth rates. Yet, in the second half of the 1990s the market economies of the region would enter into collapse or severe recession. The IKMT group would be a miracle no more, with Indonesia and Thailand suffering almost unprecedented decline for countries not affected by armed conflict. The next section considers why this occurred and the economic consequences.

Table 2.1: Growth of GDP, 1960-1996

	1960-69	1970-79	1980-89	1990-96
Market-based				
Indonesia	3.7	8.2	6.4	8.0
Korea	8.3	8.1	7.6	7.6
Malaysia	6.5	7.6	5.9	9.5
Thailand	7.8	7.5	7.3	8.6
Average	6.6	7.9	6.8	8.4
Philippines	5.1	5.8	2.0	2.8
Transition				
Cambodia	nd	nd	7.7	5.5
Laos	nd	nd	4.1	6.5
Vietnam	nd	nd	4.5	7.9
Average	nd	nd	5.5	6.6
Other				
Myanmar	3.0	4.4	1.9	5.5
China	8.6	7.4	9.8	10.5

Source: World Bank, *World Development Indicators 2008*, online database.
Notes: China from 1963; Laos and Vietnam from 1985; Cambodia from 1988.

Table 2.2: Gross Investment as share of GDP, 1960-1996

	1960-69	1970-79	1980-89	1990-96
Market based				
Indonesia	9.7	25.0	28.3	30.8
Korea	19.0	25.7	30.4	37.4
Malaysia	17.3	24.4	27.8	38.7
Thailand	20.5	25.8	29.4	41.2
Average	16.6	25.2	29.0	37.0
Philippines	19.5	27.0	22.5	22.9
Transition				
Cambodia	16.4	12.5	10.2	15.4
Laos	nd	nd	8.8	27.5
Vietnam	nd	nd	15.1	21.5
Average	nd	nd	11.4	21.5
Other				
Myanmar	12.1	13.3	16.1	13.5
China	20.8	30.6	35.4	38.7

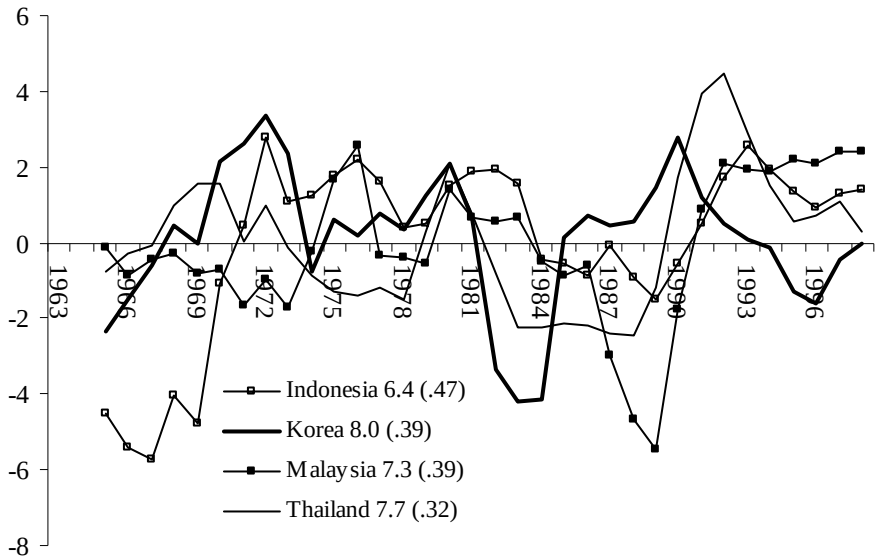
Source: World Bank, *World Development Indicators 2008*, online database.
Notes: China from 1963; Laos and Vietnam from 1985.

Table 2.3: Gross Investment-Growth Ratios, 1960-1996

	1960-69	1970-79	1980-89	1990-96
Market based				
Indonesia	2.6	3.1	4.4	3.9
Korea	2.3	3.2	4.0	4.9
Malaysia	2.6	3.2	4.7	4.1
Thailand	2.6	3.4	4.0	4.8
Average	2.5	3.2	4.3	4.4
Philippines	3.9	4.7	11.2	8.1
Transition				
Cambodia	nd	nd	1.3	2.8
Laos	nd	nd	2.1	4.2
Vietnam	nd	nd	3.3	2.7
Average	nd	nd	2.3	3.2
Other				
Myanmar	4.0	3.0	8.3	2.4
China	2.4	4.1	3.6	3.7

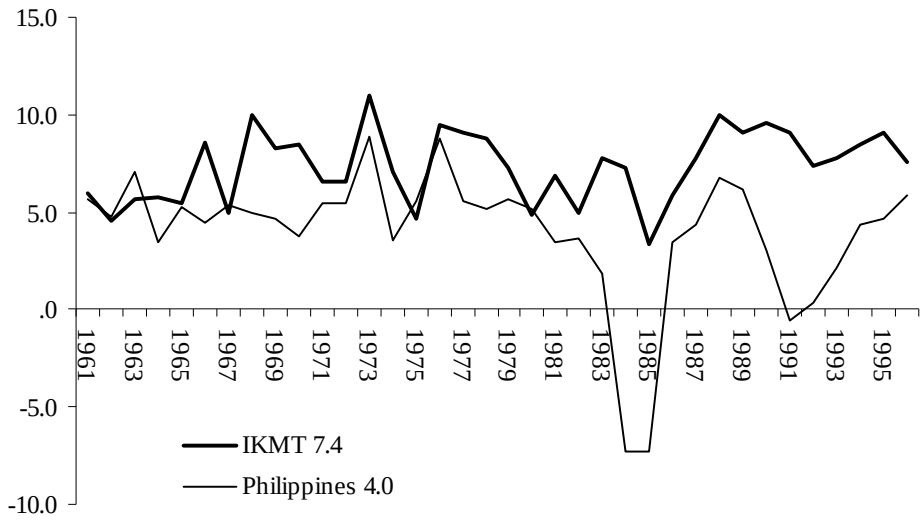
Note: Calculated form previous two tables.

Figure 2.1: Absolute deviations of GDP growth rates from period average, four rapidly growing ESEA countries, 1960-1996 (3 year moving average)



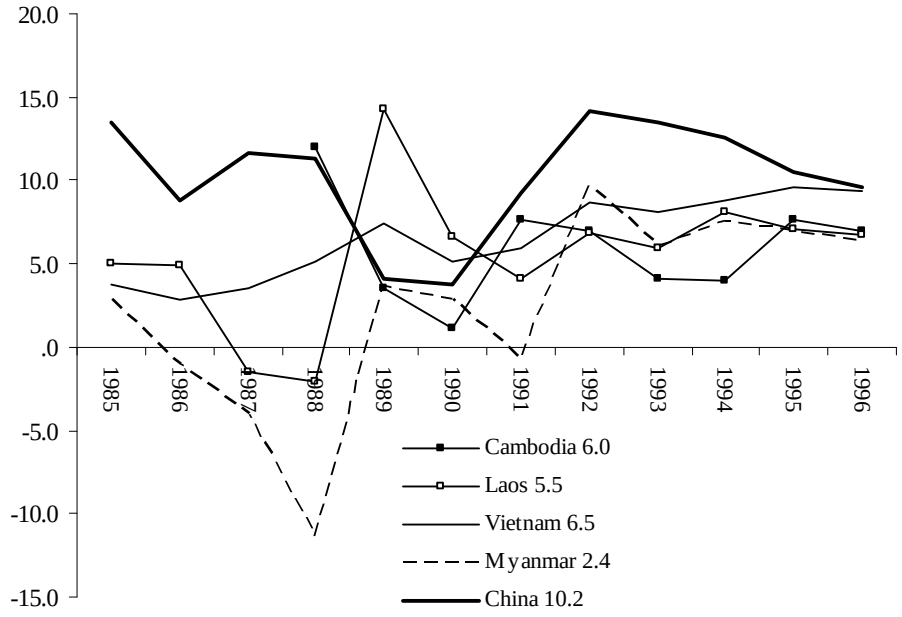
Note: The number after the country name is the average rate for the entire period, with the coefficient of variation in parenthesis.

Figure 2.2: GDP growth rates, Philippines and the high growth countries average, 1960-1996



Note: The number after the country name is the average rate for the entire period

Figure 2.3: GDP growth rates, Asian transition countries and Myanmar



Note: The number after the country name is the average rate for the entire period

3. Crisis and Collapse, 1997-2000

The form taken by the Asian financial crisis was sudden and massive capital flight. The explanation for the capital flight that swept the IKMT group of countries lies in three key aspects of what came to be called the 'Asian financial crisis': 1) the suddenness with which it occurred in the four countries;[14] 2) the failure of this crisis to affect the other countries of East and Southeast Asia except for the Philippines to a much milder extent; and the quickness of the subsequent recovery. Taken together, these three characteristics suggest that the crisis was not the result of fundamental weakness in the IKMT economies.

Figure 3.1 shows quarterly changes in GDP for Indonesia, Korea, Malaysia and Thailand for the first quarter of 1995 through the fourth quarter of 2000. As noted in the previous section, the Thai economy was in a downturn beginning in the last quarter of 1996, well before the crisis hit. In Korea a fall in growth occurred a quarter after Thailand (first quarter of 1997), to 4.9 percent compared to over seven percent for the first quarter of 1996, but recovered to six percent in the second quarter. However, in the third quarter of 1997 the crisis hit Korea, and the year ended on a growth rate of less than three percent, to turn negative during every quarter of 1998. The downturns for Indonesia and Malaysia coincide with Korea's and proved more severe.

In 1998 growth was negative for all four countries in every quarter, but by the first quarter of 1999 Korea had begun its recovery, and in the second quarter growth was positive for all four countries. For Korea the recovery was spectacular, with growth averaging almost ten percent over seven quarters in 1999 and 2000, quite strong for Thailand, and relatively weak for Indonesia and Malaysia. These recoveries, including Korea's, would prove uneven in subsequent years, as analyzed in the next section. However, by the end of 1999 the crisis was over for all four countries, having struck with virulent, but brief force.

No other country in the region suffered as the IKMT group did. The next section, covering the economic recovery of the IKMT countries in the 2000s, looks at the performance of the transition countries and Myanmar. Here, quarterly data on the Philippines and China allow detailed inspection of those two countries during the Asian crisis, shown in Figure 3.2. While the Philippines suffered a contraction in 1998 and

1999, the downturn was considerably less than for the IKMT group, with only three quarters of slightly negative growth, a cumulative total for 1998 of less than one percent and positive growth rates subsequently. In the case of China, there appears to have been no effect, though the quarterly average for 1999 of 7.1 percent was almost one percentage point lower than the previous year.

Having established the brevity of the crisis, it is instructive to consider the orthodox interpretation of the causes of the crisis, as stated in an article in the IMF house journal, *Finance and Development*:

> To a large extent, these countries were the victims of their own success. Because of their strong economic performance throughout the early 1990s, the Asian countries were in denial when problems began to surface. Believing they were immune to the type of crisis that erupted in Latin America in the 1980s because they did not have the large fiscal deficits, heavy public debt burdens, rapid monetary expansion, and structural impediments that had made Latin America vulnerable….
>
> The underlying causes of the Asian crisis have been clearly identified. First, substantial foreign funds became available at relatively low interest rates, as investors in search of new opportunities shifted massive amounts of capital into Asia. As in all boom cycles, stock and real estate prices in Asia shot up initially, so the region attracted even more funds. However, domestic allocation of these borrowed foreign resources was inefficient because of weak banking systems, poor corporate governance, and a lack of transparency in the financial sector. These countries' limited absorptive capacity also contributed to the inefficient allocation of foreign funds. Second, the countries' exchange rate regimes, exchange rates were effectively fixed, gave borrowers a false sense of security, encouraging them to take on dollar-denominated debt. Third, in the countries affected by the crisis, exports were weak in the mid-1990s for a number of reasons, including the appreciation of the U.S. dollar against the yen, China's devaluation of the yuan in 1994, and the loss of some markets following the establishment of the North American Free Trade Agreement. (B. B. Aghevli, 'The Asian Crisis: Causes and Remedies,' *Finance and Development* 36, 7, 1999)

The quotation gives several 'clearly identified' causes of the crisis: 1) complacency as a result of previous success; 2) excessive foreign borrowing by the private sector ('substantial foreign funds'); 3) weak banking systems, poor corporate governance and lack of financial transparency; 4) fixed exchange rates that encouraged foreign borrowing; and 5) weak export growth in the mid-1990s. The striking characteristic of all these explanations is their vagueness, which implies difficulty if not impossibility of verifying them.

The first 'explanation', complacency, can be discarded as tautological (all expansions come to an end at some point) and beyond verification. The second, third and fourth explanations all refer to foreign capital inflows, which had been considered a virtue of the IKMT countries prior to the crisis. In 1996 the section on managing capital flows in East Asia in the World Bank *Annual Report*, one finds the IKMT countries lauded for their capital inflows as well as complimenting the countries for 'effectively' using the capital flows:

> East Asian countries have been successful in integrating with the world market for both capital and goods. Since 1990, the region has become the predominant destination of private capital flows. In 1995 alone, developing countries in the region received an estimated $108 billion in foreign capital flows, of which $98 billion was from private sources, including $54 billion in direct investment. The surge in foreign capital flows was induced by rapid economic growth, *sound economic fundamentals*, and a high level of integration with the world market… [T]hese countries have been able to use the foreign capital inflows more effectively than other developing regions, thereby contributing to rapid technological upgrading.[15]

Given the World Bank's favorable comments on capital flows and the domestic use of them, the argument in *Finance and Development* that institutional weakness was an explanation of the Asian crisis appears as a retrospective judgement, no doubt preferred to explanations linked to the capital account liberalization urged by the IMF.

The assertion that 'export weakness' lay the basis for the crisis is more difficult to assess, because it requires one to define 'weakness' in the specific context of each country in the mid-1990s, then explain why this would provoke a crisis of capital flight. Figure 3.3 shows annual export growth for the IKMT countries, and its interpretation is

not obvious. Three of the four countries experienced falls in the rate of exports growth in 1996 (to a negative rate for Thailand). However, for two of the countries, Korea and Thailand, it was a one-year fall from several years of increasing or steady strong growth. Further, for two of the countries with declines, Korea and Malaysia, the rate of growth in 1996 was above ten percent.

If there were a link between export growth and capital flight it is reasonable to think this would be *via* foreign exchange reserves, which are shown in Figure 3.4 for 1981-1996, measured in months of import cover. For three of the countries the level of reserves in 1996 was close to the highest level of the sixteen year period, with the exception being Malaysia. Yet is was not Malaysia where the capital flight occurred first, but Thailand, whose reserves during 1994-1996 were at the highest level for the two decades.

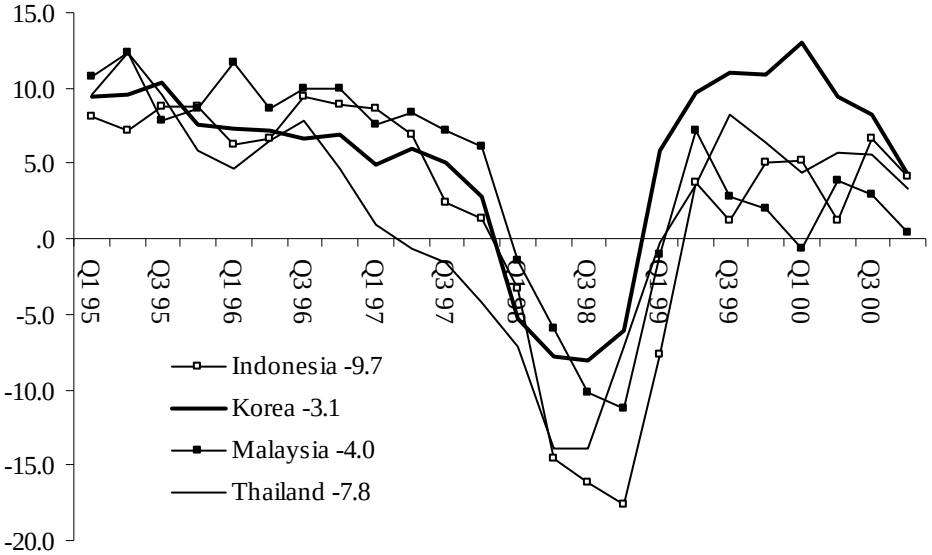
While the reserve position of the four countries provides little indication of weakness, the same cannot be said for the current account balances, shown in Figure 3.5. For three of the countries, Korea, Malaysia and Thailand, a deterioration of the current account began in the second half of the 1980s, the first two countries moving from substantial surpluses into deficits. In the case of Thailand the deterioration began from a current account closed to zero in 1986 to deficits in well in excess of five percent GDP, until a sharp improvement to about minus four percent in 1996, the year the crisis struck. Though the Indonesian current account was about the same from the late 1980s onwards, it remained negative for all years, due entirely to debt service payments, as a comparison of Figures 3.5 and 3.6 reveals.

The deterioration of the current accounts suggests an explanation for the crisis that swept the four countries. In 1994 persistent current account deficits resulted in a speculative run on the Mexican *peso*. Later in the decade Ecuador, Argentina and Russia would suffer speculative attacks, and the Asian crisis can be seen as one chapter in an unfolding drama of currency wars. The persistent deficit of Thailand made that country the obvious candidate for the initial speculative strike, which proved immediately successful from the speculators' point of view. The success of the speculative attack in Korea, Malaysia and Thailand is shown in Figure 3.6. Worse affected was Korea, whose exchange rate depreciated by over one hundred percent, with the greatest appreciation at

the end of 1997. However, the appreciations of these three countries were minor compared to what occurred in Indonesia (Figure 3.7). In mid-July 1997 the Rupiah stood at 2452 to the US dollar, and in mid-December it had risen to over 5700. Massive increases in the central bank rate did nothing to check the collapse of the Rupiah, which reached over 11,000 in May 1998, to hit its peak two months later at over 14,000, a depreciation of over seven-fold.

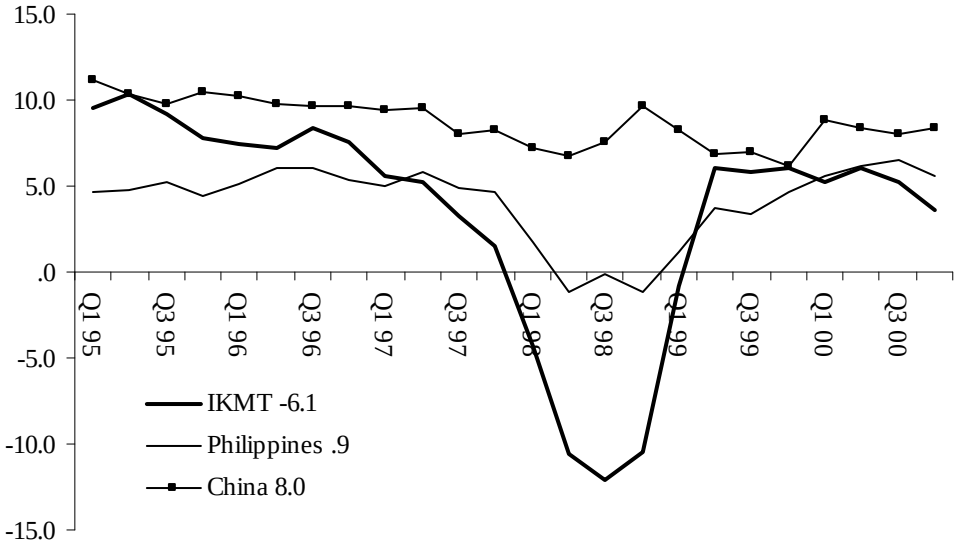
The large depreciations undermined the stability of all four countries, perhaps most importantly by rendering private external debts unsustainable. Of the four countries only Indonesia, operating under strict IMF conditionalities, took no administrative measures to control capital movements. The consequence of the currency collapse proved devastating in Indonesia, compounded by the government decision to indiscriminately recapitalize private banks, which would prove to be the most expensive recapitalization in history.[16]

Figure 3.1: Quarterly GDP of the IKMT group of countries, 1997-2000



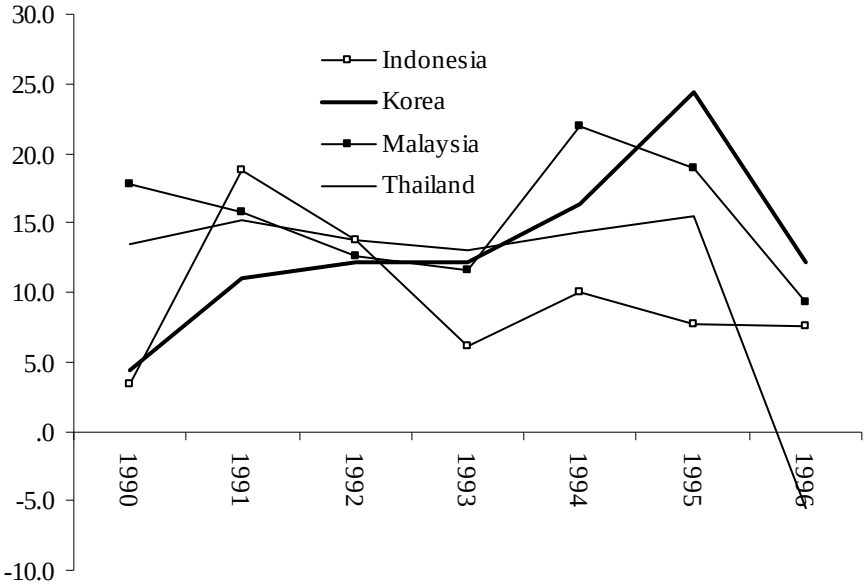
Note: Numbers next to the country names are average quarterly rates for the fourth quarter of 1997 through the first quarter of 1999.
Sources: Abeysinghe & Rajaguru (2003, p. 24), http://www.econstats.com/r/rkor__q16.htm (Korea), http://www.econstats.com/r/indonesia__q12.htm (Indonesia), and for Malaysia, http://www.adb.org/documents/books/ado/2002/mal.asp. See also http://64.233.169.104/search?q=cache:1XgryMAOymsJ:siteresources.worldbank.org/INTEAPHALFYEARLYUPDATE/Resources/550192-1194982737018/AppendixTables-EAP-Update-Nov2007.pdf+indonesia+quarterly+gdp+2005&hl=en&ct=clnk&cd=15&gl=uk

Figure 3.2: Quarterly GDP, average IKMT countries, Philippines and China, 1995-2000



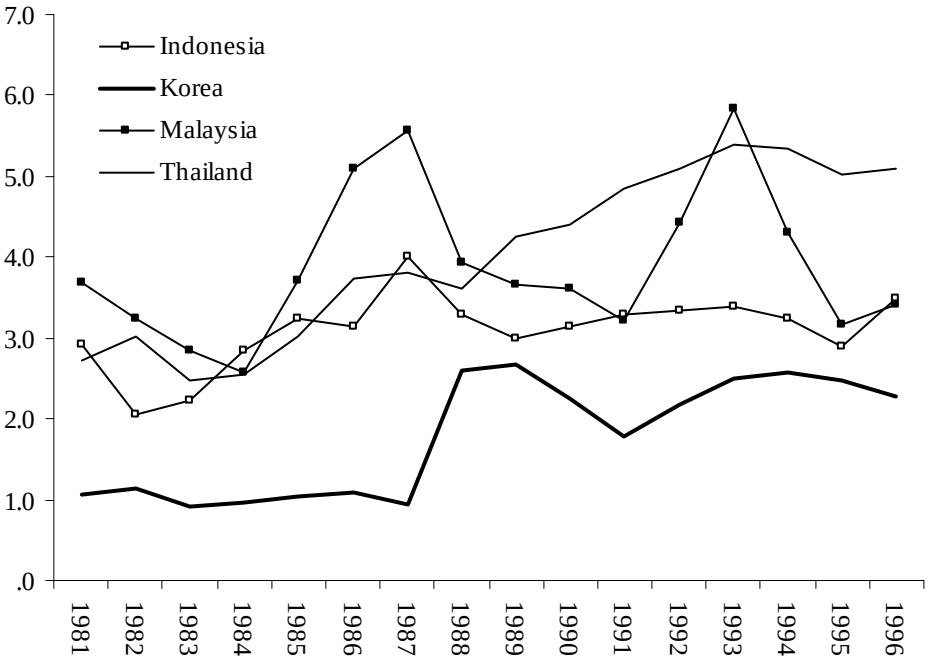
Note: Numbers next to the country names are average quarterly rates for the fourth quarter of 1997 through the first quarter of 1999.
Sources: see Figure 3.1.

Figure 3.3: Export Growth for the IKMT Countries, 1990-1996



Source: World development Indicators 2008

Figure 3.4: Foreign Exchange Reserves of the IKMT Countries
In months of import cover, 1981-1996



Source: World Bank, *World Development Indicators 2008*, online database.

Figure 3.5: Current Account as percent of GDP of the IKMT Countries, 1981-1996

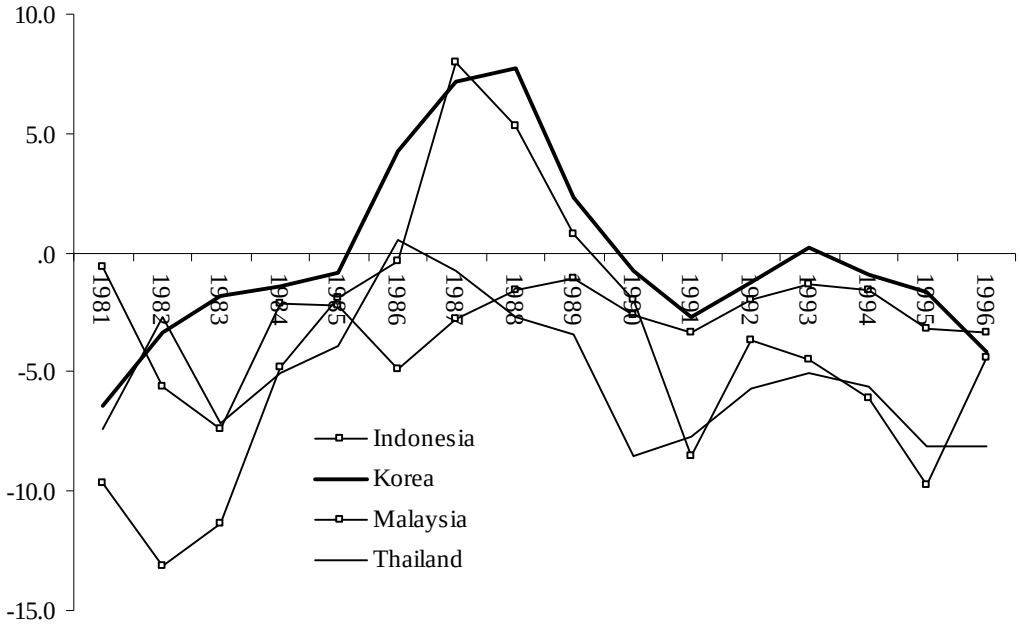


Figure 3.5: Current Account less Debt Service as percent of GDP of the IKMT Countries, 1981-1996

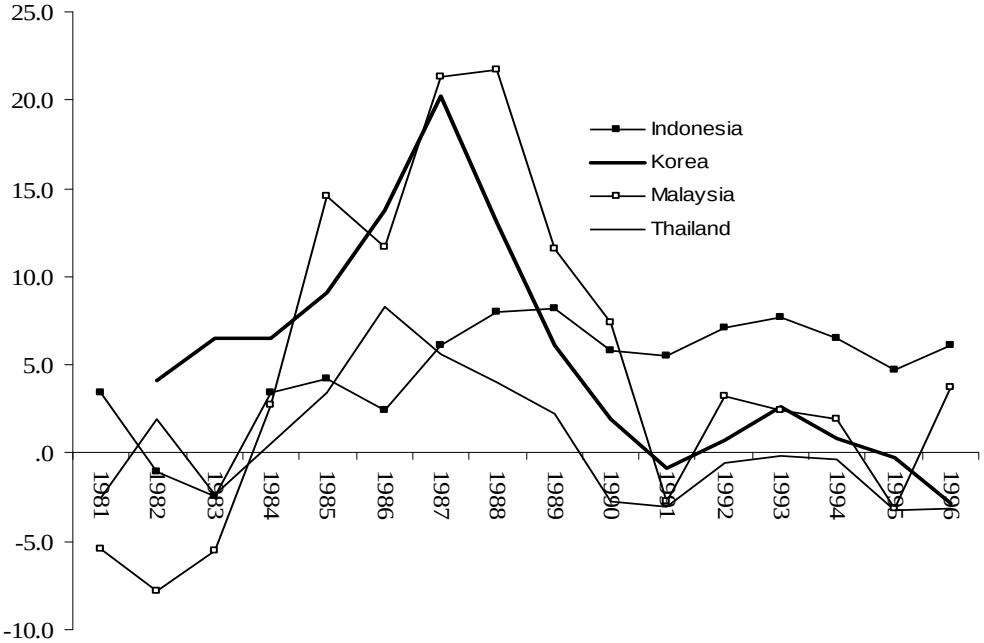
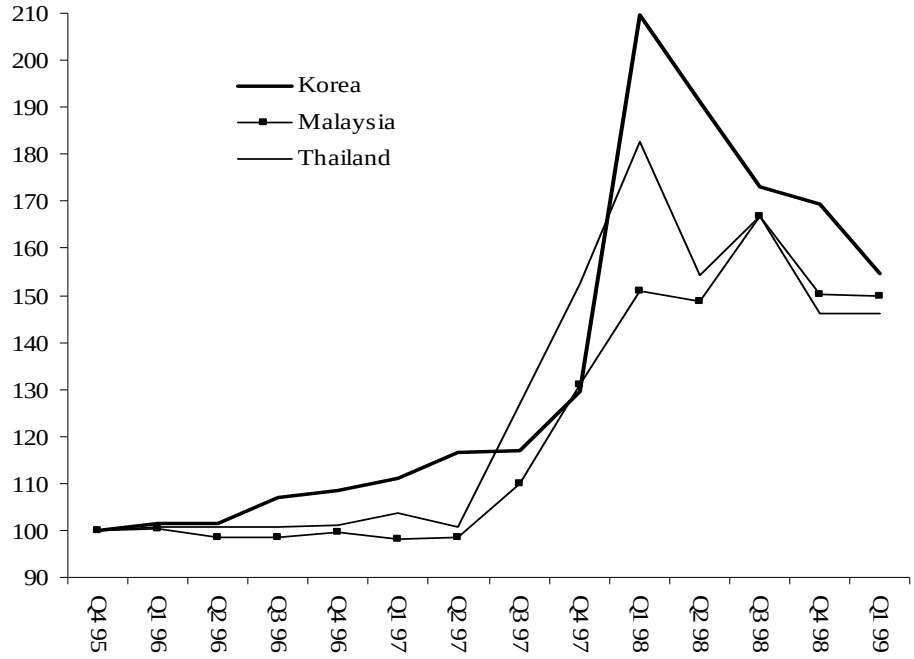
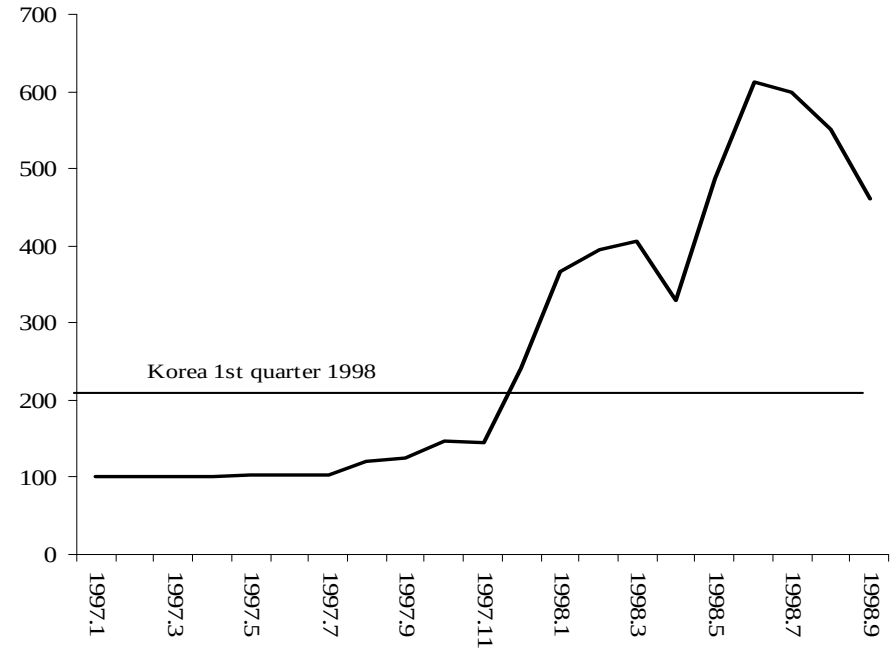


Figure 3.6: Nominal Exchange rates for Korea, Malaysia and Thailand, Quarterly 1997-1999 (4th quarter 1996 = 100)



Source: http://www.ny.frb.org/xml/fx.html

Figure 3.7: Nominal Exchange rates for Indonesia, Monthly 1997-1998 (January 1997 = 100)



Source: http://www.ny.frb.org/xml/fx.html

4. Recovery, 2000-2007

Despite the severity of the 1997-1998 crisis, especially for Thailand and Indonesia, the IKMT countries recovered to what in other regions would be considered moderately strong rates of growth. However, the recovery did not come with equal rapidity for every country, with a sustained upturn in Malaysia and Indonesia delayed into the 2000s. Once recovery was achieved, the growth rates stayed at levels substantially below those during the long boom that preceded the crisis.

After the first quarter of 1999 the IKMT countries had positive growth rates, with the exception of Malaysia, a marginally negative rate in early 2000 and another in early 2001 (see Figure 4.1). The recovery of Korea was initially the most robust, with six consecutive quarters of extremely growth. Most delayed was the recovery of Malaysia, which after an initial growth burst of over seven percent apparently to start recovery in the second quarter of 1999, averaged 1.6 percent in 2000 and less than one percent in 2001.

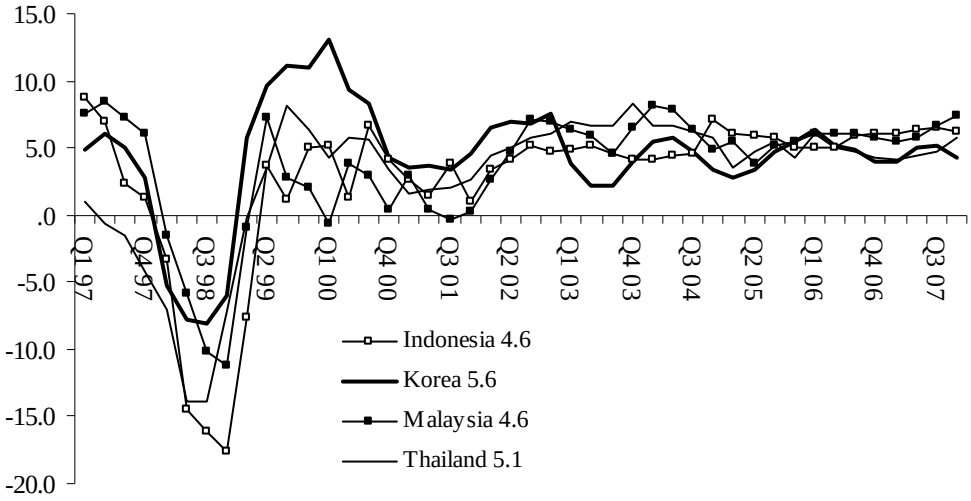
The growth rate of all four countries fell in 2001, in part because of a sluggish world economy. What the IMF defines at the 'advanced countries' grew at less than two percent during 2001-2003, and this had a clear impact on the exports of the IKMT countries, as Figure 4.2 shows. With investment still depressed, export demand now fuelled growth and strong export growth rates characterized 2000, averaging almost twenty percent across the four countries, driven by excess capacity left from the crisis and an almost unprecedented four percent growth of advanced country GDP. In 2001 export demand collapsed, with Indonesia's export growth falling below one percent, and negative rates for the other three countries.

GDP growth rates after 2001 were moderately strong and sustained, but substantially below those of the boom years. This can be explained by the continued strong role of export growth in determining aggregate demand, with investment not yet recovered and a relatively passive fiscal policy. Weak growth of the advanced countries, less than three percent during 2007, partly explains the weak export growth of the IKMT countries. One consequence of the slower growth of the IKMT countries was their unexpected growth parity with the Philippines. For decades during which the Philippine economy grew slowly or stagnated compared to its successful neighbors, but suffered

from the Asia crisis much less. By 2001 its growth rate matched that of the average for the IKMT countries, even exceeding it in 2007 (see Figure 4.3).

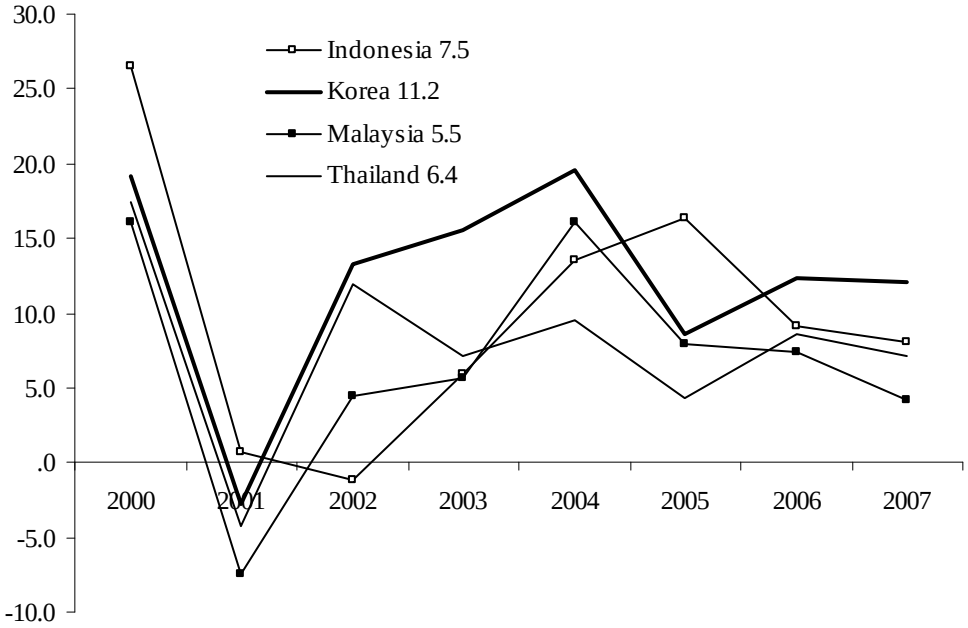
A potentially important factor in the slow-down of export growth for the IKMT countries was the rapid export expansion of other countries in the region, especially China and Vietnam. This rapid export expansion propelled the transition countries and Myanmar to growth that equal or exceeded those of the IKMT countries during their long booms (see Figure 4.4). For ten years, 1998-2007, Myanmar averaged an astounding twelve percent growth rate, China over nine percent, and Cambodia, Vietnam and Laos all over six percent. For this ten year period none of the IKMT countries grew as fast as Laos at 6.4 percent. The growth dynamics of China, and perhaps Vietnam,[17] differed from those of the other, smaller countries. These large countries had a greater potential to foster higher growth through stimulating domestic demand, which the Chinese government did towards the end of the 2000s.

Figure 4.1: Recovery, IKTM Countries, quarterly GDP growth 1997-2007



Notes: Numbers after the country name are rates of growth 1999 Q2 – 2007 Q4.

Figure 4.2: Annual Export Growth of the IKMT Countries, 2000-2007



Note: Numbers next to the country names are export growth 2000-2007.
Source: ADB 2008.

Figure 4.3: Recovery, four high growth countries and Philippines, Annual data for GDP growth, 1998-2007

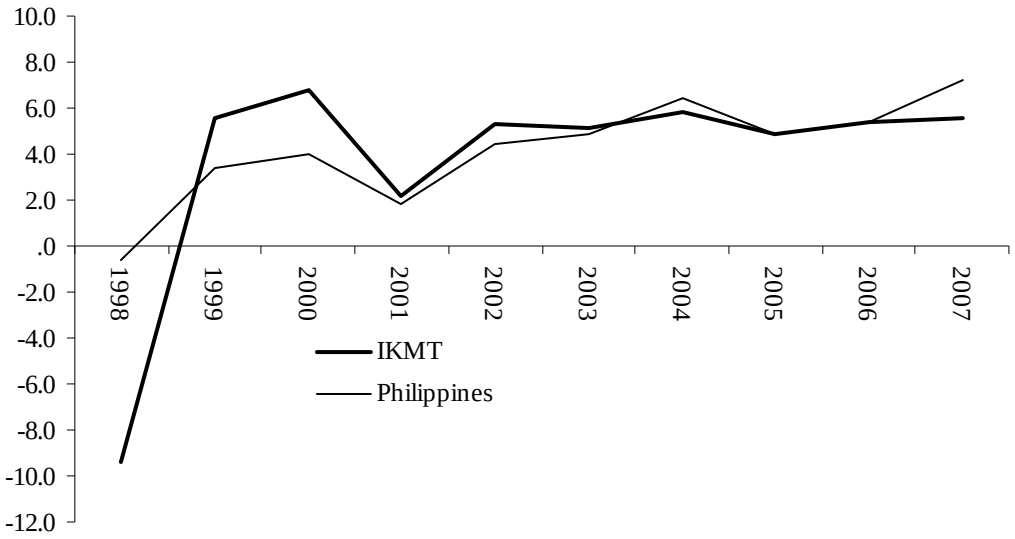
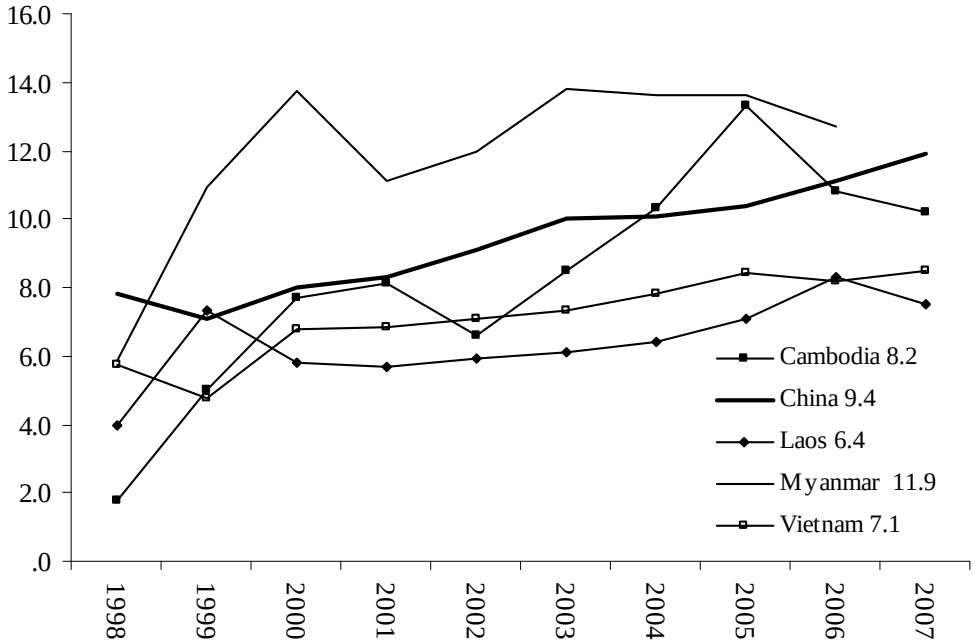


Figure 4.4: Annual growth rates of transition countries and Myanmar, 1998-2007



Note: Number next to country names are growth rates for 1998-2007.

5. Assessing the 'Miracles', Old and New

For over three decades four countries of East and Southeast Asia experienced some of the highest growth rates in the world. These growth rates turned to depression and economic collapse during the Asia crisis at the end of the 1990s. Recovery came relatively quickly, strongly suggesting that the crisis did not arise from fundamental problems of the economies. However, the recovery was to lower average growth rates, growth rates which were substantially surpassed by a new group of 'miracles', China, Cambodia, Myanmar and Vietnam.

The sustained, rapid growth of the IKMT countries, their slower post-crisis performance, and the emergence of new 'miracles' in the region raises a fundamental question about the growth potential of underdeveloped countries: are growth rates in the range of six to ten percent relevant for most countries, and, if so, how long can they be sustained? The first step in answering these questions is to define what determines growth rates. The growth theory developed in the 1950s, both by Keynesians such as Harrod and Domar, and neoclassicals, for example Solow, agreed that the potential rate of growth was determined by three factors, 1) the rate of growth of productive capacity, 2) the productivity of that capacity, and 3) in a capitalist economy the rate of return on production. In algebraic models, the first was summarized in the investment rate, the second in technical change, and the third in the balance between the growth of the capital stock and the labor force.

A useful way of considering these three factors is by expanding the Harrod-Domar model. Let Y equal GDP, K = the net capital stock, and I equal net investment. The Δ symbol is an operator indicating change between two periods.

$\Delta Y/Y = y = [\Delta Y/\Delta K][\Delta K/Y]$

$\Delta K = I$, so $[\Delta K/Y] = [I/Y] = k$, the investment-GDP ratio.

$[\Delta Y/\Delta K] = v$, the 'marginal output-capital ratio. If v and k are fixed, either in the short or longer term, the identity changes into a behavioral relationship,

$y = vk$

Technical change primarily acts by affecting the productivity of the capital stock (k), and the rate of return influences the investment share. A frequently cited source of

productivity change, especially for the IKMT countries, has been the skills of the labor force. We shall not deal with this influence because of its long term nature, and the difficulty of distinguishing among general educational levels, technical training, and work force discipline. However, we shall consider a broad interpretation of Leibenstein's 'x-efficiency'.[18] It follows from the growth equation that were no labor force constraint and no technical change, the growth rate would be determined by the net investment rate and the static capital output ratio.

On the assumption of aggregate depreciation rates of five and seven percent, an IMF study of the region in 2005 estimated capital-output ratios and net investment rates. It concluded the pre-crisis 'potential growth rates' of Indonesia, Malaysia and Thailand to be five percent and Korea to be 4.7 percent.[19] In the event, these countries averaged growth rates of over seven percent for almost three decades (see Table 2.1). The 'extra' two percentage points can be explained by three factors. First, each of the countries enjoyed growth gains through the reallocation of labor from relatively low productivity agriculture to industry, as Krugman argued. Second, the capitalists in these countries were able to gain the 'advantages of backwardness' through the adaptation of the technologies of more advanced countries.[20] This advantage was realized in several ways, through foreign investment, early protection of domestic producers, and export competition. Third, 'x-efficiency' gains were achieved through the transition to market social relations, including increased discipline of the work force.[21]

The characteristic of all three factors is their transitory nature; i.e., as their benefits are reaped, the potential to gain from them further declines. This characteristic is demonstrated in Figure 5.1, which shows as three year moving averages the ratio of GDP to gross investment ratios for the IKTM countries, 1965-2006. In the diagram each country's time series is normalized to the average for the entire period. In the legend, the log-linear pre-crisis trend coefficients, 1965-1996, are reported with their level of statistical significance, with all significant at one percent probability or lower.

The time series for each country can be interpreted as an index of the growth rate achievable from a given unit of investment. For all the countries that statistic declines, by 3.4 percent annually in the case of Indonesia, and at about two percent for the other three countries. The declines should not be interpreted as falls in the 'productivity of

capital', but as the progressive exhaustion of the 'advantages of backwardness', as each country gravitates to what the IMF study called 'the potential growth rate', or, the long term sustainable growth rate.

It should be added that the extremely high investment shares in GDP in the 1990s before the crisis, over thirty percent for all four countries, were above sustainable levels. Table 5.1 compares the growth and investment shares in the seven years before the crisis with the seven years following it. It can first be noted that the recovery involved substantially lower investment shares, by forty percent in Malaysia and Thailand, thirty percent in Indonesia and twenty percent in Korea. In every country growth rates fell by even more, which supports the argument that the advantages of backwardness were being exhausted. It would appear that the crisis of 1997-1999 accelerated this process, in part by the elimination of less efficient enterprises. In any case, the post-crisis rates of growth were remarkably close to what the IMF study estimated to be each country's potential rate of growth.

If one accepts the advantages of backwards interpretation of the IKMT countries, it has important implications for the new miracles, China, Vietnam, Cambodia and, perhaps, Myanmar. The growth China and Vietnam from the late 1980s to the late 2000s proved even more phenomenal that for the IKMT countries. After twenty years of rapid growth, our analysis predicts that these two countries are exhausting the possible gains from technological up-grading and force discipline, though some scope would remain for transfer of labor out of low productivity activities. Equally important, it would be unlike for China and Vietnam to maintain their investment shares. If the gross incremental capital output ratios reported for the 2000s in Table 2.3 were equal to the average, they imply that the capital stock in both China and Vietnam grew at eleven percent. This not a rate of investment that can be sustained, because the labor demand it creates will at some point overwhelm the process of internal labor force migration. Thus, it would be reasonable to expect growth in China and Vietnam to drop into the five-to-six percent range in the 2100s, with Vietnam's post-crisis growth much closer to that level.

Whether Cambodia or Myanmar could emerge as 'third generation miracles' would depend substantially on those two conflict-prone countries maintaining political stability. However, since neither country has generated investment shares even into the

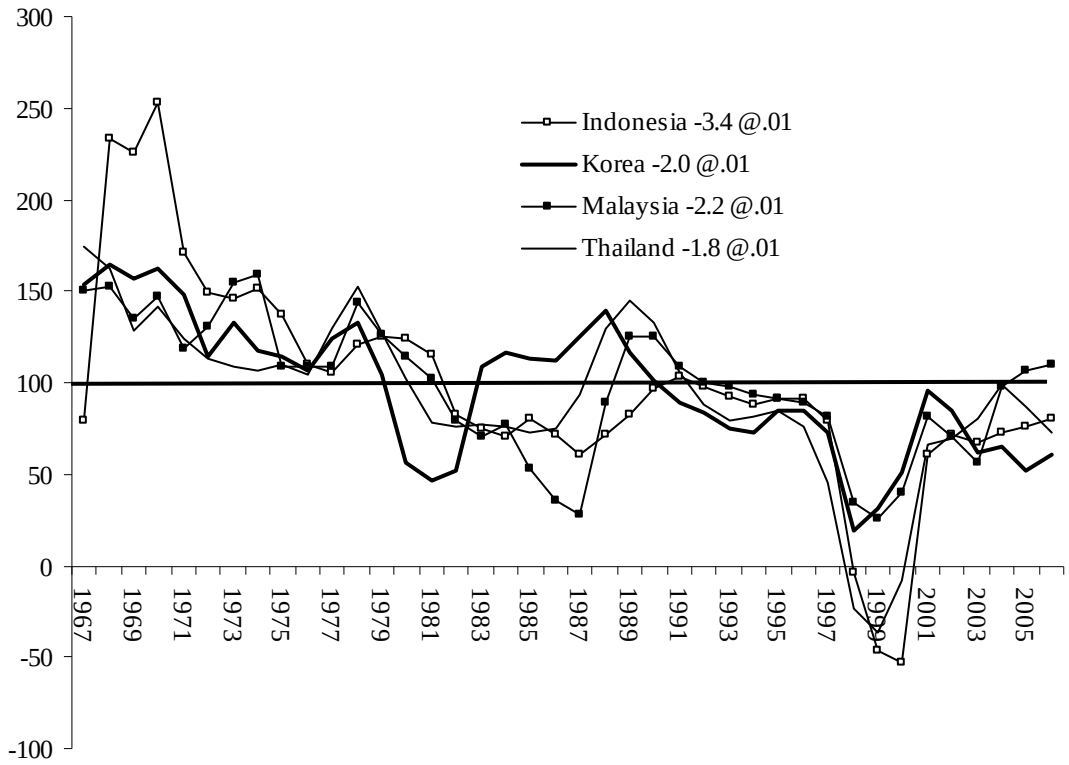
twenty percent range, miracle status is unlikely, though if, as some predict, large oil and gas reserves were found in Cambodia high investment rates would become a possibility. More likely would be a steady descent towards a potential growth rate of five percent as the gains form international migration, technological up-grading and x-efficiency are exhausted. The least likely candidate for miracle status would be the Philippines, which exhausted largely these growth sources without achieving rapid growth.

Figure 5.1: Growth Rates and Investment shares, IKMT countries, pre and post Asian financial crisis

Country	1990-96 growth	Inv/GDP	2000-06 growth	Inv/GDP	Ratio growth	Inv/GDP
Indonesia	8.0	30.8	4.9	21.2	.61	.69
Korea	7.9	37.7	5.2	29.9	.66	.79
Malaysia	9.5	38.7	5.2	23.1	.55	.60
Thailand	8.6	40.4	5.0	25.1	.58	.62

Source: *World development Indicators 2008,* online database.

Figure 5.1 Index of growth-investment share ratios for the IKMT countries, 1965-2006 (3 year moving averages, GDP growth)



Note: The numbers following the country names are the log-linear regression trend for 1965-1996 (1966 for Indonesia), and the degree of significance of the trend term.

VI. Closing Comments

The long period of steady, rapid growth of Indonesia, Korea, Malaysia and Thailand was possible because of high investment rates, plus the 'advantages of backwardness'. The severe crisis that brought this growth to a sudden stop did not result from basic flaws in the economies and governance of these four countries. It was the most virulent manifestation of the wave of speculative financial instability of the 1990s, which would be repeated in severe form on a global scale tend years later.

Partly by chance and partly as a result of the rapid development of the four countries that made them attractive to speculative attack, the crisis coincided with the approaching end of the 'advantages of backwardness' that allowed unusually high growth rates. The decreasing contribution of the growth augmenting factors resulted in strong, but slower, growth rates following the recovery, with the fundamental cause of the decline obscured by the crisis. The 'growth miracle' period had ended, and the countries approached maximum sustainable growth rates of about five percent.

The 2000s would bring the exhaustion of the same growth-enhancing factors for next generation of 'miracles', China and Vietnam, implying lower sustained growth rates in the following decade, again approaching five percent. The possibility of sustaining very high growth rates among the small countries of the region would be unlikely, since extended periods of rapid growth required investment shares considerably above actual ones.

Annex: Data sources

General Data Sources

Abeysinghe, Tilak, and Gulasekaran Rajaguru
2003 'Quarterly Real GDP Estimates for China and ASEAN4 with a Forecast Evaluation,' National University of Singapore, Department of Economics Working Paper 0404, http://nt2.fas.nus.edu.sg/ecs/pub/wp/wp0404.pdf

Asian Development Bank
2008 *Key Indicators for Asia and the Pacific 2008, 39th Edition* (Manila: ADB) http://www.adb.org/Statistics/Data/default.asp

International Monetary Fund, *World Economic Outlook 1996* (Washington: IMF, 1996) http://www.imf.org/external/pubs/weo/03devel.htm
2005 *Global Economic Outlook 2005* (Washington: IMF) http://www.deloitte.com/dtt/cda/doc/content/GlobalEconomicOutlook2005.pdf

World Bank:
http://64.233.169.104/search?q=cache:1XgryMAOymsJ:siteresources.worldbank.org/INTEAPHALFYEARLYUPDATE/Resources/550192-1194982737018/AppendixTablesEAP-Update-Nov2007.pdf+indonesia+quarterly+gdp+2005&hl=en&ct=clnk&cd=15&gl=uk

Sources by country:

Korea
http://www.econstats.com/r/rkor__q16.htm

Indonesia
http://www.econstats.com/r/indonesia__q12.htm

Malaysia
http://www.adb.org/documents/books/ado/2002/mal.asp
http://www.statistics.gov.my/eng/images/stories/files/LatestReleases/PE/petablesjune2008.pdf

Thailand
http://www.tcf.or.jp/data/19990423_Chalongphob_Sussangkarn.pdf

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[1] The word comes from the title of the book, World Bank, *The East Asian Miracle: Economic Growth and Public Policy* (Oxford: Oxford University Press, 1003)

[2] For brevity and to avoid repeated use of the dubious term 'miracles', these four countries are called the IKMT group.

[3] See the discussion in Wan-wen Chu, 'The "East Asian Miracle" and the Theoretical Analysis of Industrial Policy,' (http://www.sinica.educ.tw/~wwchu/SURVEY.pdf, no date).

[4] It is inaccurate, because a majority of the countries in the study were not in East Asia, but Southeast Asia.

[5] Bulmer-Thomas argues that it is a exaggeration to characteristic the region by this term, see Victor Bulmer-Thomas, *Life After Debt? The New Economic Trajectory in Latin America* (London: Institute of Latin American Studies, 1992.

[6] The phrase 'Asian financial crisis' is inaccurate because most of the Asian countries were hardly affected by it. Because of the terms general currency, it will be used here.

[7] For more detail, see John Weeks, 'Latin America and the "High Performing Asian Economies": Growth and Debt,' *Journal of International Development* 12, 5 (2000), pp. 625-654.

[8] A brief but useful summary of the debt crisis of the Philippines is found at http://www.country-data.com/cgi-bin/query/r-10471.html

[9] This statistic is not the 'marginal capital-output ratio', since the denominator is gross not net investment.

[10] The high investment argument might be judged too simple, even simplistic, explanation for the rapid growth of the IKMT countries, but it is one of two stressed by Krugman, the other being rapid labour force growth due to rural to urban migration. The latter cause challenges the World Bank emphasis on the growth of 'total labour productivity'. See Paul Krugman, 'The Myth of Asia's Miracle,' *Foreign Affairs* (Nov./Dec. 1994).

[11] During 1970-1996 the GDP of Indonesia grew at 7.3 percent per year, and exports at seven percent. Over the same years, Malaysia and Thailand grew at almost the same rate, 7.5 and 76.7 percent, and exports at 10.5 and 11.8 percent. Only Korea was a clear case of export growth well above GDP growth, 7.9 and 16.2 percent, respectively.

[12] For a detailed discussion of the policies of the Vietnamese government, see John Weeks, Nguyen Thang, Rathin Roy & Joseph Lim, *Macroeconomics of Poverty Reduction: Case Study of Viet Nam, Seeking Equity within Growth* (Hanoi: UNDP, 2004).

[13] In its World Economic Outlook 1996, the IMF considered the major problem of the IKMY countries to be inflation ('overheating') and called for demand restraint:

> …[T] he combination of widening deficits on current account and rapid growth testifies to excess demand pressures, as opposed to problems of external competitiveness, in countries such as *Indonesia, Malaysia,* and *Thailand.* Moreover, preliminary staff work to assess the level and growth rate of output that appear to be consistent with stable inflation suggests that the current levels of activity in these countries may be above their sustainable long-term trends. These countries have already taken measures to restrain demand, but further action may be needed to avoid the emergence of excessive pressures on capacity and to contain external imbalances. *Korea* has also been facing a risk of overheating, although growth has been moderating toward a more sustainable pace and pressures on resources appear to be easing. (International Monetary Fund, *World Economic Outlook 1996*, Washington: IMF, 1996)

[14] If any prominent observer predicted the crisis there is no record of it. The IMF admitted failure to anticipate it:

> The IMF could, of course, be faulted for not having accurately predicted the depth of the recession, but there was no systematic bias in the IMF's growth forecasts, which were broadly in line with the consensus forecast. It is perhaps too early to know definitively why no one foresaw the severity of the recession... (International Monetary Fund, *World Economic Outlook 1996* (Washington: IMF, 1996)

[15] The passage is from World Bank, annual Report 1996 (Washington: World Bank, 1996), with emphasis added. No page numbers on the web version. Note the implicitly positive emphasis on private capital flows. As in almost all its reports, here the World Bank uses 'East Asia' incorrectly to refer to Indonesia, Malaysia and Thailand as well as the Republic of Korea.

[16] See Terry McKinley, John Weeks, B. Khattry, R. Oktaviani, H. Saparini, J. Lim,and B. Santoso, *Pro-Poor Macro Policies in Indonesia*, UNDP Regional Project on the Macroeconomics of Poverty Reduction (Kathmandu: UNDP, 2003).

[17] While China's population of 1.3 billion in 2005 was fifteen times greater and Indonesia's almost three times greater than Vietnam's, the latter country had a larger population than Thailand (65 million) and the Republic of Korea (48 million).

[18] See Harvey Leibenstein, "Allocative Efficiency and X-Efficiency," *The American Economic Review*, 56 (1966), pp. 392-415

[19] Taken from IMF 2005, Table 2.6, p. 121.

[20] Gerschenkron set forth a list of alleged advantages of 'backwardness' or being a 'later-comer' to development in essays published in the early 1960s (see Alexander Gerschenkron, *Economic Backwardness in Historical Perspective: A Book of Essays*. Cambridge, USA: Belknap Press of Harvard University Press, 1962).

[21] An important factor in increased labour discipline was the coercive power of governments in the IKMT countries. See F. C. Deyo and Kaan Agartan, 'Markets, Workers and Economic Reforms: Reconstructing East Asian Labor Systems Political Opposition Can Be Contained by Some Combination of Economic Coercion, Market Disorganization, Tactical Retreat, and Police Suppression, but the Institutional Tensions That Underlie That Opposition Persist,' *Journal of International Affairs* 57, 2003.