
In early December 1999, Professor Anne Krueger visited the Productivity Commission and delivered a lecture in both offices. The following paper is the text of the lecture, based on the transcript.

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The Asian financial crisis¹

Until the Asian financial crisis of 1997, economists and policy makers alike devoted much attention to analysing the causes of the rapid growth of the East Asian economies. Some viewed their growth as a ‘miracle’; others (such as the World Bank) attributed it to high rates of capital accumulation.² But regardless of the analysts’ conclusions, all wanted to learn the ‘lessons’ of the East Asian successes in order that other countries might emulate them.

Since the crisis, those same economies are said to have in fact had a large number of policy failures; it is even said that there was no success story, but in fact an unsustainable expansion which was exposed for what it was in 1997. In this paper, I do two interrelated things. First, I examine the causes of the crisis in the afflicted countries, and argue that the central difficulty confronting the Asian economies has been the interaction of the fixed or quasi-fixed exchange rate regime with the weak financial system. Then, I consider the case of one country, South Korea, and provide a possible explanation as to how the banking system and the exchange rate system might have performed so well for so long and then have led to the crisis of late 1997. The explanation may apply to other Asian success stories as well — the reason for focusing on Korea is my own comparative advantage in being somewhat more familiar with that economy and economic policies than with the other Asian crisis countries. Even for Korea, what is suggested is a plausible, rather than a tested and proven, hypothesis.

1 Causes of the crises

One of the difficulties confronting analysts of crises is that there are two interrelated questions: what in fact ‘caused’ the crisis, and why did it happen when it did? The questions are interrelated because any ‘explanation’ of the crisis can readily be met

¹ I am indebted to Sajjid Chinoy of Stanford University and Kim Gusberti of the Productivity Commission for valuable research assistance in the preparation of this paper.

² See World Bank 1993, *The East Asian Miracle: Economic growth and public policy*, World Bank policy research report series, Oxford University Press, Oxford and New York.

with the argument that ‘– yes, but those same conditions held a year earlier: why didn’t it happen then?’

Delving into the timing of the crises, and whether there was contagion between them, is not the subject of this paper. Suffice it to say that there are numerous models, most of which in one way or another focus on ‘economic fundamentals’ of a country (to which discussion returns below). Some countries have strong fundamentals and will not experience crisis; some countries have or have had fundamentals so weak that they have already been attacked; and there is a middle group of countries whose fundamentals are relatively weak (but not yet hopeless) and deteriorating.³ While it is possible that good fortune (such as an improvement in the terms of trade) or policy reversals may take place before fundamentals become hopelessly weak, it is also quite possible that a crisis will occur. The individual speculator is in a difficult position: if he alone attacks the currency of a moderately weak country, and other speculators do not follow, he will lose money. If others follow, he will make a profit. Once one country becomes so weak that attack is tempting and successful, speculators conclude that other weak economies will be attacked, and hence ‘coordinate’ their attacks successfully before other economies have reached the same ‘point of no return’. Thus, it is quite possible that timing of an individual speculative attack may be determined by ‘contagion’, but that is consistent with the view that attacks will not occur unless an economy’s fundamentals are at least moderately weak and deteriorating.

The question, then, is what are fundamentals? There appears to be an emerging consensus among most analysts that there are three key policy variables and a necessary condition. The policy variables are: prior rapid expansion of domestic credit, a wide or widening current account deficit, and a nominal exchange rate regime that has resulted in real currency appreciation (and, hence, induced a capital inflow). The necessary condition is that foreign exchange reserves not be too large (and, in most cases, have been diminishing in the period immediately prior to the attack).

Each of these elements is important, but it usually takes a combination of all three conditions (plus falling international reserves) before a country becomes vulnerable to attack. Each of these conditions is discussed in turn in this section. Thereafter, attention turns to the role of ‘crony capitalism’ in these economies, and its role in inducing crisis.

³ See Tornell, A. 1999, *Common Fundamentals in the Tequila and Asian Crises*, NBER working paper no. W7139, May 1999.

Exchange rate regime

Although difficulties can be experienced by a country with a floating exchange rate, it will be seen later that these difficulties are relatively less likely to occur and, if they do occur, are likely to be less severe in magnitude, than the difficulties that can arise in a crisis where the nominal exchange rate regime prior to the crisis has been one where the authorities have either fixed the nominal exchange rate at a constant level (in terms, say, of US dollars, but it could be in terms of a currency basket) or have adjusted the nominal exchange rate by less than the inflation differential between the country and the rest of the world.

These regimes include those known as ‘nominal anchor exchange rates’, which are frequently employed in countries attempting to reduce inflation rates rapidly. In these regimes, the rate of depreciation of the nominal exchange rate is deliberately held below that of the inflation differential in order to provide an ‘anchor’ for domestic monetary policy in circumstances where prior rapid inflation has made understanding of the demand for money balances problematic. The Mexican exchange rate regime from 1987 to 1994 was a ‘nominal anchor exchange rate regime’; while it was in effect, the peso arguably appreciated in real terms (depending on precisely how the number is estimated) between 30 and 70 per cent. The Brazilian regime from 1994 to 1999 (the real) was also a nominal anchor regime, in which the permitted exchange rate depreciation was well below the inflation differential, and the real appreciated in real terms by between 20 and 60 per cent.

In the Asian countries, precrisis, the situation was similar. Thailand had had a fixed nominal exchange rate since the mid-1960s, although Thai inflation was significantly above that in the rest of the world. Malaysia, likewise, had had the nominal exchange rate pegged to the dollar despite domestic inflation at rates above world levels. In both cases, these were dollar pegs and real appreciation was exacerbated with yen depreciation relative to the dollar in 1996-1997. Korea’s situation was somewhat different: in that country, the intent to permit the won to float and depreciate was thwarted by pressures (primarily from the United States) to maintain or even let the nominal exchange rate appreciate in response to bilateral trade surpluses with the United States. The one partial exception to the generalisation that the crisis-afflicted countries had a fixed or quasi-fixed nominal exchange rate was Indonesia where the announced policy was one of a floating rate. But, in fact, high domestic interest rates encouraged capital inflows which in turn

resulted in rapid expansion of domestic credit and nominal exchange rate appreciation.⁴

It is generally thought that countries that adopt fully credible arrangements for permanent fixity of the currency may be less vulnerable to attacks on their currency. But the key phrase in that sentence is 'fully credible'. Argentina's commitment to maintain parity with the US dollar in a currency-board type arrangement was widely known; but many questioned whether the authorities would be able to maintain that commitment under the extreme political pressure that could arise should conditions turn sufficiently adverse and the unemployment rate rise sharply domestically. In fact, the authorities were able to maintain the exchange rate regime despite strong political pressures in 1995 (after the Mexican crisis) and the pressure on the Argentine peso in the wake of the Asian financial crises was much smaller as credibility was increased.⁵

If there is no commitment to defend a currency, participants in the foreign exchange market may still believe that there is likely to be an event or events that result in significant depreciation of the currency and, anticipating that, there may be a run on the currency. But, in the absence of a commitment of the authorities (implicit or explicit) to defend the exchange rate, the likelihood of such an attack is considerably smaller than with a commitment, and the costs of defending the currency are also normally smaller.⁶

As already indicated, one of the elements of consensus arising out of the crisis is that the policy option of setting a nominal exchange rate (or a rate of crawl relative to the inflation rate), which appears to have been viable in the 1950s and 1960s, is no longer available to most developing (or developed) countries. The room between currency boards, at one extreme, and floating rates, at the other has greatly diminished, if not vanished.

⁴ Foreigners (and probably domestic residents) were acutely aware of uncertainties in the Indonesian political situation which undoubtedly led to greater willingness to get out of the economy than in the other crisis countries.

⁵ It is still not fully credible, as evidenced by the fact that Argentine borrowers are still paying around 400 points above Libor for foreign credits. This is the basis for the advocacy, in Argentina, of full dollarisation.

⁶ Taiwan depreciated during the Asian financial crisis, but was never the subject of a major currency attack. Hong Kong's currency was attacked, but successfully defended. In both instances, foreign exchange reserves were very large and the rate of expansion of domestic credit, discussed below, was relatively moderate.

Expansion of domestic credit

In almost all of the crisis countries (including Mexico in 1994, but not Brazil in 1999), a key feature of the preceding several years was a very rapid expansion of domestic credit.⁷ The rates of expansion of domestic credit were very high — over 10, and sometimes, over 20 per cent of GDP per annum, for three or more years running.⁸

A first point to be noted is that, immediately after the crisis, many commentators expressed surprise that countries without fiscal deficits had encountered problems. In fact, a moment's reflection should indicate that, at a more or less fixed exchange rate (and in the absence of stringent capital controls), an expansion of domestic credit is virtually equivalent to an increase in the contingent liabilities of the Government, via its obligation to honor demands to provide foreign currency in exchange for domestic currency. As such, the observation that budgets were balanced was not itself meaningful for the crisis countries.⁹

Expansion of domestic credit at the sorts of rates that took place in the crisis countries is 'unsustainable' and dangerous for a number of reasons. First, lending institutions do not have sufficient staff appropriately trained for risk analysis, with the result that the quality of the loan portfolio is likely to decline on that account alone. Second, it is rare that the volume of quality loans available to lending institutions rises that rapidly: expanding credit at double-digit rates implies that the quality of the loan applicant pool declines. Third, when these two phenomena occur, the fraction of loans that are (actually, if not reported) nonperforming increases.

When nonperforming loans de facto increase, lending institutions have two choices. They may declare the loans nonperforming, or they may lend into arrears (evergreen accounts), expanding the size of the loans sufficiently so that the borrowers may (at least) maintain interest payments. After one or two years of such lending, the new loans extended simply to maintain evergreen accounts increase sharply, thus further weakening the financial sector.

⁷ There is something of a question as to whether the expansion of domestic credit was a factor contributing to the inflow of capital; whether the capital inflow resulted in credit expansion; or whether several other mechanisms, or some combination, were at work. Resolution of that issue is not critical to the analysis here.

⁸ By contrast, the rate of expansion of domestic credit in most industrial countries is less than 3 per cent of GDP per annum. And, of course, a smaller fraction of investment is financed with bank credit.

⁹ It should be noted that, in this dimension as well, the Brazilian crisis was different. One of the differences was that the Government was incurring a large fiscal deficit, running at an annual rate of over 8 per cent of GDP in the precrisis months, and prospectively rising to over 10 per cent by the end of 1999.

As will be discussed with regard to crony capitalism, there are a number of reasons for believing that the quality of loan portfolios deteriorated because of the ‘crony’ aspects of lending in a number of countries (probably most notably Indonesia, but also in Thailand, South Korea and Malaysia). In addition, there were visible signs of low returns on investments. Perhaps the Malaysian case was the most evident, as the country was simultaneously building a new airport, a new capital, the Twin Towers (the tallest office building in the world), and the information superhighway. But Bangkok’s construction boom was almost as visibly a bubble and bound to have low rates of return.

For present purposes, the important point to note is that with an overly rapid expansion in domestic credit at an increasingly unrealistic exchange rate, the financial institutions in a country are necessarily weakened even prior to a crisis. The existence of a sizeable fraction of nonperforming loans in banks’ portfolios is already a sign of vulnerability. But, absent interactions with the exchange rate regime, the logical outcome of such a rapid expansion would be a domestic financial crisis with no international overtones.

Likewise, if there were no lending boom prior to a crisis, the banking system could enter a balance of payments crisis (as it apparently did in Brazil) with a reasonably healthy portfolio. However, when the exchange rate is under attack (which is possible because of exchange rate policy), while the financial institutions already have weak balance sheets, the crisis that can result is far worse than the cumulative damage that might take place if the banking and exchange rate crises each took place in the absence of the other. This is because devaluation almost invariably reduces the assets of the banks or increases their liabilities, thus further eroding their balance sheets.

To see this, consider what happens when the exchange rate is adjusted (as it must be at times of crisis when the authorities can no longer defend their currency). There is little adjustment to the asset side of banks’ balance sheets, as most liabilities to banks (from the borrowers) are denominated in domestic currency. But the liabilities of the domestic banking system increase sharply, as the banks are now obligated to repay more units of domestic currency per unit of foreign borrowing.¹⁰ Hence, the banks’ balance sheets deteriorate sharply as the exchange rate is altered.

¹⁰ It may be objected that the banks may have lent to domestic firms denominated in foreign currency. In that case, it is the balance sheets of domestic borrowers that are initially impacted. However, if those borrowers find that their debt-servicing obligations have doubled or quadrupled (as reportedly happened to a number of firms in Indonesia and Korea) they are unable to service their loans and the domestic banks experience an increase in nonperforming loans instead of an initial increase in their liabilities. The only difference to their balance sheets, however, is the timing of the disproportionate impact on their liabilities.

Such a deterioration is worse the greater the exchange rate depreciation, and the greater the proportion of liabilities (of the bankers or of their borrowers) that are denominated in foreign exchange. But the fraction that is denominated in foreign exchange is closely related to the cumulative earlier capital inflow in the form of short term and long term borrowing. And a very large fraction of capital inflow in precrisis periods was (because of its attractiveness given exchange rate policy) in the form of borrowing from abroad with obligations to repay denominated in foreign currency.

Hence, when the quasi-fixed exchange rate regime prevailing prior to the crisis must be abandoned, the balance sheets of the banks necessarily worsen, often quite sharply. Especially when the domestic banking system is already weakened by the earlier cumulation of nonperforming loans, a balance of payments (or exchange rate) crisis quickly spills over into a financial crisis.

Current account deficits

One normally thinks of large current account deficits as being financed by running down foreign exchange reserves. But, in quasi-fixed nominal exchange rate regimes when the real exchange rate is appreciating, lending by foreigners to domestic financial institutions (and firms) denominated in foreign exchange is especially attractive: the real rate of interest received by foreign lenders is the domestic country's real rate of interest on borrowing plus the rate of appreciation of the local currency in terms of the lender's currency.

In these circumstances, a current account deficit can persist and sustain an appreciating real exchange rate for a considerable period of time. Indeed, causation can as easily run from the exchange rate regime to capital inflow, currency appreciation, and consequent deterioration in the current account deficit, as it can from currency appreciation to deteriorating current account and capital inflow with obligations in foreign currency. In fact, however, much of the capital inflow under a quasi-fixed exchange rate regime can be regarded as the equivalent of a fiscal deficit financed by government borrowing from abroad under a flexible exchange rate regime.

It is for this reason that the cumulative capital inflow under a quasi-fixed exchange rate regime is the third pre-existing condition common to crisis countries. For Thailand and Mexico, the current account deficit had widened to more than 8 per cent of GDP in the years immediately preceding the crisis, and total foreign currency denominated debt had risen rapidly. In Korea, the current account deficit had begun increasing after 1993 and reached more than 5 per cent of GDP by 1996. Malaysia's current account deficit had reached 8 per cent of GDP several years

prior to the crisis, but fiscal adjustments had reduced the current account deficit to around 5 per cent of GDP in 1996. Even in Indonesia, the current account deficit had steadily been in excess of 3 per cent of GDP throughout the 1990s. Mexico's current account deficit in 1994 had also been rising and reached over 8 per cent of GDP.

In all these cases, much of the borrowing from banks was short term, and debt-servicing obligations were large relative to foreign exchange reserves. Hence, when people began trying to get out of local currency and into foreign currency, not only were domestic residents surrendering their local currency and demanding foreign exchange, but creditors were failing to roll over outstanding debt, and demands for foreign currency were mounting sharply. Thus, Brazil could lose more than US\$40 billion of its US\$85 billion in reserves before its crisis; South Korea is reported to have had less than 2 days' worth of reserves when it appealed for help to the International Monetary Fund; and Thailand and Malaysia had already raised domestic interest rates sharply and lost reserves prior to abandoning their fixed exchange rate peg.

The crises, then, were not only balance of payments crises, but also financial crises, in countries where previously weak financial institutions sustained a further hit with devaluation. It may be noted, moreover, that the greater the depreciation of the currency, the greater was the likelihood of stemming the balance of payments crisis but the more the impact on banks' balance sheets. If the authorities instead tried to maintain the exchange rate and raise the interest rate, they impacted borrowers' immediate debt-servicing obligations harder, with a consequent larger increase in nonperforming loans for obligations denominated in local currency, and at the same time, increased the probability that holders of domestic currency would persist in their efforts to exchange it for foreign exchange. Anything done to ease the financial crisis was likely to make the balance of payments/exchange rate situation worse, and vice versa.¹¹

The role of cronyism

A great deal of attention has been paid to the role of 'cronyism' in bringing about the Asian financial crises. By this is meant that politically well-connected

¹¹ Since the focus here is on the causes of the crisis, there is no need to explore one further implication of these situations. That is, there can be no economically meaningful restructuring of banks' portfolios subsequent to the crisis unless the debt-equity positions of domestic firms are also restructured. Moreover, restructuring banks' portfolios, to be meaningful, should be accomplished in ways that reduce the likelihood that nonperforming loans will again mount in banks' portfolios. That, in turn, brings in questions about prudential supervision, capital adequacy requirements, and so on.

individuals often received subsidised loans or loans which they either had no intention of repaying or could not repay, and that nonperforming loans built up through this mechanism.

For most purposes, it makes no difference whether loans were bad because borrowers used the proceeds to invest in projects which failed (or had a very low or negative real rate of return) or whether loans were to favoured individuals. In fact, it probably makes little difference (for the purposes of analysing the period of crisis — it may make an enormous difference to the political climate) whether cronies are favoured through being first in a queue for subsidised loans (or receiving loans that will not be repaid) or whether bank lending is to individuals who simply fail to realise an adequate rate of return on their project¹², or whether cronies are simply enabled to fail to pay taxes or receive public subsidies with a consequent fiscal deficit. Indeed, depending on the size of the subsidy or reduced tax bill, the resulting cost may be lower than with priority access to bank credits that will not be repaid.

Cronyism probably contributed to the Asian crisis in several ways. First of all, even when cronies were the favoured businessmen, the very fact that they were implicitly subsidised (through priority access to credit at below-market interest rates) probably kept some, who were relatively less competent, in business, and thus resulted in lower real returns on investments than would have occurred had a normal market mechanism selected the most appropriate managers and entrepreneurs. Second, insofar as cronies regarded themselves as having ‘soft budget constraints’ and able to borrow when confronted with adversity, competitive pressures of the market place through a hard budget constraint were weakened, if not lost. Third, when there was pressure to lend to cronies (without commensurate pressure for them to undertake investment or to repay loans), it probably contributed significantly to the weakening of the banks’ portfolios, in addition to the problems raised by the rapid expansion of domestic credit and by the impact of exchange rate changes. Finally, the fact that some were receiving implicitly subsidised loans probably discouraged the entry of potentially more capable businessmen, thus lowering the economywide rate of return on investments.

¹² I have elsewhere argued that directed lending to cronies with low rates of return is little different from public investment in state-owned enterprises which then incur losses (or fail to earn a positive real rate of return on their investments). See my ‘Cronyism and its Discontents’, presented at Montpelerin Society, Vancouver, September 1999.

2 How did Asian miracles end up in Asian crises?

With the above framework, we can now address the question posed at the beginning of this paper. That is, how could the Asian success stories become the Asian financial crisis countries? A first part of the answer, of course, is that not all of them did: Taiwan, Hong Kong, and Singapore were certainly negatively affected by crises in the region, but they themselves did not fall victim to crisis. In all instances, foreign exchange reserves were very large, domestic credit had risen only moderately, and current accounts were either in surplus or in very small deficits.

But for Korea, and probably for Thailand and Malaysia, the story is more complicated. Also, the initial parts of the story for Taiwan and Singapore are probably not significantly different from the Korean story.

It is often forgotten that, as of 1960, South Korea had the highest density of population in agriculture of any country in the world with 70 per cent of its population in agriculture; its savings rate was close to zero (with about 10 per cent of GDP as investment financed by foreign aid); its per capita income was the third lowest in Asia; its rate of inflation in the mid-1950s had been the highest in the world; it had a multiple exchange rate regime and a highly restrictive import licensing system with acute 'foreign exchange shortage'. There were state-owned enterprises (SOEs) established in many lines of economic activity, with the usual governmental efforts to control private economic activity, import substitution, and poorly functioning infrastructure. In short, South Korea was a fairly 'typical' developing country, although it was generally believed to have worse growth prospects than most.

The list of woes of the South Korean economy at that time would fill several pages, even at this level of generality. But for present purposes, only one other statistic is key to an interpretation of what happened: exports in 1960 constituted about 3 per cent of GDP (88 per cent of which originated in primary commodities) while imports were about 13 per cent. This must have meant that the economic return to allocating additional resources to exportables was very high while that to additional resources in import-substitution was low or negative. This was borne out by a very low real rate of growth of GDP: it had averaged less than 5 per cent (with a rate of growth of population of almost 3 per cent) from the end of Korean War in 1953 to 1960 when the growth rate should have been very high given the opportunities for postwar reconstruction.

Between 1960 and 1963, economic policy changed radically. The country's leaders recognised that Korea would not be able to grow without prospects for growth in foreign exchange earnings, and that foreign aid would not provide a growing source of foreign exchange. Economic incentives were therefore almost reversed. The

exchange rate was moved to a realistic level.¹³ Quantitative restrictions on imports were greatly reduced in general and were eliminated for exporters' imports of raw materials, intermediate goods, and capital equipment. Tax policy was reformed and government expenditures were rationalised so that the government budget deficit was virtually eliminated. Restrictive labour legislation was removed, with a subsequent increase in real wages at an average annual rate of 8 per cent per year between 1964 and 1992 (and an immediate drop in the recorded unemployment rate from around 25 per cent in 1960 to 4 per cent by 1964).

The emphasis in economic policy switched to achieving economic growth through exporting. While government officials did not discriminate (at least in the 1960s) between activities (in the sense of favouring exports of one good or service over another — all foreign exchange earning activities were accorded equal treatment) at all, it can almost be said that they held an 'export theory of value'. Exporters were given priority access to credit (which was highly subsidised, but allocated by formula according to the value of exports), ports, telecommunications, transport, and other infrastructure supportive of producers was expanded and improved. When an exporter had difficulties with any aspect of filling an order, he had almost immediate access to the President.

There are a large number of interesting aspects to the story. But for my purposes, the important points are these. First, as of 1960, there were enormous opportunities for highly profitable investments in exporting activities, given the distortions in the economy which had earlier discouraged them and the incentives that were then provided. Since it was doubtless economic for almost all new investment to be induced into these newly profitable activities, a credit rationing regime which directed all credit to finance expansion of capacity was unlikely to result in serious misallocation of new credit. Moreover, in the early years, there were so many profitable opportunities for export activity that it probably made little difference which ones were in fact chosen. And the differential in skills of the entrepreneurs undertaking them was probably also of second order importance.

¹³ The real won return to exporters per dollar of foreign exchange was maintained at an almost constant level from 1960 to 1970. This was achieved both by occasional exchange rate adjustments until 1964 and then a floating exchange rate, and also by announcing uniform across-the-board 'export subsidies' and other incentives to exporters which accrued to them automatically. These 'subsidies' were not quite complete offsets to incentives for import-competing activities, but they reduced the bias of the trade regime substantially. The fact that there were such 'subsidies' has led some to claim that the Government was interventionist: it may have been in some dimensions, but the exchange rate regime as it applied to exporters was almost entirely uniform (as were the entitlements to credit subsidies, tax rebates, import rights, and so on). There was virtually no discrimination among exporters by type of good exported.

Hence, in the early years of the Korean period of rapid growth under an export-led growth strategy, it seems likely that credit could be and was rationed in ways that were not very different from that which would have occurred under an efficient market outcome. The resulting rate of growth of exports — a 40 per cent per year average annual increase in export earnings for the decade starting in 1963 — and the increase in the share of tradeables, both exports and imports, in GDP from 3 and 13 per cent to 30 per cent and more by the 1980s attests to that.

Figures 1 and 2 provide some rough estimates of the real rates of return to capital, both economywide and for manufacturing, in the years starting in 1970 — there is little doubt that returns in the late 1960s were even higher, but data problems preclude even crude estimates before 1970. As can be seen, the estimated economywide real rate of return on capital appears to have been almost 60 per cent in 1970, falling to about 20 per cent in 1980, and remaining at that level until around 1990. As can be seen in figure 2, the rate of return in manufacturing appears to have been lower in the 1970s¹⁴ than the economywide rate of return, but by the late 1970s, the two real rates seem to have been very similar.

As can be seen from these graphs, the real rate of return was falling in the 1990s. By that time, there had been some liberalisation of the banking system (with higher nominal and real interest rates) but domestic credit still financed a great deal of capital formation, as table 2 indicates.

Now consider the role of domestic credit. While implicit subsidies (from negative real interest rates) to producers were very large relative to GDP and investment in the 1960s, they were financing investments with very high rates of return (table 1). Naturally, in a very poor country, the extent of equity of the newly exporting firms was quite low, and domestic credit financed a high fraction of expansion. But real rates of return were high, and the allocation of domestic credit caused few problems.

Over time, however, the subsidy element in granting domestic credit decreased as the liberalisation of the financial system began. Estimates of this are given in table 2, on the assumption that an equilibrium rate of interest in the financial market

¹⁴ This may reflect estimation error, or it may reflect the fact that there was huge rural-to-urban migration in the 1970s as farm workers (with low real wages) migrated to the cities and were absorbed in activities with much higher real products. High overall growth, especially in the 1970s, may have been attributable both to the reallocation of labor (with significant increases in the real product of labor) as well as to capital formation. In addition, the Korean Government attempted to shift to a policy, known as the heavy and chemical industry drive (HCI), in the mid-1970s, which involved government selection of individual projects and which almost brought growth to a halt before policies were brought back toward the more uniform incentive framework by 1979.

would have been 10 per cent (which is probably too low, especially in the early 1970s). As can be seen, the subsidy element of domestic credit fell drastically on these assumptions. Moreover, domestic credit expansion as a per cent of GDP — while still too large to be sustainable at a virtually fixed nominal exchange rate — also declined.

At the same time, the firms which had been so favoured in the 1960s had become very large relative to the Korean economy, and owners of those firms were important sources of financing for political leaders. In addition, their enterprises accounted for a sizeable share of GDP and employment; their favoured access to credit had enabled them to expand, and credit rationing skewed toward these firms had apparently constituted a significant barrier to entry or to expansion of small firms.

Because of these factors, and probably also for other reasons, ‘cronyism’ persisted in the form of favouritism toward the large firms. And, whereas it had apparently been justified by the high real returns earned in the 1960s and early 1970s, there was less justification as the Korean economy matured. As real wages rose, the challenge to management increased; instead of finding incentives to select the most competent managers, the Korean credit-rationing system locked in the former managers at the expense of entry of new, and possibly, better equipped ones to take on the challenges of a maturing and less unskilled labor-abundant economy.

Whether the real rate of return to capital fell because of an increased labour–capital ratio or because of the inability of chaebol owners to manage firms in ways appropriate to achieving high returns in the 1990s, or because the chaebol owners diverted domestic credit from their enterprises to maintain or increase consumption expenditures with a consequent overestimate of investment figures (as the extent of nonperforming loans — 14 per cent prior to the crisis — might suggest) is a question that it is not possible to answer.

Moreover, insofar as there were other economic activities deserving of credit and able to earn higher real rates of return than did the credit-receiving chaebol, the economic effects of the directed credit were the same regardless of which explanation is correct: favouring the chaebol in Korea (and cronies with inappropriate investment schemes or high consumption levels in other East Asian countries) resulted in a slowing of the growth rate. And, as the apparent real rate of return to capital fell while the real rate of interest paid on bank lending rose, the degree of subsidy to chaebol clearly dropped as a percentage of GDP and, since the chaebol were larger as a fraction of economic activity, the percentage implicit subsidy to each firm fell further still.

3 Conclusions

There are four policy lessons that can be drawn from this analysis. The first is that in a situation in which weak financial institutions already exist, the costs of a balance of payments crisis are considerably greater than in circumstances where the financial system is reasonably sound, such as in Brazil in 1999. The second is that in circumstances in which both balance of payments crisis and financial crisis are present, the authorities need to balance their response very sensitively to the prevailing situation of the banking system, the extent of foreign debt, and the extent of domestic debt. The third lesson is that finding ways of insulating the domestic financial system from the exchange rate regime may have a very high payoff for the international financial community as well as for countries affected directly by crisis. The final lesson is that recovery from crisis cannot occur until both the balance of payments issues and the financial weakness of the system are addressed. That, in turn, requires either that there be no (or very little) foreign currency denominated debt at the outset of the crisis, or that debt–equity restructuring of the large domestic institutions be undertaken. The latter has been necessary for the Asian countries.

Figure 1 **South Korean economywide rate of return on capital, using beginning of period capital stocks, 1970 to 1996**

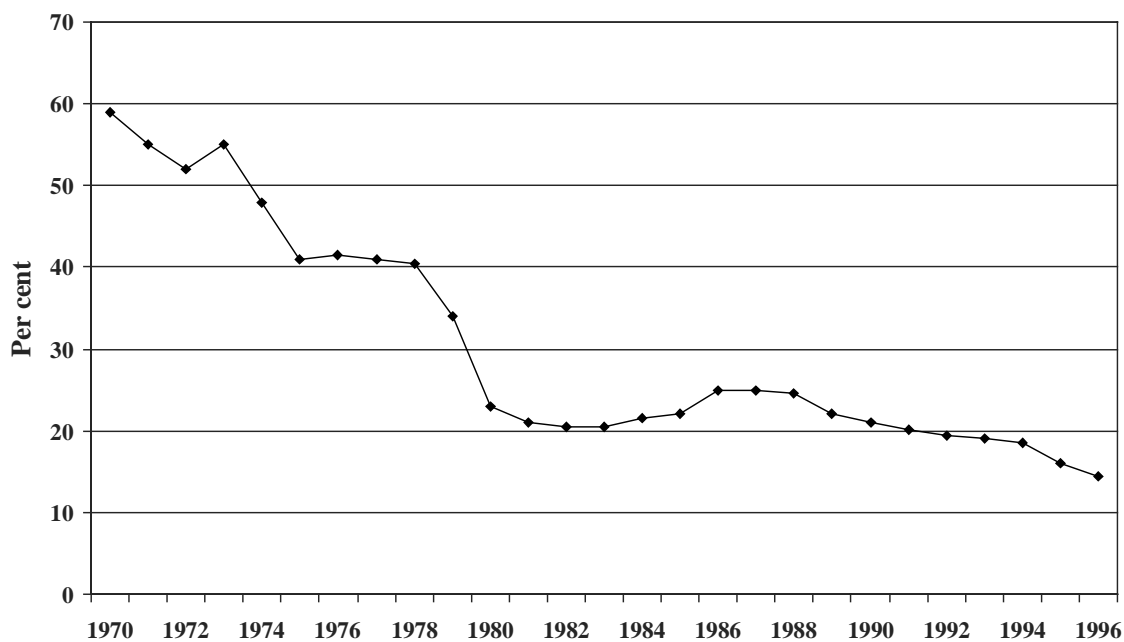


Figure 2 **South Korean manufacturing rate of return, 1970 to 1996**

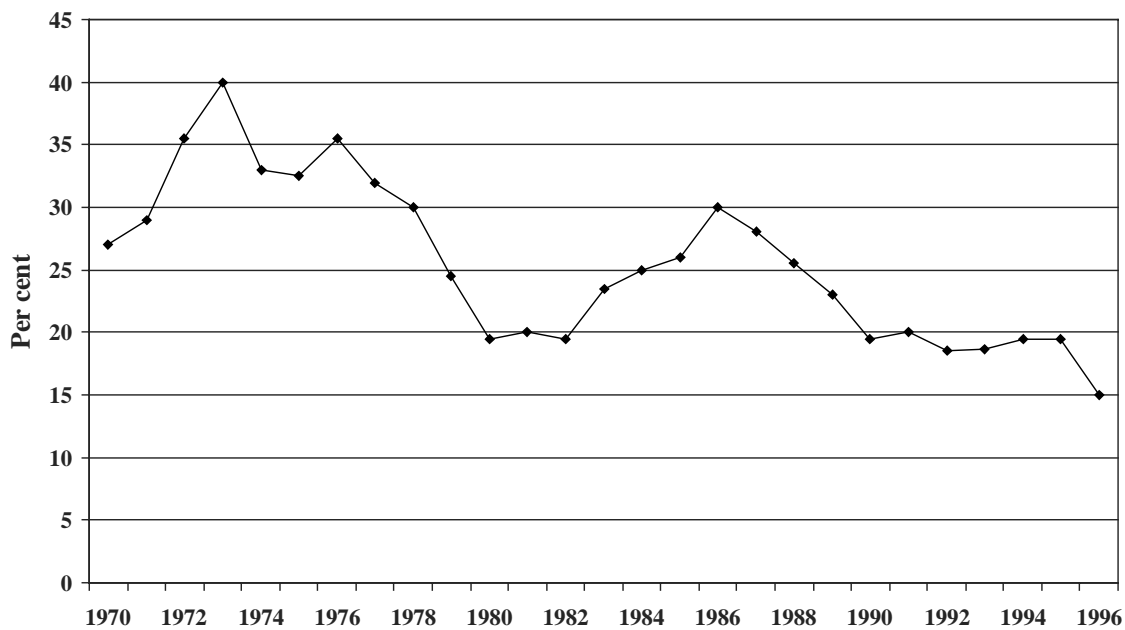


Table 1 Korean investment relative to domestic credit and interest rates, 1968 to 1972

	1968	1969	1970	1971	1972
Gross Domestic Capital Formation (billion won)	414	556	627	726	831
Domestic credit	469	751	962	1240	1600
of which private sector	(432)	706	919	1201	1463
Lending rate of DMBs (%)	13.4	13.9	8.4	7.8	3.7
Curb loan rate (%)	47.9	44.5	40.6	37.8	25.0
Producer price increase (%)	n.a.	6.8	9.6	8.0	14.2
Implicit subsidy on private domestic credit (billion won)	149.0	216.0	295.9	360.3	311.6
GDP	1630	2130	2724	3379	4170
Percentage subsidy to private borrowers (% of GDP)	9.1	10.1	10.8	10.7	7.5

Source: GDCF, GDP, domestic credit, and producer prices: International Monetary Fund, *International Financial Statistics, Yearbook 1998*. Korea country pages.

Interest rates: Hong, Wontack, 'Export Promotion and Employment Growth in South Korea', Table 8.14 (p. 370) in Krueger, A. O., Lary, H. B., Monson, T. and Arkanese, N. (eds.) 1981, *Trade and Employment in Developing Countries 1, Individual Studies*, University of Chicago Press, Chicago.

Table 2 Korean investment relative to domestic credit and interest rates, 1990 to 1996

	1990	1991	1992	1993	1994	1995	1996
Gross Domestic Capital Formation (trillion won)	67	83	88	96	109	129	143
Domestic credit	102	125	139	157	186	214	254
of which private sector	102	122	136	154	185	213	256
Lending rate of DMBs (%)	10.0	10.0	10.0	8.6	8.5	9.0	8.8
Curb loan rate (%)	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Producer price increase (%)	4.1	4.7	2.1	1.4	2.7	4.7	2.6
Implicit subsidy on private domestic credit (trill. won)	4	6	3	4	8	12	10
GDP	180	216	240	267	306	351	390
Percentage subsidy to private borrowers (% of GDP)	2.3	2.7	1.2	1.6	2.5	3.5	2.5
Increase in domestic credit as a % of GDP	-	10.6	5.8	6.7	9.5	8.0	10.3

Source: GDCF, GDP, domestic credit, and producer prices: International Monetary Fund, *International Financial Statistics, Yearbook 1998*. Korea country pages. Implicit subsidy calculated as per text.