Chapter 2

LESSONS FROM THE ASIAN FINANCIAL CRISIS, AND THE PROSPECTS FOR RESUMING HIGH GROWTH

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Abstract

Broadly speaking, there were two initial explanations for the unexpected nature of the Asian financial crisis. The first explanation emphasized the common structural problems (soft rot) in the crisis Asian countries, and the second explanation emphasized the primary roles of investor panic and financial contagion. In my view, the crisis was built on national weaknesses that were greatly magnified by a flawed international financial system; the initial policy recommendations from Washington, especially to raise interest rates sharply and to close a large number of financial institutions, were inappropriate, and made matters worse, not better.

There was little particularly "Asian" about the Asian financial crisis. The more generic character of the crisis became all too clear during 1998, as the crisis spread to Russia, South Africa, and Latin America. The world is experiencing a type of global crisis that reflects the rapid arrival of global capitalism. Long-term crisis prevention requires actions both at the national, regional and international levels, including a basic change of strategy in exchange rate management and recognition of the inherent destabilizing risks of short-term capital flows.

The continued high growth of Asian economies will rest on their ability to maintain and improve theirs competitiveness in a globalized economy. Southeast Asia is unlikely to return to the high growth of the previous 20 years, unless it pursues the anti-financial crisis measures, as well as responds appropriately to the process of economic globalization. Specifically, Southeast Asia needs to increase its technological capacity in

order to accelerate technological diffusion to the region, and to accelerate indigenous innovation.

1. INTRODUCTION

The Asian financial crisis has been as puzzling as it has been far-reaching in its consequences. The sharp region-wide plunge in output after of the devaluation of the Thai baht in July 1997 was unexpected,[1] and the strong region-wide recovery in 1999 was equally unexpected. Although the World Bank and the International Monetary Fund have long shared a common policy framework, they were divided on the causes of the crisis, and on what the policy advice should have been given. All across Pacific Asia, the crisis has brought about many fundamental changes: internationally well known conglomerates have collapsed, the banking systems are paralyzed by large amounts of non-performing loans, and barriers to entry by foreign financial institutions have been lowered.

During the darkest moments of the Asian financial crisis in 1998, it was widely predicted that East Asia would continue to be deathly sick for the next two to four years. While it is fortunate that the news of the (near) death of the East Asian miracle was greatly exaggerated, this economic earthquake remains a tragic disaster in human terms. The tremendous destruction of wealth and the pushing of a significant proportion of the population in the poorer countries to below the poverty line caused political volcanoes to erupt in several countries. New governments have emerged in Indonesia, South Korea and Thailand; and the political leadership is split in Malaysia. The social after-shocks of this economic earthquake were still felt during the inaugural biennial conference of the Hong Kong Economic Association in December 2000.

In December 2001, with the passage of now over four years since the crisis began, we are in the position to suggest some tentative conclusions about the causes of the crisis and the appropriateness of the policy responses to the crisis. However, we feel that while we may now know enough about the nature of the Asian financial crisis to ensure that future financial crises would not inflict such severe damage again, the preventive policies that have been discussed (and of which, many are being implemented) may not return the East Asian economies to their previous paths of sustained high growth. The situation of the mid-income and high-income East Asian economies is that they need to become endogenous centers of growth if their previous high growth rates are to be maintained, and we think that more and better coordinated public efforts are required in order to achieve this goal. This

problem appears to be particularly acute for the Southeast Asian economies of Indonesia, Malaysia, Philippines, and Thailand.

2. THE CRISIS IN HINDSIGHT

For the economics profession, the Asian financial crisis has been divisive and, for some economists, humbling. The International Monetary Fund (IMF), the financial firefighter of the world, under-predicted the severity of the output collapse in every one of its program countries,[2] and then went on to under-predict the pace and strength of the economic recovery.[3] This systematic failure in prediction by the IMF of output behavior in the crisis countries certainly suggests an institution that neither understood the cause of the region-wide crisis nor knew what the optimal rescue package for these countries should have been.

It was in support of this impression of an incompetent IMF that Joseph Stiglitz, the Chief Economist at the World Bank during the crisis, wrote in April 2000:

> "IMF experts believe that they are brighter, more educated, and less politically motivated than the economists in the countries they visit. In fact,…. the IMF staff….frequently consists of third-rank students from first-rate universities….Quite frankly, a student who turned in the IMF's answer to the test questions "What should be the fiscal stance of Thailand, facing an economic downturn?" would have gotten an F."[4]

The economics profession is certainly divided over the IMF's performance but not in a clear-cut fashion, however. For example, among the economists who agree with Stiglitz that the first IMF programs that Indonesia, South Korea and Thailand were badly flawed, many would differ importantly both from his reasons for why the IMF made mistakes and from his negative assessment about the general analytical capability of the IMF.

The economics profession has shown uncharacteristic humility over its initial judgement of the Asian financial crisis. The well-known economist, Paul Krugman, has recorded on his website the changes in his thinking about the crisis, and we will use his intellectual odyssey as a convenient expository device to capture the evolution in the economics profession's analysis of the Asian financial crisis.

In March 1998, Paul Krugman opined that:

> "Broadly speaking, I would say that there are two approaches to the Asian crisis….One approach – which I would identify mainly with Harvard's Jeffrey Sachs – regards what happened to Asia as basically a modern, high-tech, multicultural version of a good old-fashioned financial panic… The important point to make here is that a panic need not be a punishment for your sins. In principle, at least, an economy can be "fundamentally sound"… and yet be subjected to a devastating run started by nothing more than a self-fulfilling rumor…
>
> "OK, as you may have guessed, I don't buy that story.. The story I believe…argues that the preconditions for that panic were created by bad policies in the years running up to the crisis. The crisis, in short, **was** a punishment for Asian crisis, even if the punishment was disproportionate to the crime.
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> "What were these Asian crises? We hear now about 'crony capitalism.' It's a good phrase, and it certainly captures the spirit of what went on in much of Asia.. The **specific** spirit that pushed Asia to the brink was the problem of moral hazard in lending – mainly domestic lending."[5]

Following his crony capitalism analysis of the crisis, Paul Krugman (1998a) went on to deliver a defense of the IMF policies, which had been criticized (by Jeffrey Sachs, for example) as overly deflationary. He felt that the policies were justified because the IMF was not a true lender-of-last-resort due to its limited financial capital, and because the IMF had little choice ("the Fund must either confront crony capitalism or stay out of the picture altogether").

However, seven months later, in October 1998, Paul Krugman (1998b) completely reversed his assessment of the crisis in an article entitled "The Confidence Game: How Washington Worsened Asia's Crash." In Krugman's new awareness:

> "When the Asian crisis struck, .. countries were told to raise interest rates, not cut them, in order to persuade some foreign investors to keep their money in place and thereby limit the exchange-rate plunge... In effect, countries were told to forget about macroeconomic policy; instead of trying to prevent or even alleviate the looming slumps in their economies, they were told to follow policies that would actually deepen those slumps.
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> " .. [To understand the perverse macroeconomic policy stance] consider the situation from the point of view of those smart economists who are making policy in Washington. They find

> themselves dealing with economies whose hold on investor confidence is fragile…The overriding objective of policy must therefore be to mollify market sentiment. But, because crises can be self-fulfilling, sound economic policy is not sufficient to gain market confidence; one must cater to the perceptions, the prejudices, and the whims of the market. Or, rather, one must cater to what one hopes will be the perceptions of the market.
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> "In short, international economic policy ends up having very little to do with economics. It becomes an exercise in amateur psychology, which the IMF – whose top economist Stanley Fischer, boasts credentials just as impressive as those of Summers and his crew – and the Treasury Department try to convince countries to do things they hope will be perceived by the market as favorable. No wonder the economics textbooks went right out to the window as soon as the crisis hit.
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> "Unfortunately, the textbook issues do not go away….The perceived need to play the confidence game supercedes the normal concerns of economic policy. It sounds pretty crazy, and it is."

What led to Paul Krugman's startling apostasy? In a retrospective piece in a September 1999 issue of *Slate*, Krugman (1999) asked:

> "Where do I fit in? In the summer of 1998, I began to reconsider my own views about the crisis. The scope of global "contagion" – the rapid spread of the crisis to countries with no real economic links to the original victim – convinced me that IMF critics such as Jeffrey Sachs were right in insisting that this was less a matter of economic fundamentals than it was a case of self-fulfilling prophecy, of market panic that, by causing a collapse of the real economy, ends up validating itself."

Several papers in the August 2000 issue of the *ASEAN Economic Bulletin* reached the same conclusions as Paul Krugman finally did. Patrick Damien Carleton, Brian Pilapil Rosario, and Wing Thye Woo (2000) examined the currency experiences of 57 countries in the 1970-1996 period, and found that inflationary macroeconomic policies and small stocks of foreign reserves were reliable predictors of currency collapses. They found that the individual probability of Indonesia, Malaysia, Philippines, South Korea and Thailand experiencing a currency collapse in 1997 was about 20 percent, which meant that only one of these five countries should have experienced a crisis. Since all five currencies (and economies) collapsed

rather than just one as expected, it seems that financial contagion is a better explanation than weak domestic fundamentals.

Wing Woo (2000) examined the movements of the risk premia levied on Eurobonds issued by East Asia, and came to two conclusions. First, the great increase in capital flows into East Asia during 1994-1996 was accompanied by a secular decline in the risk premia. These price-quantity movements indicate a positive shift in the supply of funds to Asia. This verification of the existence of "irrational exuberance",[6] implies that the opposite phenomenon, investor panic, must also exist.

Second, the risk premia on Thai Eurobonds increased by 10 basis points following the July 2, 1997 devaluation but it jumped 41 basis points upon the implementation of the IMF program in August 1997, see Table 1. This is because economic agents, both domestic and foreign, could see that the drastically higher interest rates were crippling economic activities and would cause the nonperforming loan (NPL) situation in Thai banks to worsen, and hence started fleeing from financial instruments issued by Thai companies. The IMF program of deflationary macroeconomic policies and abrupt bank closures undermined investor confidence instead of restoring it!

Table 1. Secondary Market Spreads for Eurobonds Issued by Thailand and Indonesia (average of daily spreads, in basis points)

	Thailand	Indonesia
April 1997	89	119
May	89	117
June	88	112
July	98	121
August	139	150
September	176	153
October	197	187
November	445	274
December	476	469
January 1998	452	629
February	300	649
March	254	520

Data Source: McKibbin and Martin (1999)

Spread computed from ten-year dollar-denominated bonds issued by the governments of these countries. Their rates are first converted using Bloomberg's IRR calculations into yields, and then compared with US dollar yields of comparable maturity

Anwar Nasution (2000) pointed out that it was important to cleanse the financial system of insolvent banks but the Indonesian way of doing so (in compliance with IMF conditionality) in late 1997 exacerbated the economic crisis. The government should have taken over the running of the insolvent banks in the short-run rather than have closed them down precipitously.

This way, the lines of credit to solvent borrowers would not have been disrupted, and the confidence of the depositors unperturbed.

To sum up, in hindsight, we can say that:

a) investor panic was the cause of the Asian financial crisis;[7]
b) tightening macroeconomic policies (particularly fiscal policy) is an inappropriate response to panic-induced crisis; and
c) the shutting down of the insolvent banks in Indonesia, South Korea and Thailand should have been carried out in a manner that was sensitive to the possibility of triggering bank runs.

3. INSIGHTS FROM THE CRISIS

There are too many valuable insights in the voluminous literature on the Asian financial crisis for us to summarize here.[8] We have selected two of them for discussion here because of their wide implications for economic management. The first deep insight concerns the natural working of the market mechanism, and the second deep insight concerns the broader context within which the market mechanism operates.

There has long been a tradition of resistance within the economics profession to acknowledge the phenomenon of disorderly market behavior. The most commonly used defense against claims of speculative bubbles is the alternative hypothesis that unstable asset prices reflect unstable government policies. The claim is that observed flip-flop movements in asset prices reflected rational anticipations of changes in government policies that were not realized. This defense against the speculative bubble hypothesis is known in the financial literature as the "peso problem."

The truth is that the peso problem hypothesis cannot really be disproved, even in the case where the fundamentals, ex post, were stable for a long period of time. To see the difficulty of disproving it, suppose that agents, after long experiences with government behavior, have concluded that the government is the chief destabilizing force, and adjusted their financial market behavior accordingly. If the government were to now cease being a destabilizing force, the very fact that the behavioral norm of the government had changed fits the definition of a vacillating government! There is just no way of getting around the sophistry of a determined peso problem believer.

The fact that financial contagion has been common in the 1990's cannot be in serious dispute: the European Exchange Rate Mechanism crisis in 1992-1993, the Mexican and Latin American financial crisis in 1994-1995, the Asian financial crisis in 1997-1998, the conversion of the Russian ruble to a rubble in August 1998, and the collapse of the Brazilian real in January

1999 to a more realistic level. It stretches credibility, if not also the imagination, that all these governments coincidentally shifted to destabilizing policies in the same decade. Herein lies the first deep insight from the Asian financial crisis: *occasional excessive price movements in financial markets are normal and should not be labeled 'peso problems' in a knee-jerk fashion.*

The unpleasant truth is that "bad things can happen to good people" and that economic disasters are not necessarily penitence for economic sins. Crony capitalism is bad regardless of where it exists but it was not the cause of the Asian financial crisis. Paul Volcker (1999), former Chairman of the Federal Reserve Board, put it very well when he wrote:

> "International financial crises, I might even say domestic financial crises, are built into the human genome. When we map the whole thing, we will find something there called greed and something called fear and something called hubris. That is all you need to produce international financial crises in the future. I have not seen anything to raise any doubts about that."

The rejection of the dogmatism of the peso problem approach to interpreting economic phenomenon leads naturally to the rejection of the dogmatism of unreflective market bias. It is with this open-mindedness that Zainal-Abidin (2000) assessed the controversy over the use of capital controls in Malaysia, and found that, to be modest, one could safely say that the capital controls have not rendered the recovery in Malaysia slower than in the other crisis countries. However, if one chose to be less modest, one could point out that the 1998 collapse was in Malaysia was smaller than in Thailand and the Philippines, and that the 1999 recovery in Malaysia was faster than in these two countries. Zainal-Abidin (2000) identified the chief virtues of the controls to be the monetary policy independence to reflate the economy, and the breathing room to drastically restructure the financial and corporate sectors. The main cost of the controls was that Malaysia missed most of the international capital that returned to the region beginning 1998:4Q. A possible cost, that is still not yet clear, may come from concerns that a similar policy could be reintroduced prior warning, hence resulting in a higher risk premium in the future for Malaysian-issued Eurobonds.

The second deep insight from the Asian financial crisis is that "getting the institutions right" is just as important as "getting the prices right" if long-term stable growth is to be guaranteed. There were failures in both domestic economic institutions and international economic institutions. The most relevant domestic economic institution that was inadequate in

pre-1997 Asia was the prudential supervision mechanism in Indonesia, Malaysia, South Korea, and Thailand. The over-borrowing of short-term foreign funds, and the collusive relationship between many domestic banks and their biggest customers rendered these economies vulnerable to exchange rate and interest rate shocks. The most relevant international economic institution that proved inadequate during the Asian crisis was the IMF. Its incorrect diagnosis led to wrong policy advice that worsened the recession caused by the interaction of investor panic, excessive unhedged short-term external debt, and fragile balance sheets of the domestic banks.

The sad case of Indonesia, which experienced a larger output loss and a slower recovery compared with its neighbors, suggests that economic viability depends on political institutions as well. The Indonesian outcomes could arguably be seen as more the results from a flawed political system rather than as the results from a flawed economic system. In the three-decade long rule of Soeharto, he relied upon satisfactory economic growth as the justification for his stewardship of the country. Regularization of the political process was neglected because Soeharto recognised such regularization as a reduction in his power. So instead of establishing political institutions and channels to resolve important socio-political issues about regime legitimacy, political succession, administrative transparency, regional concerns, ethnic disputes and religious tensions, Soeharto resorted to political manipulation, co-optation, and occasional violence to minimize discussions of these issues. The result is that beneath the façade of stable rule buttressed by support from the armed forces, social dissatisfaction with the Soeharto regime was rising in step with the expansion of the middle and professional classes, and in step with the growth of special economic privileges to Soeharto's children, e.g. subsidised loans from state banks, and monopoly import licenses.

As Soeharto entered into his seventies, and as his health showed signs of decline, the tensions associated with political succession became impossible to contain, and fissures within the army appeared. The fissures multiplied and widened when Soeharto promoted his son-in-law, General Prabowo Subianto, over several more senior generals to be the head of the most powerful military command based in Jakarta (Kostrad) -- the post that Soeharto held when he made his bid for political power in 1965. Soeharto's increasingly tendency toward an "all-in-the-family" approach to economic and political matters discredited him considerably within his core constituencies, the army and the bureaucracy. Once the Asian financial crisis revealed that the aging Soeharto had become an incompetent manager, there was massive withdrawal of political support by the upper and middle classes, and factionalism within the army and the civilian bureaucracy spun out of control. The Indonesians, unlike the Malaysians, the South Koreans

and the Thais, did not have the option of expressing their outrage at gross incompetence through the ballot box, and so they expressed their outrage in the only form available to them -- a social explosion that deepened and prolonged the economic meltdown.

The Indonesian experience is consistent with the controversial hypothesis that socio-political development must accompany economic development in order to maintain social stability, a primary prerequisite for continued economic growth. If the hypothesis is true, then the political transition away from 'strongman rule' that had occurred in South Korea and Taiwan must also occur in the remaining authoritarian states in East Asia where democracy has been slighted as a mechanism for resolving social tensions. The case for the expansion of democratic political institutions is thus based not only on moral ground but also on pragmatic, long-term economic considerations. A specific implication of this disturbing hypothesis is that continued political stability in China will require the fourth generation of leaders that will assume power in 2002 to continue introducing creative reforms to co-opt the emerging new social forces, a process that entered into a new phase in 2001 when Jiang Zemin proposed that capitalists be permitted to join the Communist Party of China.

We have so far mentioned only a subset of the institutions that have to be appropriate and in place in order to promote economic growth. The efficient working of the market mechanism necessitates the presence of infrastructural institutions like modern corporate governance; well-defined, transparent bankruptcy procedures; protection of intellectual property rights; and prudential supervision of the financial sector. Furthermore, only if an efficient, objective legal system is already firmly in place, can democratic political institutions and the infrastructural institutions of the market work to their full potential.

To summarise, because the severity of the output collapse was caused by external and internal factors (like instability in the behavior of international banks and inadequate prudential supervision of domestic banks), it is optimal that reforms be implemented at the international level as well as at the country level. Countries should go beyond just increasing their individual resilience to external shocks to acting in concert to restructure the international environment that created the shocks and exacerbated their effects.

4. THINKING LOCALLY, AND ACTING GLOBALLY

The first required action on the international front is for the United Nations to immediately constitute a working group on international capital

flows, including representatives of the developed countries, the developing countries, the major international institutions as well as private-sector observers, to report, within one year, on improvements in the oversight and regulation of cross-border capital flows. The working group should develop, in conjunction with the Bank of International Settlements (BIS), new prudential ratios that are appropriate for the volatile conditions of emerging markets; and, a more timely and more informative reporting system of cross-border lending, hedge fund activities, and derivatives transactions. The working group should also develop, in conjunction with the largest international accounting firms, global accounting standards for financial institutions.

The second required action is to restructure the IMF to improve its performance, and to limit the scope of its activities. Grave flaws in the IMF's procedures and policy recommendations are obvious from the failure of each of the IMF's major packages in 1997-1998 to meet its targets; and from the fact that many of the programs (for example, Korea, Russia, and Brazil) collapsed within weeks of their approval. It is very significant to note that the default premium for Thai Eurobonds started rising dramatically only after the signing of the IMF adjustment package on August 5, 1997. The IMF package of closing many finance companies abruptly to restructure the financial sector in order to restore growth, and, of raising interest rates to defend the exchange rate produced exactly opposite to what was intended. Output and the baht plunged much more than anticipated by the IMF, see Lane, et. al (1999).

It is hence quite incredible that the IMF then went on to apply the same failed programs to Indonesia in October 1997 and Korea in December 1997, producing the same disastrous results in both cases. The IMF had not only exceeded its technical competence in its handling of the Asian financial crisis, it had also, as pointed out by Feldstein (1998), exceeded the mandate given to it by the international community. There was just no need to insist on eliminating domestic subsidies, and terminating monopolies in order to improve the balance of payments situation for a country. This microeconomic restructuring of program countries is tantamount to intrusion into the internal politics of a country. We therefore welcome the recent establishment of an external board to review the IMF's policy advise to developing countries, and the IMF's structural adjustment programs in the poorest countries.

Reform of the IMF should also include amending the IMF voting powers to give greater representation to developing countries, which, after all, constitute eighty-five percent of the world's population, and which bear the burden of failed IMF strategies. The functioning of the IMF Executive Board should be over-hauled, including: public hearings; opportunities for

outside parties to submit evidence to the Board; and solicitations of professional opinions by the Executive Board from beyond the IMF staff.

The third required action is to end monopoly position of the IMF as the sole international arbiter of monetary affairs. There is no justification for its present monopoly status because the IMF is not (and cannot) be a true international lender of last resort. An Asian monetary fund would reflect the pragmatic dictum that one should always seek a second opinion when it comes to considering a major operation on the economy. It has been claimed that the existence of two lenders (monetary funds) would result in competitive lending that would cause both lenders to weaken their conditionalities. This point cannot be correct however as long as the regional fund is not set up to lose money. With explicit incentives for responsible financial fiduciary, the Asian monetary fund would be interested only in diagnosing the economic situation correctly than in automatically assuming a position opposite to that of the IMF in order to show its independence.

The Association of Southeast Asian Nations (ASEAN) has agreed to explore the possibilities of mutual surveillance and pooling of foreign reserves to head off financial contagion. We recommend that this ASEAN initiative be supplemented by a reorientation of the functions of the Asian Development Bank (ADB). ADB should cut back on a large part of its traditional function of infrastructure financing (which has been rendered obsolete by the globalization of financial markets) and focus more on the activities of a monetary fund.

The fourth required action on the international front is to establish an international bankruptcy system to accelerate an orderly workout of international debts when a developing country falls into an extreme indebtedness crisis. This means that debt relief often needs to be an integral component of "rescue" packages in order to encourage creditor-debtor bargains to stretch out loans, convert debts to equity, and occasionally a permanent write down of claims. Private creditors should bear the major burden for renegotiating the timing and repayment terms on existing debts when a financial crisis emerges. After all, the over-lending by international banks enabled the Asian financial crisis.

Since it will clearly take an extended period to establish an international bankruptcy court, even if there is political consensus internationally to do so, Barry Eichengreen's (1999) proposal of setting up "standing committees of creditors" is an excellent stopgap measure. The introduction of other standard procedures in domestic bankruptcy proceedings -- like the automatic stay provision (to prevent grabbing of assets before resolution of bankruptcy in domestic court), and the debtor in possession provision (to enable the firm to continue to obtain working credit while the domestic

bankruptcy process takes place) – into the writing of contracts for Eurobonds would be a great improvement over the present situation.

5. PUTTING OWN HOUSE IN ORDER

Governments must enhance their supervision of all financial institutions, and enforce BIS-style prudential ratios on the financial institutions. Financial institutions should be required to quickly adopt internationally accepted accounting standards, and to file more frequent reports on their portfolios and their exposure to sectoral and currency risks, in order to allow better oversight by shareholders and the regulatory bodies. The ownership structure of the banking sector in emerging economies should be diversified to include foreign ownership, in order to reduce the risks of systemic banking collapse, and to generate demonstration effects to the domestic banks regarding efficient operations and prudent risk management.

Institutional reform beyond the financial sector include ensuring a well-defined, transparent, fast-functioning bankruptcy system that could handle many cases of debt workup in an orderly fashion; an incorruptible, efficient judiciary process for commercial disputes; and a corporate governance system where the rights of the minority shareholders are protected. These three mechanisms are absolutely crucial for preventing capital flight ("asset grabbing") when firms show signs of financial stress.

There is unlikely to be a single exchange rate regime that is optimal for all countries, or maybe even for any country over time. The optimal exchange rate regime depends at least on the economic structure, type of shock, and societal preferences over tradeoffs among outcomes like unemployment, inflation, and income distribution. From the viewpoint of discouraging speculative attacks on a currency, the ultimate solution would be dollarisation because then there would no longer be an exchange rate to defend. A credible currency board arrangement would also achieve this objective and, at the same time, allow the country to collect an interest income on its foreign reserves. The problem, however, is how to maintain the credibility of a permanent peg because even the Hong Kong dollar was attacked during the Asian financial crisis.

The interesting part of the Hong Kong experience is that it demolishes the conventional depiction of the currency board being a passive intermediary that swaps the Hong Kong dollar for the U.S. dollar on demand, and vice-versa. In August 1998, the Hong Kong Monetary Authority (HKMA) defended the currency peg by taking an open position against the speculators by undertaking large-scale purchases of domestic equities. The dominant verdict about this unconventional intervention by HKMA is that it

broke the speculative attack and restored order to the financial markets. The unambiguous message from this episode is that a currency board has to be ready to sometimes implement extraordinary measures in order to convince the market about the credibility of the peg. Although the 1998 episode may not be enough to definitively falsify the alleged virtue of the currency board being an automatic foolproof mechanism that works best when left alone, at the minimum, it certainly shows that leaving this mechanism on automatic pilot can result in very high interest rates for a much longer period.

The more general and more important point is not whether a currency board can survive any speculative attack at all but the cost of surviving such an attack. Take the case of a drop in foreign demand that requires the real exchange rate be depreciated in order to preserve external equilibrium. Since the nominal exchange rate is fixed, domestic prices would have to decline, and a decline in the general price level is usually accompanied by a temporary increase in unemployment. This reasoning implies that the ideal candidate for a currency board regime is a country with very flexible labor markets and flexible product markets. Under a currency board, countries with wages that are set by long-term contracts, which are indexed against inflation, are likely to suffer prolonged unemployment when an adverse negative shock occurs.

The theoretical predictions just discussed are borne out by recent experience. The predicted tradeoff (generated by a negative external shock) between exchange rate depreciation and price deflation is supported when we compare Hong Kong and Argentina -- two economies with currency boards -- with Singapore and Brazil respectively, see Table 2. In response to the competitive gains of most East Asian and Latin American economies from the 1997-1999 depreciation of their currencies, the consumer price indices of Hong Kong and Argentina have declined continually in the 1999-2001 period, and are predicted to decline further in 2002 if the nominal pegs are maintained. The output consequences of the price deflation in Hong Kong and Argentina are also in accordance with our theoretical priors: Hong Kong, famous for its economic flexibility, had positive growth in 1999-2000, while Argentina, well-known for its economic sclerosis, had negative growth in 1999-2000.[9]

The experiences of the four countries in Table 2 supports the wisdom of depreciating the currency in response to negative external shocks – whether real or financial. The negative capital account shock of 1997-1998 caused output in Hong Kong and Brazil to decline in 1998, and output in Argentina to decline in 1999-2000, but the negative capital account shock did not cause output to decline in Singapore in the 1998-2000 period. The difference between Singapore and these other three countries is that Singapore

depreciated its currency almost 20 percent between July 1997 and December 1998, and these other countries had no, or very little, devaluation.[10]

Table 2. Comparison of Growth and Inflation under Currency Boards and Adjustable Pegs

	1996	1997	1998	1999	2000	projected 2001	projected 2002
Hong Kong							
GDP growth, %	4.5	5.0	-5.3	3.0	10.5	-0.2	2.6
CPI growth, %	6.4	5.7	2.8	-4.0	-3.8	-1.5	-0.9
Units of Domestic Currency per US$	7.73	7.74	7.75	7.76	7.79	7.80	7.80
Singapore							
GDP growth, %	7.6	8.5	0.1	5.9	9.9	-3.4	-0.5
CPI growth, %	1.4	2.0	-0.3	0.0	1.4	1.1	0.9
Units of Domestic Currency per US$	1.41	1.49	1.67	1.70	1.72	1.79	1.78
Argentina							
GDP growth, %	5.5	8.1	3.8	-3.4	-0.5	-2.2	-1.0
CPI growth, %	0.2	0.5	0.9	-1.2	-0.9	-0.8	-0.6
Units of Domestic Currency per US$	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Brazil							
GDP growth, %	2.8	3.2	-0.5	0.8	4.2	1.6	2.0
CPI growth, %	15.8	6.9	3.2	4.9	7.0	6.7	6.5
Units of Domestic Currency per US$	1.01	1.08	1.16	1.81	1.83	2.40	2.88

CPI = consumer price index

Data are from the relevant country reports of the Economic Intelligence Unit (EIU). The projected numbers for 2001 and 2002 are from the November 2001 issues.

When the negative export shock from the U.S. recession hit the emerging markets in 2001, only Brazil had positive growth that year, and it is noteworthy that Brazil was the only economy that had significant currency depreciation that year.[11] Because Argentina maintained its currency board system despite the prolonged recession and sustained capital flight, the new negative export shock in 2001 brought the economic crisis in Argentina to a higher level. With the unemployment rate at almost 17 percent, and with bank deposits nearly 20 percent lower than a year ago, Argentine depositors started bank runs in late November 2001. On December 1, 2001, the government limited cash withdrawals to $250 a week for three months, mandated that travelers could only take up to $1,000 out of the country, required that new bank loans be in U.S. dollars, and ordered banks to pay lower interest rates on Peso-denominated deposits than on US$-denominated

deposits.[12] The last two steps put Argentina on the road to dollarisation. This crisis shows no signs of resolution as this chapter is going to press.

One natural question is whether Argentina can (or, will) follow the HKMA example of taking an open position opposite to that of the speculators, and hence calm the financial markets. We think the reason why Domingo Cavallo, the Argentine Economy Minister, has not already mounted a HKMA-style rescue operation is that it was unlikely to have worked. Unlike Hong Kong, the public finance of the Argentine state is in poor shape and getting worse, and the Argentine state is a net debtor to its own citizens and to the rest of the world. Since Argentina does not even have the means to service its external debt, Argentina certainly does not have enough financial resources to convince speculators that they could not break the peg. Herein, we may have an important reason for why HKMA was able to calm the currency markets in August 1998. The survival of the Hong Kong currency board was due not to the HKMA intervention being bold, unconventional, and unexpected, but to its large financial resources, and to the perceived readiness of China to commit its enormous reserves to defending the Hong Kong dollar.

It is now almost conventional wisdom that, with open capital accounts, the choice of exchange rate regime is constrained by the corner solutions of a hard peg (e.g. dollarisation, currency boards) or a free float. The key hypothesis behind this bipolar view is that the combination of an explicitly adjustable peg regime and an open capital account makes the currency a tempting target for speculators, and is hence unviable in the long run. This hypothesis has its basis in the observed "hollowing out of the middle of the distribution of exchange rate regimes, with the share of both hard pegs and floating gaining at the expense of soft pegs" (Fischer, 2001, pp. 22). Given this new intellectual background, and given the obvious preference of the four Asian crisis countries for a predictable exchange rate as evidenced by the pre-crisis fixity of the Thai, Malaysian, and South Korean (in declining order of the hardness of the peg) currencies, and the crawling peg of the Indonesian Rupiah, it is quite surprising that none of the four Asian crisis countries has adopted the currency board system in the wake of the crisis. We suspect that the special circumstances behind the survival of the currency board in Hong Kong may have contributed to why none of these four countries have embraced the currency board arrangement.

The post-1998 exchange rate management in the four Asian crisis countries appears to support the "corner solution" perspective. Compared to the pre-crisis period, Indonesia, South Korea, and Thailand have been allowing their currencies to move more freely in response to foreign exchange market pressure. These three countries still intervene substantially occasionally because they see the shallowness of their foreign

exchange rates as a cause of excessive exchange rate volatility. Malaysia is the only country that has returned to an adjustable peg, but it has done so with a significant difference from the pre-crisis situation, Malaysia now stands ready to re-impose capital controls to defend the peg.

Given the increasing applicability of the bipolar view of viable exchange rate regimes, and the special circumstances of Hong Kong that have made its output performance so different from that of Argentina, we think that the typical emerging economy should in general pursue flexible exchange rate arrangements (e.g. wide crawling bands, open floats). Flexible exchange rates will reduce the severity of capital flight because investors who panic and wish to send their funds out must now take into account that their actions could drive down the value of the currency and reduce the amount of foreign exchange that they would receive.

We do not, however, equate flexible exchange rates with the withdrawal of the state from capital account management. We in fact recommend that governments reduce short-term capital inflows through a combination of capital controls and taxes on capital inflow (e.g. a Tobin tax). Short-term foreign borrowing by domestic banks should be tightly limited as a matter of prudential policy. But while controls on short-term capital inflows may be advisable in many countries, we hold that controls on capital *outflows* should almost always be avoided, since controls on outflows tend to undermine government credibility and provide an inducement towards irresponsible policies.

As a practical operational rule, the government should always maintain foreign reserves that exceed the amount of outstanding external short-term debt. This operational rule is important because if the external short-term creditors do panic, the country will be able to pay them off and hence avert a more general panic.[13] The first corollary of this rule is that a country should impose controls to limit the amount of external short-term debt to the size of its foreign reserves. The second corollary is that a country should stop defending its exchange rate with sales of foreign exchange when its foreign exchange reserves stock has fallen to the level of its external short-term debt. Its policy options at that point could be a combination of actively encouraging the reduction of external short-term debt, float the currency or defend the currency by other means.

The suggestions that we made above about exchange rate management cannot be immutable to vast changes in international economic and political relations. For countries that wish to forge even deeper economic integration among themselves in the form of a free trade area, then coordinated exchange rate management becomes desirable. If the free trade area were to advance to an economic union with free labor mobility and greater institutional harmonization, then a common currency could be the

optimal form of exchange rate coordination. And, if eventual political integration were the common goal, then the existence of a common currency would promote this political agenda.

6. THE PROSPECTS OF RETURNING TO HIGH-GROWTH

Southeast Asia is unlikely to return to the high growth rate of the previous 20 years, unless it pursues the anti-financial crisis measures, as well as responds appropriately to the process of economic globalization. At this point, economic globalization has produced intense competition to Southeast Asian industrial exports from Chinese industrial exports. Competition from China will become even more intense now that China has joined WTO. In the future, Southeast Asian industrial exports will face additional competition from Indian industrial exports. The truth is that the export of labor-intensive industrial goods can no longer be the only engine of growth in Southeast Asia. Southeast Asia needs to have an additional engine of growth if it is to continue to grow at 7 percent a year.

In order to see what the new engine of growth for Southeast Asia ought to be, we must recognize the centrality of technological changes in long-term economic growth.[14] Robert Solow has shown that, conceptually, the only way for GDP per capita to keep on increasing is through continual technological improvements, and that, empirically, the bulk of the increase in GDP per capita can be attributed to technological improvements. If we look at Asia, we see that with the exception of Japan, Taiwan and Korea, the technology that Southeast Asia has been using has been developed outside of the region. Southeast Asia must do what Japan, Korea and Taiwan have succeeded doing.

This transition to endogenous growth is a difficult thing to accomplish, however. Most of technological innovation is concentrated in only a few countries: the top 10 countries account for 90% of the patents in the world, and the top 20 countries account for 99% of the patents. The world can be divided the world into 3 types of countries according to technical capacity:

a) the technological leaders, which are 20 countries that have 12% of the world's population,
b) the technology users like China, and Southeast Asia, which have 50% of the world's population,
c) the technologically excluded, which encompass Africa and the poorest Asian countries, and have about one-third of the world's population.

There are two ways for a country to enhance its technological capacity and get new cutting edge technology. The first way is to have the ability to innovate indigenously. The second way is to have the ability to obtain technology transfer from elsewhere, e.g. technological diffusion via foreign direct investment. *The Global Competitiveness Report 2000* published by the World Economic Forum has an overall ranking of 59 countries according to technological capacity. This technological capacity index is determined by averaging two other indices, the "indigenous innovation index" and the "technology transfer index."

It is instructive to see the national ranking in the two component indices and in the overall technology index. Southeast Asia refers to the averaged ranking of Indonesia, Malaysia, Philippines, and Thailand.

Indigenous Innovation Index	
USA	1
Finland	2
Germany	3
Switzerland	4
Japan	5
Singapore	14
Taiwan	16
South Korea	22
Hong Kong	27
Southeast Asia	46

Technology Transfer Index	
Singapore	1
Ireland	2
Luxembourg	3
Taiwan	12
South Korea	13
Hong Kong	17
Southeast Asia	27

Overall Technology Index	
USA	1
Finland	2
Singapore	3
Ireland	4
Germany	5
Japan	7
Taiwan	23
Korea	24
Hong Kong	30
Southeast Asia	36

Southeast Asia clearly has a lot of work to do in enhancing its technological capability. Of course, the growth rate of a country depends on a number of other important factors beside technological capacity. For example, the story of the Soviet Union is the story of world-class accomplishments in basic scientific research but of abysmal performance in applied scientific research, and, hence, in overall economic growth. The fundamental problem in the former Soviet Union was the absence of a market economy, which meant that there were grossly inadequate incentives to mobilize people to translate basic research into commercial applications. For market economies, factors like economic openness, adequacy of infrastructure, efficiency and incorruptibility of the government, quality of financial institutions, and astuteness in macroeconomic management are of fundamental importance in economic growth. The general low ranking of Southeast in these other dimensions along with its low ranking in technological capacity help explain why it has performed quite poorly in the final index for growth competitiveness for the 59 countries. The high rankings that Hong Kong has in these other dimensions (e.g. 1 in trade openness, 4 in sophistication of financial markets) boosted its overall ranking despite being ranked 30 in technology level. Specifically:

Growth Competitiveness Index in 2000	
United States	1
Singapore	2
Luxembourg	3
Netherlands	4
Ireland	5
Finland	6
Canada	7
Hong Kong	8
Taiwan	11
Japan	21
Malaysia	25
Korea	28
Thailand	31
Philippines	37
Indonesia	44
Bulgaria	58
Ecuador	59
Average of the Southeast Asia 4	*34*

Clearly, while Southeast Asia should boost its technological capacity by focusing on applied research, it also needs people at the frontier of research. It means that there should be more investment in higher education and not in airplane factories. The establishment of linkages between the universities

and the business sector should be fostered, and the establishment of state-owned factories be stopped.

We should be clear that our suggestion that aggressive technology policies be adopted in Southeast Asia is compatible with our acceptance of the comparative advantage principle, and the importance of pursuing market-compatible economic policies. When the inherited factor endowment of a country consists largely of unskilled labor, it is indeed a mistake to use industrial policies to ensure that the chief export of the country is technology-intensive goods. It is not a mistake, however, to use policies to increase human capital formation and to enhance technology transfers from abroad so that the country will begin to export more goods that are technology-intensive. It would require a simplistic ideological view of what's a laissez-faire economy in order to ignore the US$90 billion in the US government budget that's targeted to increase the technological capacity of the United States.

NOTES

* This paper is based on the presentations at the Panel on Monetary Issues in the Asia Pacific Region, and the Panel on New Challenges and Opportunities in Asian Economic Development during the inaugural biennial conference of the Hong Kong Economic Association held on December 14-16, 2000. This paper draws upon ongoing work of the Asian Competitiveness Project of the East Asia Program at the Center for International Development, Harvard University. I am most grateful to Professor Ho Lok Sang for his insightful comments on an earlier draft.

1 For example, see the empirical investigation in Woo, Carleton and Rosario (2000).

2 Lane, Ghosh, Hamann, Phillips, Schulze-Ghattas and Tsikata (1999), and IMF (1997).

3 IMF (1998).

4 Stiglitz (1999).

5 Krugman (1998a).

6 A term coined by Alan Greenspan in December 1996 to describe the U.S. stock market. It is important to note that assumption of rational expectations (in the Muthian sense of model-consistent expectations) does not rule out the possibility of speculative bubbles, see Woo (1987) for a discussion of several types of rational bubbles, and empirical evidence of their existence.

7 A point also made by Montes (1998), McKibbin (1998) and Chang (1999).

8 See, for example, Delhaise (1999), Eichengreen (1999), Garran (1998), Jomo (1998), McLeod and Garnaut (1998), Woo, Sachs and Schwab (2000) and World Bank (1998).

9 Note that the immediate lowering of inflation in 1998 and the much larger price deflation in Hong Kong compared to Argentina in 1998-2001 supports the conventional view that Hong Kong has more flexible markets than Argentina. Part of the larger price deflation in Hong Kong, especially in 1998, could be due to the depressing effect of the Tenant Purchase Scheme (introduced in December 1997) on house prices, see Ho (2001).

10 Brazil recovered after it devalued in early 1999, and Hong Kong's deep deflation – a reflection of its structural flexibility -- was able to induce recovery.

11 Singapore would most likely still have experienced a recession in 2001 even if it had depreciated its currency by the same amount as Brazil. This is because the negative export shock was focused on semiconductors, and they dominated Singaporean exports but not Brazilian exports. This difference in export structure also explains why Singapore's recession is so much more severe than Hong Kong's.

12 "Argentina Restricts Bank Withdrawals," *Washington Post*, December 2, 2001; "Last Tango: Long Hailed as Hero, Reformer in Argentina Sees His Dream Sour," *Wall Street Journal*, December 4, 2001; and "Argentine Economy Minister Tries to Maintain Optimism," *New York Times*, December 6, 2001.

13 This may explain the extremely high statistical significance of the (short-term debt/reserves) variable in predicting financial crisis in all the probit specifications estimated in Radelet and Sachs (1998).

14 We are not denying that an important key to maintaining economic success is for a country to tighten its belt to raise its saving rate and increase the rate of capital accumulation. A high saving rate is a good thing to have. However, we know from the Nobel prize winning theoretical analysis of Robert Solow that a higher saving rate will raise the long-run GDP per capita, but this long-run GDP per capita will stay at this new level and not increase any further unless the saving rate is raised continually. The point is that each saving rate is associated in a positive relationship with a particular level of steady-state GDP per capita.

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