SIAN EVELOPMENT ANK NSTITUTE

Capital-Account Crisis and Credit Contraction

The New Nature of Crisis Requires New Policy Responses

Masaru Yoshitomi
and
Kenichi Ohno

May 1999

The severity of the Asian financial crisis comes from its dual character of being an external currency crisis, combined with a domestic banking crisis. But if policies designed for the traditional current-account crisis only—such as tight money and budget and major structural reforms—are applied to this unique type of crisis, the situation will get considerably worse. The authors propose an alternative policy package to cure this new disease characterized as capital-account crisis.

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PREFACE

The ADB Institute aims to explore most appropriate development paradigms for Asia composed of the well-balanced roles of markets, institutions, and governments in the post-crisis period.

Under this broad research project on development paradigms, ADB Institute Working Paper Series will contribute to disseminating work-in-progress as a building block of the project and inviting comments and questions.

I trust that this series will provoke constructive discussions among policy makers as well as researchers about where Asian economies should go from the current crisis.

Masaru Yoshitomi
Dean
ADB Institute

ABSTRACT

The malignancy of the Asian crisis comes from its characteristics as twin financial crises: currency crisis (external) and banking crisis (internal). It is a capital-account crisis combined with domestic credit contraction, as distinct from the traditional current-account crisis. The new nature of the crisis calls for policy responses entirely different from the conventional ones.

The traditional current-account crisis is caused by the deterioration of domestic macroeconomic performance, such as price inflation, fiscal deficits and low saving rates. For this type of crisis, conventional policies such as tight money, fiscal consolidation, structural reforms, and output- and expenditure-switching exchange rate policy are appropriate. However, economic performance of pre-crisis developing Asia was quite good as measured by conventional macroeconomic variables. The critical question is: what consequences will result if the policy prescriptions for the traditional current-account crisis are adopted against the Asian-type capital-account crisis which hits even economies without serious macroeconomic imbalances. We argue that such policy misapplication is likely to transform the initial twin crises into something far more serious, namely the collapse of real economic activity.

This paper attempts, first of all, to identify the nature and mechanism of the capital-account crisis. The capital-account crisis is characterized by a massive international capital inflow greatly surpassing the underlying current-account deficit, as well as by the composition of such an inflow being dominated by short-term, foreign currency denominated loans. The resultant double mismatches in both currency and maturity in the balance sheets of domestic financial institutions are responsible for the subsequent twin financial crises: currency precipitation accompanied by international liquidity crisis on the one hand and domestic banking crisis leading to credit contraction on the other. Second, we show how and why policy prescriptions for the traditional current-account crisis, if applied to the capital-account crisis, will exacerbate the problems already inherent in such a crisis. Mounting non-performing loans and abrupt financial disintermediation play key roles in this process. Third, we present alternative policy responses for resolving the twin financial crises which must be implemented by both the governments of the crisis-hit countries as well as the international financial community.

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Capital-Account Crisis and Credit Contraction

The New Nature of Crisis Requires New Policy Responses

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I. Introduction

Asia's crisis that began with the floating of the Thai baht in July 1997 has been surprisingly harsh and persistent. What started as a typical currency crisis in a medium-sized developing country continued to deepen as it spread to other countries and regions with extremely adverse real-sector consequences. Even as the initial shock waves subsided and some financial and external indicators—such as the exchange rate, interest rates, net exports and inflation—began to improve, declines in output and employment continued in the crisis-ridden economies particularly in 1998. Countries that were spared from the first round of contagion remained ever vulnerable. The crisis has led to a call for a redesign of global financial architecture, as well as a need for the strengthening of domestic financial markets.

As the World Bank report on private capital flows to developing countries (written before the eruption of the Asian crisis) clearly demonstrates, currency crises are not historically uncommon (World Bank 1997). However, the Asian crisis is unique in its severity, duration and contagion. Unlike other currency crises with only limited impacts, it now threatens the stability of the international financial system. A large bulk of the literature on the Asian crisis is directed toward explaining its cause; but an equally intense inquiry should be made into why it developed into a major economic disaster of this magnitude after it began.

The dimension of the Asian crisis cannot be gauged properly by the first-generation models of currency crisis that point to bad conventional macroeconomic fundamentals (say, unsustainable fiscal deficits) of individual countries as the main cause. Moreover, even though the second-generation models of currency crisis, which highlight multiple equilibria, self-fulfilling attacks and herd behavior, may (partly) explain its cause and contagion, they do not address the whole mechanism of this crisis including its depth and duration (for a summary of first- and second-generation models, see the appendix). Instead, we argue that a new theoretical perspective is needed to diagnose, manage and prevent this type of systemic currency crisis.

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The malignancy of the Asian crisis comes from its characteristics as twin financial crises. Externally, it is a "capital-account crisis" (Yoshitomi 1998) driven by excessive net private capital inflows relative to underlying current-account deficits, and further worsened by their composition dominated by short-term, foreign currency-denominated loans. After a few to several years, the unsustainable lending boom comes to an end as asset bubbles burst, excess capacity emerges and capital flows are reversed, leading to currency attacks which impose wrenching adjustments on the macroeconomy (World Bank 1997). Internally, it is a banking crisis and associated severe credit contraction. Exacerbated by inappropriate policy responses, initial currency and banking crises turn into an even more abrupt financial disintermediation in the banking sector, bringing production and investment to a halt. The two financial shocks reinforce each other as confidence plummets.[1]

While capital-account crisis and credit contraction separately are by no means new, their interaction on a regional scale was unheard of prior to the Asian crisis. Even today, not all currency crises are of the Asian type. The Russian crisis in mid-1998 and the Brazilian crisis in early 1999—although triggered by unstable market psychology in the aftermath of the Asian crisis—belong to the traditional type, caused mainly by unsustainable fiscal deficits. Even the 1994 Mexican crisis, which was a "capital-account crisis" by our definition, did not develop into a full-fledged domestic credit contraction and was relatively short-lived.

This paper analyzes the twin financial crises that hit developing Asia in 1997. Against the complications from a capital-account crisis and banking crisis-cum-credit contraction, the usual prescription for fighting a budget- or inflation-driven "current-account crisis", consisting of macroeconomic austerity and structural adjustments, is highly counterproductive as it worsens and perpetuates the crisis. In short, the different nature of the crisis requires different policy responses. We propose a new set of policies to cope with the new Asian-type systemic currency crisis.

II. Capital-account Crisis

a. Definition and cause

We define the capital-account crisis as a series of severe macroeconomic adjustments forced, initially, by large inflows of private capital relative to underlying current-account deficits dominated by short-term loans, then followed by their sudden and massive reversal. In terms of the balance-of-payments identity, such an adverse swing in private capital (which has its own dynamics—see below) must be financed by international aid, a change in foreign reserves or an improvement in the current account. In this type of crisis, it is the (private) capital account that drives the current account and not vice versa. In the pre-crisis period, current-account deficits increased

[1] These situations (both capital-account crisis and credit contraction) are often described as a "liquidity crisis" or "financial panic" with ambiguous and multiple meanings. For example, one official in an international body has used the term "liquidity" loosely and interchangeably as international reserves, money supply and domestic credit. Separately, the debate as to whether the Asian crisis contagion was due to fundamental linkage or "financial panic" does not address the interaction between external currency crisis and internal banking crisis, the main topic of this paper. Thus we prefer not to use either term in defining the twin financial crises in order to avoid confusion.

as a result of excess capital-account surpluses. After the reversal, current-account surpluses are generated by import contraction, which in turn is caused by financial disintermediation and collapsing output (see below). Consequences on the real sector are very serious indeed.

In addition to sheer size, the composition of capital inflows contributed significantly to the ensuing difficulty in developing Asia, as already mentioned. The accelerated capital inflows into the region in the first half of the 1990s were not mainly in the traditional forms of official development aid, foreign direct investment or long-term syndicated bank loans which are unlikely to reverse quickly. But rather, short-term bank borrowing constituted the largest part of the great financial boom, supplemented by increased investment in securities markets. Significantly, these short-term bank loans denominated mainly in US dollars were then converted into local currencies for long-term investment in real estate and manufacturing. Not only are short-term lendings foot-loose, negotiations for their rollover or rescheduling are technically more difficult. Moreover, incurred foreign-currency denominated debt was largely unhedged. This double mismatch—i.e., mismatches in both maturity and currency—made the balance sheets of local financial institutions and enterprises extremely vulnerable to external shocks, including currency devaluation, a refusal of rollover by foreign investors and shortage of international reserves.

Reckless overborrowing by the private sectors of developing Asia in the pre-crisis period is well corroborated by data (see below), yet the underlying cause of the overborrowing is still hotly debated. Even if we confine ourselves to financial aspects, there is a view that points to policy mismanagement of the crisis-countries themselves, especially the simultaneous maintenance of a fixed exchange rate and substantial international interest differentials. However, pre-crisis Asia was not on a rigid dollar peg as most countries in fact adjusted their dollar rates from time to time. Statistically, there is no correlation between pre-crisis rigidity or overvaluation of the domestic currency and the severity of subsequent currency attacks (Ohno 1999).[2]

Developing and transitional economies often face capital-account crises in the process of global financial integration. Especially in the post-Cold War period, the virtues of economic liberalization and external financial opening has been preached to latecomer countries with increasing pressure. The policymakers in these countries have been strongly advised by an international financial institution consensus to quickly import “international best practices” and integrate with the global economy. But institutional reforms for transparency, accountability, corporate governance and so on take time, while major exchange rates and international financial markets remain highly volatile. Premature and mismanaged financial integration will lead to overborrowing with unwarranted exuberance until the bubble crashes inevitably, bringing real and financial disasters (Stiglitz 1999, World Bank 1997). This points to the critical issue of sequencing among domestic financial liberalization, institutional building and reforms, and capital-account convertibility. Furthermore, some find more fault with the overall design of the international financial system, rather than policies and institutions of individual countries, whose improvements are welcome but do not necessarily guarantee immunity from future crises.[3]

[2] Only Thailand, where the crisis started, might be "duly blamed" for purposely attracting foreign bank loans through “off-shore” financial markets. But subsequent contagion into the rest of Asia and the world cannot be explained by this line of logic.

[3] As Stiglitz (1999) puts it graphically: “If there were a single accident on a road, it is reasonable to blame

Superimposed on this debate is the question of "moral hazard"—i.e., excessive risk taking prompted by the existence of an insurance mechanism—that aggravates overborrowing. Despite its theoretical appeal, however, practical relevance of moral hazard as the primary cause of currency crises is yet to be demonstrated empirically. In Thailand, for example, the government's decision to close one big bank and several non-banks in the early 1980s did not prevent the emergence of overborrowing a decade later.[4]

However, the cause of initial overborrowing will not be discussed further in this paper. As our primary objective is to show how the Asian crisis got worse after it started.

b. Distinguishing capital-account crisis from current-account crisis

Let us denote the balance of payments identity as follows:

(1) $CA + KA_p + KA_o + EO = \ddot{A}IR$

where

CA : current account
KA_p : private capital account
KA_o : official capital account
EO : errors and omissions (which contain unrecorded private financial flows)
ÄIR : change in international reserves

This can be rewritten as

(2) $CA = -KA_p - KA_o + \ddot{A}IR - EO$

or, alternatively,

(3) $KA_p = -CA - KA_o + \ddot{A}IR - EO$

An identity by itself does not prove causality. But using the identity, we can clarify the difference between the capital-account crisis and the traditional current-account crisis. In each of equations (2) and (3), the left-hand side variable is assumed to change first while the right-hand side variables adjust in order to finance this "autonomous" shock (let us ignore EO which is not important in our theoretical discussion and can be considered as part of KA_p for practical purposes).

Let us begin with the traditional current-account crisis, which is simpler. Using equation (2), the problem can be described as follows. Due to macroeconomic

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the driver. If however, there were dozens of accidents at the same curve in the road, one should at least ask whether the road needs to be redesigned." (p.6)

[4] Another important question is whose moral hazard? The problem can occur on many levels, for example: (i) governments lose policy discipline because of rescues headed by the IMF; (ii) international private investors overlend for the same reason; (iii) bank managers become careless due to government protection; (iv) borrowing enterprises similarly misbehave; and (v) depositors become risk-insensitive because of a deposit insurance system. For meaningful discussions, relative importance of each type of moral hazard must be identified.

policy slippage (i.e., large budget deficits and high inflation), the domestic economy overspends its income. The amount of overspending in excess of domestic production is equal to –CA by the well-known national income identity. This can be financed if private capital inflows (KA_p) are strong, but that is unlikely in an economy with weak policy discipline. As usable international reserves (IR) dwindle, the balance of payments looks increasingly unsustainable. The country faced with the prospect of default rushes to the International Monetary Fund. The Fund—sometimes with other bilateral and multilateral donors—provides emergency funds in return for the implementation of corrective measures. These include macroeconomic stabilization aimed at restraining domestic expenditure, as well as expenditure- and production-switching policy and structural adjustment designed to strengthen supply capacity. Exchange rate devaluation may be needed to enhance these adjustments. While details can be mismanaged and other important factors can be missed, overall, the Fund's policy prescription is correct and necessary for this type of crisis.

c. Four stages of the capital-account crisis

By contrast, the capital-account crisis is driven in equation (3) by an increase in KA_p which subsequently collapses. As it does so, the impact is absorbed by (i) current account, (ii) official capital inflows, (iii) changes in international reserves—or a combination thereof. More concretely, the typical Asian crisis story ran as follows (Table 1).

Stage 1: Overborrowing begins: as an economy is opened up financially, investors' herd behavior, possibly aggravated by the moral hazard problem, causes private capital to flow in excessively. As a result of too much capital inflow exceeding the underlying current-account deficit, a surplus in the overall balance of payments emerges. This causes international reserves to accumulate,[5] expands monetary and domestic credit aggregates, and ignites a domestic economic boom. Due to the increased domestic absorption compared with domestic production, the current account begins to deteriorate (but not necessarily to the extent of fully offsetting the incoming capital, i.e., $KA_p > -CA > 0$).

Stage 2: Increasing vulnerability: while the current-account deficit widens increasingly to match the capital-account surplus, continued overborrowing and over-absorption reach their limits. Excess capacity and asset bubbles in stock and real estate become apparently inconsistent with the underlying fundamentals, raising the probability of a crash (oftentimes the bubbles burst prior to currency attacks, as in Thailand in 1995-96). Furthermore, the ballooning current-account deficit raises doubt about its sustainability and concern for the loss of competitiveness.[6] These are the

[5] In theory, if the domestic currency is on a pure float without government intervention, capital inflows cause appreciation rather than accumulation of reserves. That would partially or fully offset the incipient economic boom. But in reality, very few developing economies can adopt a pure float because of possible volatility of the exchange rate and the shallowness of the domestic financial market. Those in Asia all managed their currencies to varying degrees. Thus, the sequence of events described in the text reflects reality.

[6] In the capital-account crisis, deterioration of the current account in the pre-crisis period is the result of excessive capital inflows, and not the cause of the crisis. However, market observers often mistake it for the sign of weak fiscal discipline or a loss of international competitiveness. Although their inference is incorrect, this perception nonetheless contributes to the decline of overall confidence. In the most seriously affected Asian economies, fiscal imbalance was not a problem, and there is also no evidence of significant exchange rate overvaluation (Ohno 1999).

trigger mechanisms for twin financial crises (i.e., currency and banking crises). Currency and maturity mismatches make the balance sheets of domestic financial institutions and enterprises highly vulnerable to the combined effect of deterioration of the assets, depreciation of exchange rate, and a refusal of rollover by foreign creditors (see above; also McKinnon 1999). Seeing all this, foreigners begin to repatriate their investments and residents begin to shift their savings abroad. The capital-account surplus starts to decline and then turns into deficit, resulting in an overall-balance-of-payments deficit, given the increased current-account deficit. The country is forced to defend the exchange rate by intervention, but leading to the loss of international reserves.

Stage 3: Reversal: after probing attacks or as a result of crisis contagion, market psychology collectively turns negative and a currency attack finally succeeds. Countries differ as to how long they hold on to their exchange rates (and how much reserves they are prepared to lose) before they let them float. As the exchange rate depreciates, the balance sheets of financial institutions and enterprises with unhedged foreign-currency debt are seriously damaged; currency and banking crisis reinforce each other through this balance-sheet effect. As confidence evaporates, panic spreads and real-sector activities—such as international trade, merchandise distribution, production and investment—are impeded. Real GDP begins to decline and domestic financial crisis deepens.

Stage 4: International rescue: where the international community led by the IMF provides emergency financing and simultaneously imposes policy conditionality. While new private lending is hardly available, bilateral and multilateral official inflows (whose disbursements were rather slow in Asia) as well as private debt workouts partly ameliorate the balance-of-payments pressure, permitting the rebuilding of lost international reserves. Because of the suddenness and massiveness of the capital reversal, the amount of money required to replenish international reserves under the capital-account crisis is far greater than in the case of the traditional current-account crisis (which can usually be financed within the prescribed limits of IMF lending for each member country). At the same time, domestic financial crisis reduces business investment and shakes consumer confidence, resulting in a sharp decline in domestic demand. Credit risks rise drastically due to increasing defaults. Thus, the capital-account crisis simultaneously causes domestic financial crisis, defaults, and contraction of domestic absorption. Under such circumstances, adoption of macroeconomic austerity and bold financial and enterprise restructuring designed for the traditional current-account crisis will further aggravate both domestic financial crisis and demand contraction. Their adverse impacts on credit contraction and output implosion are likely to persist long after calm is restored in the currency market (see section III). The resulting collapse in imports and improvement in the current account should not be misconstrued as a positive development, as they are signaling a complete breakdown of the financial and real sectors of that economy.

This sequence of events is highly stylized and gives only a rough picture of the crisis which unfolded in developing Asia in recent years. To make it more precise, peculiarities of individual countries must be added or subtracted. But we believe that this broad view more appropriately captures the essence of what has happened than the alternative views emphasizing macroeconomic policy mistakes of individual countries, exchange-rate misalignments, large current-account deficits, weak financial institutions and monitoring, or even the recent literature on crisis contagion and

financial panic (which does not recognize the double financial nature of the present crisis).

Most observers including the IMF (1999)—see section IV—now recognize this private capital-driven nature of the Asian crisis, although some may prefer different names for what we call the capital-account crisis (say, the "21st century-type" crisis). But the central problem is that this recognition is still not reflected in the design of policy prescription and conditionality. Macroeconomic belt-tightening and "structural adjustments" which are good only for traditional current-account crises are recommended to the economies mired in capital-account crises. This gap between diagnosis and prescription is baffling. This important point will be revisited in the subsequent sections of this paper.

d. Balance-of-payments development

Table 2 shows the combined annual balance of payments of the five Asian crisis economies (Thailand, Korea, Indonesia, Malaysia and the Philippines). Aggregation cancels out idiosyncrasies and thus is more suitable for proving our general point.[7] During 1994-96 corresponding to stages 1 and 2 above, private capital inflows accelerated from 40.5 billion dollars in 1994 to 103.2 billion dollars in 1996. Commercial banks and nonbanks were mainly responsible for the large inflows although equity investment also increased. Consolidated current-account deficits were also on the rise, from 24.6 billion dollars in 1994 to 54.6 billion dollars in 1996, but they were smaller than the private capital inflows. As a result of stronger inflows and upward pressure on the domestic currencies, international reserves were built up at an increasing speed.

But the tide turned in mid 1997 (stage 3). Annual data are too crude to closely trace the unfolding process of the crisis, and at any rate currency collapses were not simultaneous across the five economies. Nonetheless, from 1996 to 1997, private capital flows plummeted from 103.2 to minus 1.1, or by 104.3 billion dollars. This violent reversal amounted to 9.2 percent of their combined GDP.[8] It was financed in 1997 by reserve losses of 51.8 billion dollars (50 percent of total change), an increase in official inflows by 32.5 billion dollars (31 percent) and a reduction of current-account deficits by 28.3 billion dollars (27 percent)—these figures are calculated relative to 1996. The rest is accounted for by a small change in errors and omissions.

However, that is not the end of the story (stage 4). In 1998 foreign reserves were greatly increased due to international help as well as contraction of net imports. Although private capital continued to leave the region, it was almost completely offset by official inflows so that the capital account was balanced. Unfortunately, this

[7] The Institute for International Finance's capital-account data for individual countries are confidential and cannot be disclosed here, but each of the five shows the pattern of capital-account crisis described in the text and Table 1 with only minor deviations. For example, the peaking of private capital inflow into Thailand occurred in 1995 rather than 1996. In Malaysia, reserve increase was recorded in 1996 but not in 1994 or 1995. But otherwise, the sequence of aggregated events is also true for individual economies.

[8] Individually, between 1996 and 1997 the reversal in private capital flows in percentage of 1996 GDP was as follows: Korea (10.5 percent), Thailand (7.9 percent), Indonesia (5.4 percent), Malaysia (11.3 percent), Philippines (10.4 percent). However, the reversal was much larger if country-specific periods from peak to bottom are chosen: for example, Thailand (16.7 percent from 1995 to 1998) and Indonesia (13.4 percent from 1996 to 1998). These are calculated as inflow in 1998 minus that in 1995 (or 1996), in percent of 1996 GDP.

situation was achieved by an enormous "improvement" in the combined current account from a deficit of 26.3 billion dollars in 1997 to a surplus of 58.5 billion dollars in 1998, or by 84.8 billion dollars. This did not happen through export expansion supported by increased competitiveness and market access; rather, import compression which outpaced declining exports[9] was the cause. Imports were compressed initially by a sudden withdrawal of letter-of-credit facilities due to immediate impact of domestic financial crisis. Later, import contraction continued due to collapsing domestic demand.

Given the speed and magnitude of the reversal of capital flows, the real sector cannot adjust so quickly through the normal price mechanism. Evaporation of trade credits and collapsing domestic demand were the quantitative mechanisms to brutally force the needed change in the current account. This is hardly a desirable adjustment; in fact it is an entirely new and very serious problem. According to the IIF forecast, basically the same situation appears to prevail in 1999.

III. Credit Contraction

a. Old cures that kill patients suffering from new disease

The recognition of the present Asian difficulty as a capital-account crisis goes a long way to explain its severity. But unlike the 1994 Mexican crisis, the Asian crisis has been further aggravated and prolonged by the very policies that were supposed to end it. As argued above, the vital mistake was made when policy prescriptions for current-account crisis was applied to this capital-account crisis. At that point, the capital-account crisis became a full-fledged domestic financial and real economic crisis.

As capital controls were lifted without a proper monitoring or regulatory mechanism, free-wheeling overseas borrowing by domestic enterprises and financial institutions in the region ensued (assisted by equally eager lenders and investors abroad), which made them highly indebted in short-term, hard-currency denominated debt. However, their assets were largely long-term and domestic currency-denominated investments in local factories, real estate and the like (often of dubious quality). As mentioned earlier, these currency and maturity mismatches made them extremely vulnerable to external financial shocks.

Compared with other regions, high-performing Asian economies were characterized by heavy reliance on indirect finance and high debt-to-equity ratios in enterprise finance (Wade 1998a&b). As steep depreciations of the Asian currencies began in 1997, balance sheets of enterprises and financial institutions were eroded immediately. This alone was enough to seriously impair the capacity of domestic financial institutions to provide credit for production, investment and international trade. Furthermore, the bursting of bubbles and excess capacity were rapidly eroding the asset side of their balance sheets. But given such inherent credit contraction and domestic demand decline caused by the twin financial crises, the situation was made much worse by the conventional policies adopted by the governments (often nudged by the IMF and international creditors), as argued above. In a state of financial turmoil, the following measures contributed to the acceleration of financial disintermediation

[9] In developing Asia export receipt declined mainly because of lower prices even though the quantity of exports was robust.

and credit contraction (also see Wade 1998a&b, Werner 1998):

(i) fiscal and monetary tightening which lowered aggregate demand;
(ii) high interest rate policy intended to stop the falling currency, which however further aggravated domestic financial crises by damaging the capital positions of highly indebted enterprises and financial institutions;
(iii) requiring banks to achieve capital adequacy standards in the atmosphere of crisis, which prompted them to further cut back on enterprise loans;
(iv) sudden closure of bad financial institutions without protecting depositors and borrowing enterprises; and
(v) inability to stem the free fall of currencies for an extended period, which let the twin financial crises to deteriorate further through the balance-sheet effect.

With regard to point (ii) above, it is often argued that high interest rates are necessary—at least temporarily—to attract back scared domestic and foreign investors and that there is no other effective way to stop a falling currency (IMF 1999). However, as Ito (1999) and Wade (1998b) point out, there have been no convincing models or evidence to support this crucial claim. True, together with foreign exchange intervention, raising interest rates is a standard measure to defend a currency from speculative attacks. But after the attack succeeds and the currency begins to fall, would it also be an effective measure to restore confidence in an economy with heavy reliance on bank loans and high debt-to-equity ratios? If external loss of confidence is intricately linked with domestic bad debt and financial disintermediation (as in the case of Asia's crisis countries—see below), high interest rates which hurt the balance sheets further are more likely to keep potential investors away.

More generally, there are two goals to be pursued under twin financial crises, i.e., mitigating currency crisis (external) and financial crisis (internal). For this, at least two sets of policy instruments are required. For international liquidity crisis, special provision of usable funds, maintenance of exposure by foreign investors, etc. are needed. For domestic financial crisis, provision of domestic liquidity is appropriate (for more concrete proposals, see section V). Just one policy instrument—interest rates—cannot be assigned to both targets.

b. The case of Korea[10]

It should be underlined that credit contraction and associated real-sector difficulties emerged with a vengeance after foreign exchange markets began to stabilize, around early 1998. For example, an acute investor panic over Korea's international "liquidity" crisis came more or less to an end on December 24, 1997 when the IMF and G7 countries requested foreign private creditors to accept a rollover. The newly-elected president, Kim Dae Jung, also made it clear that necessary reform measures would be implemented with resolve. However, the real Korean crisis—in terms of output and employment losses—started to unfold in the spring of 1998.

In the early stage of the currency crisis, the Bank of Korea employed a high

[10] Credit contraction is also reported widely in Thailand and Indonesia. For example, in Thailand outstanding commercial bank lending declined 12.2 percent between January 1998 and January 1999. Unlike Korea, however, the authors are so far unable to collect statistical data on bank loans disaggregated by use, industry, region, etc. in these countries.

interest rate policy under the agreement with the IMF in order to quickly stabilize the exchange rate amid the country's crumbling credibility. But this policy caused some significant side effects, including severe credit crunch. The combination of high interest rates and the Bank for International Settlements capital adequacy requirement made Korean banks more reluctant than ever to extend loans.[11]

Figure 1 shows the production trends of manufacturing in Korea. A large dip in January 1998 corresponds to the initial currency crisis but the index failed to recover for many subsequent months. As for small-scale manufacturing, the downward trend continued throughout 1998. While data for credit allocation by enterprise size do not exist, given this output trend it is likely that small- and medium-sized enterprises were the main target for credit withdrawal. Amid the credit crunch, large corporations—especially the five largest chaebols—could raise funds by issuing commercial paper and corporate bonds, but smaller enterprises which had relied mainly on bank financing suffered greatly. This, together with labor-shedding at virtually all enterprises regardless of size, contributed to an unemployment rate which shot up to an historical high of 7.6 percent in July 1998 and remained high thereafter (Figure 2).

As is clear from Figure 3, severe credit contraction began in the spring of 1998. Financial institutions curtailed loans for the normal operation of enterprises (which account for the bulk of bank and nonbank loans) rather than for capital investment. This move was accompanied by a marked reduction in the loan-to-deposit ratio which continued up to October 1998 (Figure 4).

However, words of caution are in order in interpreting Figure 3. Part of the decline in bank loans for business operation in 1998 was due to redemption of overdrafts by large corporations in their effort to compress debt-equity ratios. Thus not all decline can be attributed to involuntary credit contraction imposed on small enterprises. On the other hand, bank loans for investment remained flat during 1998, but this includes new policy loans in the amount of 3.4 trillion won extended by the Korea Long Term Credit Bank (KLTCB). If this is excluded, bank loans for investment actually decreased during the year.[12]

Figure 5 shows the impact of financial disintermediation by industry from September 1997 to September 1998. The average credit contraction was 9.3 percent. Construction, trade, mining, manufacturing and household loans were most seriously hit. Within manufacturing, Figure 6 shows the distribution of impact across different industries. Similarly, Figure 7 shows its regional distribution. It should be noted that major cities located in the northwest-southeast industrial corridor, such as Pusan, Daejeon, Ulsan and Daegu, suffered severely. The situation in Seoul and its vicinity was close to the national average. By contrast, less industrialized regions were spared from the direct impact of credit contraction. It should be noted, however, that these regional differences do not necessarily translate into micro-level conditions. Depending on industry and size, even enterprises in lightly-hit areas were experiencing systemic financial difficulties.

[11] This paragraph reflects information provided by the Monetary Policy Department of the Bank of Korea.
[12] Information in this paragraph is supplied by the Monetary Policy Department of the Bank of Korea. The KLTCB, a development bank, was merged into Kookmin Bank in December 1998. Since then, it has been re-classified as a deposit money bank.

In addition to the KLTCB loans mentioned above, the Korean authorities have responded to the situation in the following ways. First, interest rates were lowered gradually in 1998 insofar as this did not conflict with maintaining stability in the foreign exchange market. Second, in an attempt to encourage banks to extend loans to small- and medium-sized enterprises, the aggregate credit ceiling was raised and lending rates were reduced. Third, the Credit Guarantee Fund was replenished through the budget. Fourth, public money was injected into banks to help raise their capital ratios. As a result of these policies, the Bank of Korea believes the worst credit crunch was over by early 1999; loans picked up in most regions during the fourth quarter of 1998 and this trend is expected to continue in 1999.[13]

c. Credit crunch controversy

Up to now, credit contraction has been a relatively neglected area of research both theoretically and empirically, and even basic questions remain unanswered.

Foremost among such questions is an empirical one: is (was) there a credit crunch in the Asian crisis-countries? Recent enterprise surveys conducted by the governments of the five Asian crisis countries in collaboration with the World Bank give us a glimpse of the problem of identification (see Waiquamdee et al. (1999) for summary; also see reports on individual countries). These surveys were conducted between November 1998 and February 1999 and covered 3,710 firms of various sizes and foreign market access in five manufacturing industries. Inadequate liquidity was reported by 37.9 percent of the respondents (see Table 3). Thailand reported the largest proportion of firms in short liquidity (56.8 percent) followed by Korea (48.2 percent) and Indonesia (34.8 percent). In addition, high interest rates were perceived to have contributed to the decline in capacity utilization by 48.9 percent of the firms, with those in the Philippines (55.5 percent), Thailand (53.7 percent) and Indonesia (51.3 percent) reporting the highest ratios.

We consider this as a rather clean prima facie evidence that credit contraction is a very serious problem. Curiously, however, from this the authors of the summary report (Waiquamdee et al. 1999) conclude that firms experiencing illiquidity "surprisingly amounted to only 37.9 percent of all firms" (p.8); "inadequate liquidity was not generally perceived to be a major problem" and "it cannot be confirmed that there was technically a credit crunch" (p.20). They cite weak domestic demand as the primary cause of the present difficulty (67.9 percent of the respondents say it is significant).

Aside from possible sampling biases noted by the conference attendees in Bangkok,[14] interpretation of the results by these authors is highly problematic. Unlike inflation or weak demand which have more general impacts, credit contraction is an uneven phenomenon. It cannot be considered minor because only a fraction of firms are affected (would an unemployment rate of 20 percent be insignificant since a majority of workers are on the payroll?). Moreover, weak domestic demand may be a (lingering) consequence of credit crunch which depresses demand through financial linkages and

[13] Based on information by the Bank of Korea as of April 7, 1999.

[14] Selection of a limited number of manufacturing industries may have missed the hardships faced by other industries such as construction, trade and services. Also, a rather late survey date means that (i) the worst was already over; (ii) only surviving firms were surveyed ("winners bias"); and (iii) policy loans significantly offset the shortage of private credit.

consumer and investor psychology. Moreover, to be useful, an indicator of credit crunch requires time dimension (as in our Figures 1-7) since some firms may have been without bank access even before the crisis; static cross-country observations are difficult to interpret or compare.

Our view (as of May 1999) is that credit contraction in the crisis countries was particularly severe in 1998, hitting different sectors of the economy differently. Among the three hardest-hit countries, Thailand and Korea are now seeing the signs of recovery in real activity and financial intermediation, but the situation in Indonesia remains very fragile. Another important question is: if a credit crunch exists, is it the cause or the result of weak demand? We would like to examine micro and sectoral data to answer this question more fully in the future, but our impression from fragmentary information is that causality from credit crunch to weak demand cannot be rejected in Korea (and indeed Japan).

d. Accidental non-performing loans

The Asian crisis has turned out to be much nastier than originally thought because the two financial crises were allowed to reinforce each other. At the heart of this vicious circle lies the problem of non-performing loans (NPLs) of domestic enterprises and financial institutions.

Apart from the well-known problems of lack of transparency and ambiguous classification of loans into different risk categories, there is a more fundamental reason why NPLs cannot be easily identified. In a crisis-ridden economy, the amount of bad debt is not a fixed sum but a moving target. It is a function of key macroeconomic variables, such as business conditions, exchange rate, interest rates, real estate and stock markets, financial disintermediation, and regional and global demand. Under normal circumstances, NPLs are concentrated in enterprises and financial institutions with weak management—and, as such, is a microeconomic problem. But in a crisis, even potentially viable firms and banks face default risks due to forces beyond their control. Inevitable, hopeless NPLs arising from micro-level mismanagement should be distinguished from accidental NPLs created by macroeconomic instability. Admittedly, this distinction is often blurred in rapidly changing circumstances; yet conceptually, recognition of these two types of NPLs is essential for designing a good crisis-response.

In the context of the Asian economies with heavy exposure to short-term bank loans and foreign-currency borrowing, accidental NPLs are created by the initial balance-sheet effect of a large depreciation or high interest rates (or both). Once permitted to develop, accidental NPLs will multiply by igniting bankruptcies, credit contraction, stoppage of account settlements and letter-of-credit opening, down-grading of credit rating, increases in interest premia, asset deflation and domestic business slump—all of which undermine confidence of overseas (and domestic) investors. This in turn causes further depreciation and an increased need to raise interest rates (if higher interest rates are incorrectly believed to prevent the currency fall) which makes NPLs even greater. The economy is trapped—and the currency falls in total disregard of purchasing power parity. How to terminate this destructive chain reaction is the key question to be addressed.

In Thailand, it is reported that NPLs were 15 percent of total outstanding loans when the baht crisis broke out in the summer of 1997. The ratio rose to 25

percent by the end of 1997 and further climbed to 30 percent in mid 1998 and to 43 percent at end 1998. Unattended, it may even reach 50 percent by mid 1999. As of February 1999, it is estimated that the required bank recapitalization would amount to 20 percent of GDP. Financial intermediation and account settlements through banks are paralyzed and the economy has regressed back to barter and cash transactions. 80 percent of enterprises are without bank access and inter-firm lending has also declined. As a result, the operation ratio of manufacturing industry has plummeted to a mere 50 percent.[15]

The situation in which half of the bank loans are bad is daunting indeed. Yet, a large part of the Thai NPLs is not the result of a sudden loss of management capability among Thai businesses between 1997 and 1999. Rather, it was caused by macroeconomic deterioration for which individual enterprise managers can hardly be blamed. Bad debt statistics and banks' recapitalization requirements are artificially inflated during an acute crisis, and they will be reduced to less intimidating (although still high) levels if proper policy measures reflecting the new nature of the crisis are implemented.

IV. Actual Policy Responses

a. The critical initial months

Circumstances surrounding the three hardest-hit countries—Thailand, Indonesia and Korea—are discussed widely (for example, see Shirai (1999)), and we have no intention to contend with that literature. But a brief review of policy sequences in the critical initial months of the crisis is nonetheless useful for evaluating the appropriateness of the conventional and other policies adopted to counter the crisis in light of the arguments presented in this paper. The following accounts are summarized from IMF (1999).

Thailand: the August 20, 1997 stand-by agreement was aimed at restoring confidence, bringing about an orderly reduction in the current-account deficit, reconstituting foreign exchange reserves, and limiting the rise in inflation to the one-off effects of the depreciation. Key elements of the policy package were financial restructuring (including closure of insolvent financial institutions), fiscal tightening, control of domestic credit, and indicative ranges for interest rates. Thailand drew 4 billion dollars (of which 1.2 billion dollars was from the IMF) upon approval of the program.

Following the program initiation, the baht continued to slide and the loss of output turned out to be greater than anticipated. At the first quarterly review in December 1997, the program was strengthened with additional fiscal measures, lower monetary and credit targets, and higher interest rates. A specific timetable for financial sector restructuring was announced.

After this, the baht bottomed out but output continued to fall. In subsequent program reviews (March, June, and September 1998), fiscal policy became more

[15] This paragraph is based on information provided by Virabongsa Ramangkura, former deputy prime minister of Thailand, at the 6th Symposium of the Institute for International Monetary Affairs, Tokyo, February 2, 1999.

expansionary, but the revisions of monetary and interest rate policies were more cautious, conditional on the movement of the exchange rate.

Indonesia: the November 5, 1997 stand-by agreement was intended to restore market confidence, bring about an orderly adjustment in the current account, limit the unavoidable decline in output growth, and contain the inflationary impact of exchange rate depreciation. The policy package included tight monetary policy, exchange rate intervention (see footnote 18), fiscal restraint, a plan to close non-viable financial institutions, and corporate sector reforms. At this time, the IMF disbursed 3 billion dollars.

Following this, the program was not implemented adequately and, with additional political instability, the Indonesian rupiah fell precipitously and capital outflows increased. A strengthened Fund program was announced on January 15, 1998 featuring tight monetary policy and acceleration of structural reforms, especially bank restructuring. However, market response was skeptical and the Indonesian economy was on the verge of a vicious circle of depreciation and inflation.

The first program review of May 4, 1998 permitted more expansionary fiscal policy to counter output decline, but strengthened other elements of the program. Monetary policy targets were tightened with sharply higher interest rates and strict control over central bank net domestic assets. Also included were an expanded set of far-reaching structural reforms (privatization and dismantling of monopolies and price controls) as well as restructuring of corporate sector obligations and rollover of short-term bank debt.

Korea: with a high level of short-term debt and only moderate international reserves, Korea began to face difficulty in rolling over its short-term foreign liabilities in October 1997. To restore market confidence, the December 4, 1997 stand-by agreement was aimed to bring about an orderly adjustment in the current account, build up foreign exchange reserves, and contain inflation through monetary and fiscal measures. In addition, the program included a range of structural reforms in the financial and corporate sectors. The Fund disbursed 5.5 billion dollars upon program approval.

Immediately after this, with usable international reserves nearly exhausted and the won in free fall, confidence was further undermined. But the acute “liquidity” crisis came to an end as an agreement was reached on December 24, 1997 with private bank creditors to maintain exposure. Voluntary rescheduling of short-term debt was agreed on January 28, 1998. The Fund also accelerated disbursements in return for faster financial reforms and higher interest rates.

Against the background of an improving exchange market situation and growing signs of a pronounced decline in economic activity, the first quarterly review of February 17, 1998 permitted a more expansionary fiscal policy but monetary policy was to remain tight as long as the exchange market situation remained fragile. Structural reform agenda were further specified and broadened.

b. Right diagnosis, wrong medicine

From these rough sketches, the distinctive characteristics of the Fund-

supported programs implemented in the Asian crisis countries can be distilled. First, the strategy was based on macroeconomic stabilization and structural adjustment, the two traditional policy pillars to cope with the current-account crisis. Second, as the main problem shifted from exchange rate depreciation to output collapse, fiscal policy was adjusted to be more expansionary but monetary and structural policies remained tight or were sometimes further strengthened. Third, the IMF (1999) understood that external confidence crisis and domestic credit contraction were the two important features of the Asian crisis, but proposed to deal with the former by high interest rates, tight budget and credit—paying much less attention to the costs incurred on the latter.

These features are in sharp contrast to our policy recommendations presented below (section V). Traditional macroeconomic stabilization coupled with fast and far-reaching structural reforms wreak havoc on economies trapped in currency and banking crises, resulting in unexpected severity and duration of the Asian crisis. The Asian crisis began just like the 1994 Mexican crisis, with overborrowing followed by a capital reversal and currency attacks. Up to this point, the two crises were similar. But after the initial shocks, the Asian crisis developed into something more serious, with continued free falls of currencies, sharp increases in bad debt, paralysis of financial systems, collapsing demand, shrinking output and employment, and regional and global contagion. This suggests that new policy prescriptions are badly needed because of the particular characteristics of the Asian-type crisis.[16]

The IMF seems to recognize the double nature of the present financial crisis, but has nonetheless insisted on coping with the this type of crisis with traditional "current-account crisis" medicine and justifies it even to this date (IMF 1999). The gap between diagnosis and prescription remains inexplicable.[17]

V. Managing Capital-account Crisis and Credit Contraction

a. Basic principles

As mentioned earlier, policies required to combat the capital-account crisis are quite different from the traditional ones. Moreover, to cope with the twin financial crises, the timing and sequencing of policy measures is critically important. Unlike the traditional current-account crisis for which policy responses (macroeconomic belt-tightening and supply-side "structural adjustments") are straightforward and basically time-invariant, the crisis we are discussing is much more complex. Right policies

[16] It is also necessary to examine in detail the validity of key supporting claims of the current approach such as: (i) high interest rates caused the eventual stabilization of exchange markets; (ii) merits of high interest rates in calming exchange markets outweigh demerits they bring in worsening domestic crisis; (iii) fiscal policy was not too tight (cyclical factors must be purged in evaluating the size of the budget deficit); and (iv) fiscal surpluses were needed to prepare for bank recapitalization. Some of these issues were discussed in the text, but full studies are beyond the scope of this paper.

[17] The IMF correctly emphasizes the need "to help break a self-reinforcing cycle of capital outflows, exchange rate depreciation, and financial sector weakness" (IMF 1999, p.15). However, it continues immediately: "But more than in previous Fund programs, structural reforms, particularly in the financial sector and related areas, took a central role—indeed, it was structural reforms that were needed to address the root causes of the crises, restore market confidence, and set the stage for a sustainable resumption of growth." This argument is superficial and unconvincing; in particular, it does not address the delicate problem of timing and sequencing which is so crucial in financial rescue and restructuring (section V).

implemented in the wrong sequence can kill the patient instead of curing him.

Most importantly, currency or international liquidity crisis should be prevented from getting worse. In addition, domestic banking crisis and credit contraction should be stopped and reversed. These should be the top policy priorities of economies beset with twin financial crises. In the following subsections, we propose nine measures to calm the markets and restore confidence in the atmosphere of currency and banking crises.

Reflecting the double nature of the crisis, policy prescriptions are divided into two broad categories: those coping with external problems—falling currencies, international liquidity crisis, contagion, regional coordination, etc.—on the one hand and those addressing domestic problems—macroeconomic policies, systemic financial crisis, credit contraction, structural reforms of banks and financial markets, etc.—on the other. In the past, financial crises have typically been managed by national governments and central banks. But the financial crises in developing Asia are not contained within national borders nor can they be stopped by the efforts of individual countries alone. Thus involvement of both the international community and the affected countries is needed. By combining the following measures on a case-by-case basis (not all need to be implemented depending on the severity of the situation), immediate financial difficulties, both external and internal, should be greatly ameliorated. Needless to say, once chosen, measures should be implemented as rapidly as practically possible.

b. International policy prescriptions: how outsiders can help

Donor countries and regional and international financial institutions can implement the following policies.

(i) Emergency financing: most importantly, timely provision of ample financial resources, with few strings attached, is essential to containing the international liquidity crisis in its early stage (surely, policies for restructuring bad banks and strengthening financial markets must be implemented later, but not at this point—see below). It cannot be emphasized too much that an impressive sum committed up-front makes an enormous difference to market psychology, which in turn thwarts the crisis and minimizes the amount that needs to be actually withdrawn. Financial aid can take the forms of bilateral and multilateral loans for balance-of-payments purposes, accelerated disbursements of existing commitments, rescheduling, loan guarantees, export insurance, new trade credits, additional funds for structural reforms and social safety nets, and so on. All of these are already in place in Asia, but improvements are possible in terms of size, speed and scope.

In this connection, it should be recalled that the Mexican currency crisis of December 20, 1994 was followed by a credible international rescue package of 50 billion dollars by January 31, 1995. In that crisis “the response was swift, large, and practically unconditional,” unlike the Asian programs which “were not large and heavily conditional” (Montes 1998). Moreover, in Asia, actual disbursements which came in phased tranches were much smaller than apparent pledges. In late 1997, the idea of the Asian Monetary Fund was immediately turned down—partly for fear of possible inconsistency between two sets of conditionalities required by the IMF and the proposed AMF. Agreeing to a long conditionality list was made a prerequisite for the

Asian programs, but in the Mexican crisis the government's full reform program was announced only in March 1995, a few months after the panic and contagion subsided. Had similarly prompt and generous treatment been offered to Thailand and other Asian countries, it is likely that the crisis could have been much milder and shorter in duration.

(ii) Compulsory rollover of short-term foreign private debt: foreign creditors wanting to pull out from the countries affected by a systemic crisis should be told collectively to wait and maintain exposure. In the process variously called as "rollover," "standstill," "bailing-in," or "moratorium," short-term debt can be converted to equity or longer-term debt. This operation is essential to stop an unnecessary run on the country, prevent free riders among foreign investors, and allocate the costs fairly and orderly. Korea's "liquidity" crisis was ended successfully in December 1997 by such an agreement, but it would have been even better if it had come a few to several weeks sooner. Clearly, individual countries in crisis cannot make private creditors line up neatly. An international body such as the G7 or IMF should set up a formal mechanism with appropriate rules, monitoring, enforcement, etc. available to all eligible countries without delay (as the Paris Club successfully reschedules long-term public debt according to a predetermined procedure). To the extent that this forced rollover on private debt is effective, the amount of official money required in (i) above, and the need to support exchange rates in (iii) below, will be accordingly reduced.

(iii) Correcting excessive undervaluation: each country can defend its currency by market intervention or high interest rates. But once the attack succeeds and contagion begins to spread regionally, stronger collective measures are needed to restore systemic currency stability. Specifically, a statement by the G7 or IMF to the effect that depreciations are excessive, presentation of realistic and mutually consistent exchange rate targets, exchange stabilization funds, credit-line agreements among central banks, and so on, can be used. Furthermore, the G7 and regional countries can participate in coordinated market interventions to directly push up the undervalued currencies. Since foreign exchange markets of developing countries are thin, a relatively small amount can have a large impact if the intervention is well orchestrated.[18] As noted earlier, raising interest rates is an inappropriate way to cope with a currency crisis accompanied by balance-sheet erosion and credit contraction. Excessive undervaluations must be corrected by other means in this type of crisis (also see footnote 20 below).

(iv) Coordinated demand expansion: if only one country experiences a depreciation, that country can count on rising exports thanks to improved price competitiveness. However, in a regional currency crisis, it is more difficult to export your way out of recession since your competitors also gained competitiveness while regional demand is depressed. Further competitive devaluations will only lead to shrinkage of total trade. A better alternative is for each country to expand domestic demand in the early stages of the crisis with positive spillover effects on its neighbors. A regional or international body can provide necessary coordination of fiscal and monetary policies. However, in countries where expansionary policies have already

[18] Actually, there was a partially successful joint intervention by Japan, Singapore and Indonesia in support of the Indonesian rupiah in November 1997 (Ito 1999). But from the viewpoint of systemic currency crisis, this intervention was too small, temporary and ad hoc, and targeting only one currency. To maximize the favorable signal effect of joint intervention, careful preparation, timely execution, and appropriate supporting statements are needed.

been mobilized to the limit and additional stimuli are considered ineffective or unsustainable, this policy option is closed.[19] Good judgment should be used to distinguish countries with different macroeconomic constraints.

c. Domestic policy prescriptions: what the government should do

As to the government of a crisis country, the following measures are proposed.

(v) No need for tighter monetary policy and fiscal consolidation: this is because of the inherent weakness of domestic demand under the capital-account crisis. "Cyclical" fiscal deficits should be allowed while monetary policy can remain just neutral (unless the situation worsens and rule (vi) below is triggered).

(vi) Unlimited and unconditional provision of domestic liquidity: this is the well-known "lender of last resort" function of the central bank, which is absolutely essential to calm domestic financial institutions and markets seized by runs, illiquidity or prohibitive risk premia. During the critical few days or weeks of such financial panic, the monetary authority should concentrate on this task while temporarily suspending monetary policy targets designed for normal times. If this is not done, the crisis will spread irreversibly.[20]

(vii) Compulsory bank recapitalization: in twin financial crises with accidental NPLs, banks' capital needs to be replenished so that they can resume normal lending. Banks should be classified into those which are sound, those requiring official help to return to viability, and those which are definitely insolvent. Recapitalization should be directed towards the second type, but obviously not the first or third. Once procedure and criteria are set up, recapitalization must be compulsory and linked with subsequent restructuring (see below). Otherwise the dithering of bank managers will delay the rescue process and spread the crisis. Distinguishing three types of banks is difficult and somewhat arbitrary in a crisis situation, but it must be done as pragmatically as possible based on the most recent balance sheets.[21] If essential information is missing, the government should directly audit the books. International assistance may be solicited for this effort.

(viii) Temporary suspension of capital adequacy standards: requiring international capital adequacy standards may be a good idea in normal times, but it brings disaster at a time of credit contraction. Systemic bank failure should be dealt with very differently from isolated bank failure. In credit contraction, banks are

[19] For instance, by early 1999, Japan seems to have come to the end of the line as far as aggregate demand policies are concerned. Large and repeated fiscal stimuli in much of the 1990s did not produce robust economic recovery and a further issuance of government bonds now threatens to raise long-term interest rates and appreciate the yen, both of which hurt the domestic economy. Monetary policies are also impotent as the entire term structure of interest rates is suppressed to the near-zero level in a situation analogous to the liquidity trap (McKinnon and Ohno 1997).

[20] Walter Bagehot, the 19th century British political economist, advised the government of the day to supply liquidity unlimitedly against a domestic financial crisis and to raise interest rates against an external one. But the Bagehot rule cannot be applied if the two crises occur simultaneously, as in Asia. Our proposal is to adopt the first part of his advice but introduce measures other than high interest rates ((i) to (iv) above) to cope with the external crisis.

[21] Banks should not be classified according to future balance sheets. If such a policy is adopted, bank managers have an incentive to reduce lending (denominator) in order to maintain the required capital adequacy ratio, aggravating the credit contraction (Yoshitomi 1998).

constrained by capital ratios rather than the usual reserve ratios as the textbook has it. In a fallacy of composition, tightening these standards in crisis may result in lower bank capital ratios, not higher. As Stiglitz explains,

> If capital adequacy standards are rigidly enforced so that when a crisis hits countries are at their limit, then as defaults rise and bank net worth declines, either new capital sources have to be found or lending must decrease. But the midst of crisis is hardly an ideal time for raising new capital, and as a result, lending typically contracts. This naturally further weakens the economy, leading to more bankruptcies, and lower net worth, and perhaps an even greater shortfall in capital adequacy. (Stiglitz 1999, p.7)

A temporary easing or even suspension of capital adequacy standards is called for until such time when these requirements can be enforced without causing unintended macroeconomic distress.

(ix) Providing credit through non-market channels: financial mobilization should shift from government to market in the long run, but non-market measures should be actively used to speed up recovery when the market itself is paralyzed. Lending by public policy banks, such as development and long-term credit banks and financial institutions for small- and medium-sized enterprises, should obviously be boosted, and additional credit schemes and institutions can be established if necessary. Administrative guidance to encourage bank lending can be activated. New credit lines or guarantees may be extended with international assistance. In this regard, measures introduced by the Korean authorities in 1998, including new loans by the KLTCB, in section III above should be recalled.

d. Restructuring phase

This paper does not intend to present an operational guideline for restructuring banks: a subject too important to be treated except in another full paper or a book (one of the present authors plans to visit this issue in the future). Here, it suffices to emphasize the importance of distinguishing the two phases, namely bank rescue and bank restructuring, and a few issues associated with the latter process.

If a proper combination of the above measures are taken, queues outside banks will disappear, domestic bank loans will recover, and the country can rejoin international financial markets without prohibitive risk premia—in short, the panic would be over. The next important step is to streamline, merge or close bad financial institutions with vigor and determination. If this is not done, problems are simply postponed, and an even larger crisis is likely to occur in the future.

But to re-emphasize, only when the twin financial crises are overcome, it is safe to move resolutely to the merger and closure of bad financial institutions (preparation and announcements can be made in advance, but not actual implementation). If strong restructuring measures (which are desirable in the long run) are taken in the middle of credit contraction, it will make the restructuring even harder as accidental NPLs accumulate. The key is to move quickly from the rescue phase to the restructuring phase by careful choice of policies so as not to derail the recovery process.

Four additional points deserve mention. First, until normalcy returns in the financial markets, necessary measures must be implemented on a compulsory, rather than a voluntary, basis. If left to their own judgment, managers of bad banks will take a wait-and-see attitude hoping that the macroeconomy will improve or they will otherwise be bailed out; but they fear that accepting official assistance early will later lead to their having to take responsibility and resign. Such delay tactics can forestall the entire rescue and restructuring process.

Second, when a bank is rescued or restructured, negligent or fraudulent bank managers should be held accountable, but depositors and borrowing enterprises in good standing should always be duly protected. This distinction is crucial. If bank closure is ordered hastily without regard to the integrity of deposits or continued availability of loans to healthy firms, it will fan credit contraction. Similarly, the government should unambiguously announce that taxpayers' money will be used—if it is to be used—to protect depositors and borrowing enterprises only, not the managers or owners of failed banks. Through merger or transfer to another sound bank or a special institution, loans in good standing should be protected, while NPLs are rescheduled, liquidated, collected or written off.

Third, in parliamentary democracies, political pressure from the public, media and opposition parties are often very strong. Typically, they oppose the use of public money to "bail out" large banks and enterprises, and require disclosure of all available information on NPLs (but, as argued above, the amount of NPLs depends on macroeconomic conditions). These may be politically legitimate demands, but from the viewpoint of avoiding financial meltdown, they tend to cause unnecessary delays and uncertainty. In this political context, it is important to clearly differentiate between, and concentrate upon, the more defensible bailing out of the system as a whole, rather than bailing out management and shareholders of insolvent and weak financial institutions.

Fourth, enforcement may be a legitimate problem since "money first, reform later" implied in the proposed sequence is the reverse of the procedure required by the IMF-supported program. Bank managers may simply grab the money and run. In order to minimize this risk, we have emphasized that financial rescue and restructuring should be an integrated process and conducted on a compulsory basis. An international financial institution can and should develop an operational procedure for linking bank rescue and restructuring, which is made available to all eligible member countries.

VI. Concluding Remarks

This paper has argued that the severity and duration of the Asian crisis can be explained by viewing it as a capital-account crisis combined with internal credit contraction. Due to high interest rates, reduced demand, capital adequacy requirements and premature bank closures, the crisis economies were trapped in a vicious circle with serious credit contraction, collapsing output and mounting bad debt, from which they are only slowly recovering. Given the new nature of the crisis, inadequacy of the initial policy responses may be partially forgiven, but the same mistake should not be repeated in the future. In particular, the international community should not impose policy conditionalities designed for the traditional

current-account crisis in these new circumstances. Instead, a new set of properly sequenced measures, proposed in section V above, should be considered and introduced.

It is hoped that the proposals contained in this paper will be a useful input to the redesign of global financial architecture under discussion today. In particular, they should help improve policy responses once systemic currency crises occur. But clearly, global financial architecture needs to include many other new and improved aspects (some of which are being studied by our Institute). They include, for example, international monetary system and exchange rate policies of individual countries, capital controls and monitoring, currency-crisis early warning system, modus operandi of capital-account liberalization, data transparency and dissemination, corporate governance, bank supervision and prudential regulation, accounting standards, macroeconomic policies to deflate unsustainable lending booms, and the general question of how to reconcile "global" or market standards with unique local or regional practices. Improvements in these areas—of which nuanced crisis response is an integral part—must proceed in tandem in order to minimize the size and frequency of the new financial crises that have become all too common in this decade.

Appendix

First- and Second-Generation Models of Currency Crisis

To explain why currency attacks occur, there have been two sequential lines of research in the last two decades. This appendix summarizes them in their simplest forms based on the review by Flood and Marion (1998).

First-generation models attribute currency crisis to economic fundamentals which evolve inconsistently with the commitment of a fixed exchange rate (Krugman 1979, Flood and Garber 1984). Specifically, excessive monetary expansion will lead inevitably to a breakdown of the fixed parity. With wrong fundamentals, occurrence of a currency attack is certain. In this type of model, the only analytically interesting question is when the attack will happen.

Let money market equilibrium be

(A1) $m - p = -á(i), \quad á > 0$

where m is the domestic supply of high-powered money, p is the domestic price level (both in logs), and i is the domestic interest rate. In the central bank's balance sheet, high-powered money is backed by domestic credit (d) and international reserves (r):[22]

(A2) $m = d + r$

The price level is determined by purchasing power parity:

(A3) $p = p^* + s$

where, in logs, p* is the foreign price level and s is the exchange rate (domestic currency/foreign currency). The interest rate is governed by uncovered interest parity:

(A4) $i = i^* + s$

where i* is the foreign interest rate and the dot signifies actual and expected change. For simplicity, let us assume that p* and i* are constant.

During the pre-crisis fixed-rate period (when s = 0), p and i are externally given via (A3) and (A4). Thus m is also given by (A1). Suppose domestic credit, d, grows at the rate of ì (say, due to deficit financing). With a fixed m, (A2) will determine the composition of high-powered money: as d increases, r will fall by the same amount. If the situation continues, the country will eventually run out of international reserves. But when?

Let us define the shadow exchange rate as the hypothetical floating rate s that would prevail if a currency attack occurs at that time—the rate that equilibrates the money market after international reserves are exhausted by an attack. From (A1),

[22] For simplicity, m, d and r are expressed in logs. Equation (A2) can be considered as a log-linearized version of the original identity.

we have d – s = –á(s). Thus, the shadow exchange rate is:

(A5) $s = \acute{a}\grave{i} + d$

As domestic credit expands, the shadow exchange rate depreciates (rises). If the actual fixed rate s is above the shadow rate, an attack will not occur because that would lead to the appreciation of the domestic currency imposing losses on speculators. In contrast, it is profitable to attack if the shadow rate is above the actual. Competition among speculators ensures that the attack—which is foreseen—will occur exactly when the two exchange rates coincide, at point A in Figure A1. At that time, high-powered money drops by the amount of the attack and the interest rate jumps upward. Subsequently, the exchange rate will depreciate at the same rate as the expansion of domestic credit.

Second-generation models differ from the first in that they can explain currency attacks even without an obvious worsening of economic fundamentals. Technically, this can be shown by introducing nonlinearity in government behavior. There are many ways to achieve this, for example, (i) by assuming different growth rates of domestic credit before and after an attack; or (ii) when government faces a trade-off between the fixed exchange rate policy and other policy goals—such as concerns for unemployment, NPLs, public debt burden or upcoming elections. Assumptions of policy nonlinearity generally lead to multiple equilibria—both attack and no-attack solutions are possible—and the attendant phenomena of self-fulfilling speculation, information cascades, herd behavior and the like.

As one of such models, consider Obstfeld (1994) as simplified by Flood and Marion (1998). The government's optimizing behavior is described as:

(A6) $\min L = \ddot{a}^2 / 2 + (\ddot{a} - E\ddot{a} - u - k)^2 / 2$

where L is the social loss function, ä is the rate of currency depreciation, Eä is the expected rate of currency depreciation, u is a disturbance with zero-mean and variance$\acute{o}^2$, and k is a measure of distortion. Two modes of policymaking—a rule or discretion—are available. The rule requires the government to set policy regardless of the current shock (u) while discretion allows the government to respond to the current state including u and Eä. This formulation presents the problem of time inconsistent policymaking; the government is tempted each period to exploit predetermined private expectations to expand the economy and overcome the distortion. Meanwhile, the private sector understands the nature of the temptation that the government faces.

If the government adopts a rule, namely, fixed exchange rate policy withä = 0, we have Eä= 0 so that the expected value of the loss function is computed to be:

(A7) $EL^R = (\acute{o}^2 + k^2) / 2$

On the other hand, if the government follows discretion, the private sector knows this policy and forms $E\ddot{a}^D = k$, then the expected value of the loss function is:

(A8) $EL^D = \acute{o}^2 / 4 + k^2$

If there is no shock hitting the economy ($\acute{o}^2 = 0$), the rule is clearly superior because

$EL^R < EL^D$. But in the presence of shocks, the two policies cannot be ranked so easily. Suppose the government pursues a mixed strategy with an escape clause: it follows the rule (fixed exchange rate policy) most of the time but switches to discretion (devaluation) when the shock is sufficiently large.

The policymaker's problem is to decide the size of disturbance u that triggers the escape clause. That threshold value is u where u satisfies:

(A9) $L^R(u) = L^D(u) + C$

where C is the cost of policy switch (say, the loss of credibility or capital gain forgone by the monetary authority). This equation is nonlinear partly because of the nature of expectation formation as a probability-weighted average of no change and devaluation, and its solution depends on the shape of the shock distribution.

As an example, Figure A2 depicts one possible situation following Obstfeld's parameterization with uniform shock distribution. The curved line plots a function of $L^R - L^D$ and the horizontal line represents a function of C. The two lines intersect twice. If the private sector adopts u_H as its belief about the level of disturbance at which the government will abandon fixed exchange rate policy, then the government finds that accepting this value also solves the government's optimization problem. By contrast, if the private sector adopts u_L, it is optimal for the government to accept this value instead. Thus there are two possible solutions: the one in which the fixed exchange rate is defended against most shocks and the other in which it is abandoned when even a small shock hits and therefore currency attacks are more frequent.

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