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How to Prevent Another Crisis Country Report: Thailand*

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A. CORE CAUSES OF THE 1997 CRISIS

At the beginning of the 1990s, it was envisioned that the Thai financial market would be better off if liberalization was pursued. Thailand's acceptance of the International Monetary Fund's (IMF) Article VIII in May 1990, which lifted foreign exchange controls on current account transactions, marked the beginning of a series of financial liberalization measures. On the exchange control front, a second round of liberalization abandoned most restrictions on capital account transactions in April 1991. The third round, in February 1994, gave more freedom to outward direct investment, travel expenditures, and additional channels of cross-border payments. In March 1993 the Bangkok International Banking Facilities (BIBF) were established to serve as a means to develop an international financial center. To enable BIBF to compete with other centers, BIBF transactions were granted some tax privileges (e.g., reduction of corporate income tax, exemption from special business tax and withholding tax on interest income). Furthermore, the government in January 1995 decided to allow BIBF to open up branches in upcountry provinces.

On the interest rate front, the authorities gradually removed interest rate ceilings in order to encourage savings mobilization and to make the financial system more dynamic. Interest rate ceilings on long-term time deposits were abolished in June 1989, on short-term time deposits in March 1990, on savings deposits in January 1992, and on loan rates in June 1992. In addition, the Bank of Thailand (central bank) in 1992-93 gave commercial banks more flexibility by loosening the requirement of government bond holding as a prerequisite for opening up new branches. The obligations of commercial banks to extend credits to rural borrowers or those in the vicinity were also relaxed to cover more related occupations and wider geographical areas. Furthermore, the definition of "liquid reserves" was broadened to include Bank of Thailand and state enterprise bonds, as well as debt instruments issued by financial institutions or government agencies approved by the central bank.

Commercial banks were permitted to undertake new businesses, such as debt underwriting and dealing, acting as securities registrars and custodians, selling public sector debt instruments, mutual fund management, financial consulting, and feasibility studies. Finance and securities companies were on the same footing. Their new lines of operations included leasing, management of provident/private/mutual funds, custodial services, and foreign exchange businesses.

Meanwhile, a number of new frameworks and organizations were formulated. For example, the Securities and Exchange Act was passed in May 1992, giving qualified limited companies access to direct financing through issuance of common stocks and debt instruments. The Act established the Securities and Exchange Commission (SEC) as an independent agency responsible for supervising capital market activities related to equities, bonds, and derivatives. In 1993 the government spearheaded the formation of a credit rating agency, Thai Rating and Information Services (TRIS), and in 1994 private parties organized a bond dealers' club to function as a secondary debt market, adding more liquidity to debt instruments. Regarding the payment systems, the central bank improved clearing and settlement, which helped lower transaction costs and facilitate business expansion. The BAHTNET and THAICLEAR networks were put into effect to better serve customers' needs. The latest development on this front was the introduction of electronic retail fund transfers through Media Clearing.

This series of financial liberalization measures was undertaken between 1988 and 1996 with the following purposes: to strengthen competition in the domestic financial system, to give more resilience to financial institutions as preparation for the worldwide liberalization of trade and services, and to expand the role of Thailand to serve as a regional financial center.

The measures caused a flood of external capital into the Thai market from 1990 to 1996, fueling investment spending, speculation, and current account deficits. Net capital inflows between 1990 and 1996 averaged 10 percent of GDP each year, thus expanding the outstanding external debt from US$29 billion in 1990 to US$91 billion in 1996, or from 34 percent of GDP to 51 percent of GDP, respectively. These colossal foreign capital inflows, which spurred import spending, coincided with an export downturn in 1996, resulting in surging current account deficits in 1995-96 (8 percent of GDP). Meanwhile, domestic financial institutions were pressured by strong competition to extend excessive and imprudent credits, engendering high risk and deteriorating asset quality. Distressed by possible financial panic or bank runs, the central bank extended financial aid to ailing commercial banks and finance companies. This aggravated the macroeconomic imbalance. In addition to threatening current account deficits, Thailand's excess inflation in comparison

to the United States' surged from 0.3 percent in 1993 to 3.0 percent in 1995-96. As a result, by mid-1997 investor confidence was critically shaken. Massive capital outflows, arising from fears of a devaluation of the baht plus widespread bankruptcies, necessitated the floating of the baht in the middle of 1997, which triggered a series of financial crises region-wide.

Thailand's economic meltdown in mid-1997 can largely be attributed to three policy errors:

- Liberalization of foreign capital flows while keeping the exchange rate rigid
- Premature liberalization of financial institutions
- Failure to prudently supervise financial institutions.

These errors clearly demonstrate the importance of policy consistency. Should foreign exchange funds be allowed to move freely across borders, their prices or exchange rates ought to be liberalized as well so as to reflect market conditions. Otherwise, an excess of inflows or outflows can easily materialize, depending upon market sentiment and expectations. The liberalization of financial institutions is an equally controversial issue. Given that domestic financial institutions are not adequately prepared or experienced, the question is whether they should be liberalized, since liberalization can easily bring about more risks. But once these immature entities are granted more freedom, there is no doubt that the central authorities should closely monitor and carefully supervise them throughout the liberalization process, especially during the initial adjustment period.

B. CHARACTERISTICS OF CURRENT CAPITAL INFLOWS

For three reasons, the majority of capital inflows in 1990-96 went to the private sector. First, the Thai government had nine consecutive years of surplus (1988-96) on its cash balance. Second, private business entities were more responsive to financial liberalization measures than public agencies. Third, the Thai monetary authorities established the BIBF in 1993 and provided several tax privileges to BIBF, as follows.

Tax privileges of BIBF

	(Percent)	
	Normal	BIBF
1. Corporate income tax	30	10
2. Specific business tax	3.3	0
3. Interest income withholding tax	10	0
4. Stamp duties	2	0

While the BIBF was meant to broaden the Thai financial market to allow it to serve as a regional financial center, it turned out that most capital flows via BIBF were out-in transactions largely induced by interest rate differentials. These reasons explain why private external debts accounted for an increasing portion of the country's total debt outstanding, rising from 61 percent in 1990 to 81 percent in 1996. Such predominance compressed the external debt profile (short-term debts surging from 15 percent in 1987 to 50 percent in 1995), thus raising the degree of volatility as well as vulnerability. In addition, most BIBF credits were of short-term maturities, thus increasing the degree of volatility. Two other types of private capital inflows were equally volatile—inflows via commercial banks and non-resident baht accounts.

The volatility is particularly noticeable in the case of non-foreign direct investment (FDI) capital flows as demonstrated in Table 1. During the period 1990-98, net inflows of FDI stayed within the range of 1.1-3.3 percent of GDP. Non-FDI net inflows, in contrast, moved from 12.6 percent of GDP in 1995 to –14.9 percent of GDP in 1997. In other words, almost all volatility of private net capital inflows was due to non-FDI categories.

C. IMPORTANCE AND REPERCUSSIONS OF CONFIDENCE

The dominance of private sector and short-term maturities means that though foreign capital generates some benefits (e.g., supplementing domestic savings, lowering operating costs, upgrading technology and marketing strategies, stimulating competition), it also brings about some negative effects (e.g., excessive speculation, loss of recipient country's policy autonomy). In this context, what matters most is the degree of confidence that creditors have in debtor countries, as deterioration of confidence can easily lead to abrupt and massive fund retrievals, generating a strong adverse liquidity impact on both the public and private sectors. Chart 1 demonstrates that confidence magnifies the amplitude of economic cycles on both internal and external balances. On the external front, an economic boom in an emerging economy, together with financial liberalization, often occurs with a substantial increase in import spending and current account deficits. Meanwhile, impressive economic growth raises confidence and therefore attracts capital inflows that enlarge both reserves and current account deficits. As long as the point of saturation is not reached, higher

reserves and economic prosperity will attract more capital inflows, which add momentum to the expansion cycle. However, when current account deficits climb to a hazardous level, the resultant threat induces capital outflows, especially when the exchange rate is not adjusted.

On the internal front, when the economy starts to flourish, stronger confidence brings in capital inflows, which means more competition in credit extension. Before saturation, credit expansion facilitates more economic growth, more confidence, and more capital inflows. Nevertheless, when credit is excessively and imprudently extended, non-performing loans and inflation will rise and weaken both financial stability and confidence. Consequently, foreign creditors will be tempted to withdraw their funds, which aggravates the economic downturn.

The above-mentioned pro-cyclical impact that confidence has on economic or business cycles occurred in the Thai economy. In the first half of the 1990s, the economic upturn boosted confidence and attracted capital inflows to such an extent that economic growth accelerated to 8.5 percent per annum. But when export growth came to a standstill, looming current account deficits and the rigid exchange rate of the baht led to widespread speculation on currency devaluation, resulting in enormous capital outflows. In this environment, the floating the baht was unavoidable.

D. DETERMINANTS OF CONFIDENCE AND CAPITAL FLOWS

Given the significance of confidence in international capital transactions, it is worth investigating which factors are meaningful determinants of creditors' confidence. According to a recent survey, interest rates do not have much bearing on investor confidence. Rather, the following seven factors, listed in order of priority, have a strong influence on investor confidence.

- Political stability
- Competence of the economic management team
- External accounts, including trade balance, current account, and balance of payments
- Efficiency and stability of the financial system
- Foreign exchange reserves
- Asset quality of financial institutions
- Policy consistency or rigidity

While there are several forms of capital inflows (e.g., FDI, portfolio investment, loans, non-resident baht accounts), various factors affect these inflows (e.g., economic growth potential, stock market returns, interest rate differentials, exchange rate volatility, and macroeconomic stability). These factors influence capital inflows either directly (e.g., interest rate on loans) or indirectly (e.g., affecting investor confidence in the recipient economy). Though there are numerous theoretical assertions about how each factor affects each type of capital inflow, there is little empirical work verifying such assertions or measuring the degree of importance of each factor. The TDRI in 1998 thus adopted an econometric method to investigate determinants of capital inflows as well as their degrees of significance. This investigation has two objectives: (a) to test statistically the influences of each factor on different kinds of capital inflows, (b) to pinpoint the different degrees of those influences.

The degree of influence is measured by standardized coefficients obtained from OLS (ordinary least square) estimated equations, which link each type of capital inflows to possibly pertinent explanatory variables. The estimation utilizes monthly data from January 1988 to June 1998. The tested explanatory variables are:

- Interest rate differentials
- Returns from the Stock Exchange of Thailand (SET)
- Volatility of baht exchange rates against the U.S. dollar, yen, Singapore dollar
- Forward cover or swap premium
- Indicators of macroeconomic stability, e.g., current account deficits, inflation differentials, foreign exchange reserves/imports ratio
- Indicators of economic activity, e.g., private sector's electricity consumption, manufacturing production index.

In addition, some dummies were included to reflect the crucial impact of economic or political changes, e.g.,

government turnover, shifts in the exchange rate system, and variations of the country's credibility as evaluated by credit rating agencies. The results of this econometric investigation, as shown in Tables 2-5, are close to expectations for each type of capital inflow. The following points deserve attention.

FDI (Table 2) Export performance is the most significant explanatory variable, demonstrating the long-term relationship and the Board of Investment's role. The current account deficit, or the second rank, is probably there because it correlates with foreign investors' confidence. As for the exchange rates, the volatility of the baht against the yen has a stronger impact than those of other currencies. This could be due in part to the fact that Japan accounts for 38 percent of all foreign direct investment, or more than any other country.

Portfolio investment (Table 3) Economic fundamental factors (e.g., manufacturing production index, stock exchange index) are as important as technical factors (e.g., baht per U.S. dollar volatility, forward cover, and interest rate differentials). In contrast, the adequacy of foreign exchange reserves (in terms of import expenses) does not have much meaning for foreigners in the stock market, similarly with direct investment.

Loans (Table 4) Interest rate differentials and exchange risks are primary determinants of loan inflows. But it is notable that the latter commands more weight than the former. In other words, in negotiating cross-border credits, lenders and borrowers gave more attention to exchange rate stability than to differences of interest rates. This outcome is particularly consistent with the situation in 1997-98. The exorbitant interest rates of the baht could not attract much capital inflow because the value of the baht was under heavy pressure. And when the baht became stable, even though Thai interest rates had been cut by more than half, there were more capital inflows than during the crisis.

Non-resident baht account (Table 5) It is not surprising that deposit rate differentials, forward cover or swap rate, and the stock market index represent important determinants as to whether or not foreign investors will shift their funds to invest in Thailand. But the following three points are noticeable.

- The foreign exchange reserves to imports ratio, which in a way signifies investor confidence as to how much the debtor country can satisfy its external debt obligations, receives the heaviest weight from foreign investors, and more than that of interest rate differentials. This corresponds with the fact that these non-resident baht deposits (the amounts of which exceeded those of other types of capital inflows) tended to have short maturities and easily fluctuated depending on whether there was any news affecting investor confidence or not.

- Interest rate differentials are more important than the stock market index.

- The deposit rate differential which is statistically significant is the one between that of the baht and the Singapore dollar, not the U.S. dollar or yen. Furthermore, the baht volatility that is statistically important is the baht versus the Singapore dollar, not the U.S. dollar or yen. This corresponds to the fact that most (roughly 60 percent) of all non-resident baht deposits came from Singapore.

Foreign investors' confidence represents a crucial determinant of capital inflows to Thailand. This is immediately evident from the weight of the current account deficit in the case of FDI (Table 2), growth performance in the case of portfolio investment (Table 3), reserves to imports ratio in both cases of loans (Table 4) and non-resident baht accounts (Table 5).

Inflation differences between Thailand and abroad are not statistically significant. This may be because Thailand has in the past been successful in maintaining price stability, so it is not an issue that affects foreign investors' confidence.

E. EXPERIENCES WITH CAPITAL CONTROLS

Brazil Plagued by persistent and high inflation in the early 1990s, Brazil pegged its currency to the U.S. dollar, tightened monetary policy, and raised taxes. However, large interest rate differentials together with exchange rate stability accelerated capital inflows, so in mid-1993 the government began to introduce numerous measures to reduce capital inflows. For example, the tax on Brazilian bonds issued abroad was raised from 3 to 7 percent. A portfolio tax of 1 percent was imposed on foreign investment in the Brazilian stock market, while foreigners investing in fixed-income instruments were subject to a 5 instead of a 9 percent tax. Subsequent control measures were aimed at changing the composition of capital inflows from short-term to long-term. For instance, the authorities adopted differentiated tax rates inversely related to the maturities of loans, the minimum maturities were lengthened to three years, and an entrance tax was imposed on investments in privatization funds.

Nevertheless, the well-developed financial markets, as well as derivatives instruments, rendered these measures ineffective in changing the maturities and the composition of flows. And massive capital inflows continued to pour into the Brazilian economy, to such as an extent that the authorities had to intervene and absorb excess liquidity by issuing securities. While the sterilization operations considerably raised domestic interest rates (from 7.1 percent in 1993 to 21.1 percent in 1994 and 26.0 percent in 1995), thus generating abundant fiscal costs, higher interest rates attracted more capital inflows. This demonstrates that the tax increases were meaningless in comparison to interest rate

increases, especially in the absence of exchange risks.

Chile In response to an overheating economy in 1989, Chile's monetary authorities tightened monetary policy, resulting in a surge in private capital inflows. The initial policy action was sterilization and its consequence was the same as the one in Brazil. More inflows pushed the capital account surplus to as high as 10 percent of GDP, and a third of the surplus comprised short-term maturities. In June 1991, the authorities imposed selective controls on capital flows in the form of a 20 percent unremunerated reserve requirement (URR) on foreign borrowing to be placed at the central bank for one year. In the meantime, the central bank curtailed liquidity absorption measures so that the consequentially lower interest rates were consistent with capital controls. These two policy actions proved successful in reducing the volume and stretching the maturities of capital inflows. Capital account surplus dwindled to 2.4 percent of GDP in 1991, and most of the reduction belonged to short-term categories. On the other hand, FDI grew. In 1992 capital inflows surged again so the URR was raised to 30 percent.

In addition, Chile imposed several other regulations limiting short-term and speculative inflows. For example, if foreigners wished to purchase Chilean bonds or stocks, the investments had to be at least US$ 1 million and had to be held for at least five years, but returns or dividends could be steadily remitted abroad. Investments in industries were also subject to minimum maturities, depending on the types of industry. On some occasions, Chile encouraged capital outflows (e.g., by relaxing restrictions on payments of pension funds) as a means to avert excessive expansion in the domestic money supply.

Colombia In the early 1990s, Colombia experienced a surge in private capital inflows, resembling other countries in Asia and Latin America. These inflows climbed from 0.2 percent of GDP in 1990 to 5.2 percent of GDP in 1993. The increase followed various aspects of structural reforms, including wide-ranging exchange and trade liberalization, dismantling of interest rate controls, more foreign ownership of banks, and more FDI. Though the inflows played a role in financing the widening current account deficit, they exerted upward pressure on the exchange rate and raised concerns about loss of competitiveness. Initially, the authorities undertook intervening measures similar to the ones adopted in Brazil and Chile. This intervention was not only costly but also unable to stem the capital inflows because of higher domestic interest rates. Therefore, the government ceased intervention and allowed its currency to appreciate.

However, in 1993 the discovery of oil attracted another round of capital inflows, so controls in the form of URR were adopted in September 1993. This URR was applicable to foreign borrowing with maturities less than five years (except for trade credits maturing within four months) and the required reserves had to be placed at the central bank throughout the loan maturity. The shorter the maturity of foreign loans, the higher the level of URR (i.e., URR went from 42.8 percent for five-year loans to 140 percent for one-month loans). Although the imposition of URR did not subdue the momentum of private capital inflows (which rose from 5 percent of GDP in 1993 to 8.4 percent of GDP in 1996), their maturity structure changed markedly. The share of short-term external debt shrank from 60 percent in 1993 to only 30 percent in 1996.

Czech Republic In 1994-95 an influx of foreign capital was largely attributed to wide interest rate differentials and speculation of currency appreciation. The country's balance of payments surplus thus rose to 6.6 percent of GDP in 1994 and 16.7 percent of GDP in 1995. At first, the government pursued sterilized intervention. Later on, it imposed a 0.25 percent tax on foreign exchange transactions with commercial banks. Moreover, net short-term borrowings of commercial banks were restricted. As for the non-bank sector, any entity wishing to borrow short-term funds from abroad needed official approvals in advance. These controlling measures depressed net capital inflows to 3.5 percent of GDP in 1996.

Malaysia Between 1990 and 1993 the economic scenario in Malaysia was similar to that of the Czech Republic's as described above. Private net long-term capital inflows rose from 5.7 percent of GDP in 1990 to 8.2 percent of GDP in 1993, while the short-term surged from 1.2 percent of GDP to 8.9 percent of GDP during the same period. The initial policy response was sterilization instead of allowing greater flexibility in the exchange rate. The measures implemented proved to be both costly and ineffective. Even though the authorities resorted to increases in the statutory reserve requirements, strong capital inflows persisted as fiscal policy remained tight.

In January 1994 the authorities decided to adopt a number of capital controls, specifically designed to limit short-term capital inflows, in the form of bank foreign borrowings and ringgit deposits by foreign customers. Residents were prohibited from selling Malaysian money market securities with less than one year maturity to non-residents. Commercial banks were prohibited from engaging in non-trade related bid-side swaps or forward transactions with non-residents. Ceilings on banks' net liability positions (excluding trade-related and FDI flows) were imposed, aiming at curtailing bank foreign borrowings for the purpose of portfolio or non-trade transactions. These measures were supplemented by some easing of interest rates. The controls were intended to be temporary. Still, they were apparently effective in reducing the volume and changing the composition of capital inflows. The volume fell from 17.2 percent of GDP in 1993 to 2.1 percent of GDP in 1994, while the short-term portion plunged from 8.6 percent of GDP in 1993 to –4.6 percent of GDP in 1994.

Thailand In the 1980s when the Thai economy was disturbed by high interest rates abroad, but when the capital account had not yet been liberalized, the authorities utilized exemption of withholding tax (to which interest income

payments to foreign creditors were ordinarily liable) as a means to stretch the maturities of foreign borrowings. But this method was terminated in February 1990.

In 1995 the authorities attempted to cope with capital influxes (which were largely due to the exchange rate peg and large interest rate differentials) by the following measures.

1. Limiting net foreign exchange open positions of commercial banks to 15-20 percent of their capital funds.

2. Imposing a 7 percent reserve requirement (held at the central bank) on non-resident baht accounts with less than one-year maturity and on finance companies' short-term foreign borrowings.

3. The minimum amount of out-in flows via BIBF was raised from US$ 500,000 to US$ 2 million.

Although initially these measures may have contributed to a slowdown in foreign borrowing, inflows picked up again toward the end of 1995, in part reflecting a decline in U.S. interest rates. The capital account surplus surged from 8.5 percent of GDP in 1994 to 13.1 percent of GDP in 1995. The persistent growth of capital inflows prompted the authorities to tighten controlling measures in 1996, as it was feared that a more flexible exchange rate policy would lead to an exchange rate appreciation, deterioration in the current account, and a weakening of the banking system. Therefore, the 7 percent reserve requirement was extended to non-resident baht borrowings with a maturity of less than one year and to new short-term offshore borrowing (with maturities less than one year) by commercial banks and BIBF. The minimum capital adequacy requirement on commercial banks was also raised. Finally, in May 1997 the central bank converted the foreign exchange market to a two-tier market and prohibited baht lending to non-residents (except for trade or investment-related transactions), primarily for the purpose of subduing currency speculation.

Overall, the regulatory controls adopted in 1995-96 seem to have reduced net capital inflows, decreased their short-term portion from 62 percent in 1995 to 32 percent in 1996, lengthened the maturities of BIBF loans (long-term share rose from 14 percent in 1995 to 34 percent in 1996), reduced the share of short-term debt outstanding (from 50 percent to 43 percent), and marginally reduced the growth of non-resident baht accounts. However, it is ambiguous whether these improvements were due to the implemented controls or the deterioration of investor confidence, or to other external factors.

Thailand's painful experience with massive capital flows demonstrates some useful points. First, financial sector reform as well as exchange rate flexibility lagged far behind capital account liberalization. Such incongruity, together with high domestic interest rates, led to a substantial build-up of short-term external debts or greater vulnerability of the economy. Second, capital controls were not an effective substitute for fundamental remedial policies. Third, reliance on capital controls may have delayed a much-needed move toward greater exchange rate flexibility and the adoption of proper monetary and fiscal policies.

F. DIFFERENT APPROACHES TO HANDLE CAPITAL FLOWS

In the recent Asian financial crises, the IMF assisted several near-bankrupt countries (which nearly ran out of net foreign exchange reserves in the midst of capital outflows) by assembling emergency credits, with an ultimate target of rebuilding foreign exchange reserves and restoring confidence through different measures, such as the following:

- Curtailing expenditures (to reduce the current account deficit)

- Increasing domestic interest rates (to discourage spending, attract foreign funds, and avert further exchange rate depreciation)

- Upgrading financial institutions in the system (to rectify the problems of deteriorating asset quality and trembling stability)

In short, the IMF's resolution of the crisis was market-oriented. Reserves were not to be strengthened by exchange controls on either the current account or capital account. Prudent macroeconomic policies were prescribed (e.g., restrictive fiscal budget, high interest rates). Weaknesses in the financial system were remedied (e.g., standardizing loan classification, requiring adequate provisioning). The approach of the IMF corresponds well to Section C, which emphasizes that confidence is an extremely important element in the current dynamic of international financial markets. Thus far, after the recipient countries (e.g., Thailand, South Korea) abided by the IMF prescriptions, they were markedly successful in regaining foreign investors' confidence, as substantiated by mounting foreign exchange reserves and notable economic rebound.

However, many parties criticized the IMF approach as too costly in terms of initial economic recession, unemployment, lower living standards, and social unrest. Furthermore, restrictive conditions together with a socioeconomic downturn may lead to a vicious circle, as such a slump may lower the country's credit rating, making some foreign investors or lenders hesitate to bring in capital flows, while others may even withdraw their outstanding credits. Therefore, the IMF

was requested to relax its conditions.

In contrast with the IMF's market-oriented approach, Malaysia resorted to stringent capital controls, and a fixed exchange rate since September 1998. On the one hand, this barrier may help avert disturbances arising from volatility of short-term funds and reinvigorate the economy. On the other hand, it could weaken investor confidence and may trigger reciprocation from other countries. In this dilemma, one should take into account that investor confidence or country credibility is vital and highly fragile, to such an extent that once it is impaired, rehabilitation is a fairly difficult task.

Another alternative to control foreign capital is a Tobin tax—one that is imposed on all foreign exchange transactions. The underlying objective is to suppress cross-currency arbitrage or speculation. However, its practicality is often doubted because of various loop-holes, difficulties involved in examining and distinguishing speculation from trade-related transactions, possible reciprocation from trading partners, and opposition from international organizations.

Given that the extreme approaches of the IMF, Malaysia, and a Tobin tax can all have adverse repercussions, especially upon foreign investors' confidence, a mid-course or compromise seems attractive. That is, temporary controls on short-term capital flows may help reduce the vulnerability of the recipient economy. The objectives of such controls are the following.

- Reducing volatility of private capital flows
- Increasing the policy autonomy of the debtor country
- Avoiding unnecessary fluctuations, depreciation and appreciation of local exchange rates.

Before adopting any controlling measures, the government ought to be aware of the following precautions.

1. The timing should not be too late and the duration not too long.
2. What really matters is the end use of funds and their returns, not just the maturity per se.
3. The target should be flows, not stocks.
4. Consistency with all other economic (fiscal, monetary, exchange rate) policies.
5. Consistency with different types of business behavior.
6. Preservation of foreign investors' confidence.
7. Possible impacts and loopholes.

G. HOW TO BUILD UP IMMUNITY TO CAPITAL FLOW VOLATILITY

As implied by Section F, the *first step* to immunize against currency crisis is not capital control but close monitoring of capital flows and their end uses. Detailed and immediate information on these items will serve as a guideline to design correct policy actions and implement them with proper timing or sequencing. Such an information system should include both micro and macro data. The following will illustrate some micro problems that an efficient information system could help detect at an early or curable stage, and suggest proper remedial measures.

- Some foreign-funded projects (e.g., hospitals) have returns only in local currency and these are not high enough in terms of foreign exchange when valued at real exchange rates.
- Some projects distort the optimal use or allocation of resources in other sectors, while others (e.g., automobile assembling) entail excessive downstream investments.
- Some projects (e.g., oil refinery) continually need inputs from abroad, thus creating persistent current account deficits.
- Some projects (e.g., real estate, electricity generation) stimulate herding movements, leading to asset price bubbling or economic overheating.

The *second step* to build up immunity is to adopt some macroeconomic early warning systems. In this regard, several economists have used various econometric methods to analyze the emergence of currency crises and their important determinants. For example, Goldfajn and Valdes (1997) used the logit model to test 26 countries in 13 years (1984-97) and found that real exchange rate misalignment was the only statistically significant variable. Esquivel and Larrain

(1998) applied the probit model with random effect to 30 countries in 21 years (1975-96). Their results indicated that the following were statistically significant determinants of currency crises.

- Real exchange rate misalignment
- Variation of reserve money as a percentage of GDP
- Current account
- The ratio of M2 (money supply) to foreign exchange reserves
- Changes in terms of trade
- Growth of per capita income
- Contagion effect

Kaminsky, Lizondo, and Reinhart (1998) examined 76 currency crises in 20 countries from 1970-95 by employing the signals approach. They detected that the following were important explanatory variables, ranked by their degree of significance.

1. Real exchange rate
2. Banking crisis
3. Exports
4. Stock prices
5. M2 divided by international reserves
6. Output
7. Excess M1 balances
8. International reserves
9. M2 multiplier
10. Domestic credit/GDP
11. Real interest rate
12. Terms of trade
13. Real interest differential
14. Imports
15. Bank deposits
16. Lending interest rate/deposit interest rate

The outcomes of these studies may not coincide because of different definitions of currency crises and different methods or measurements. Nevertheless, each debtor government should closely *monitor* the following indicators, as they can serve as reliable warning signals of possible capital flow problems.

- Real economic growth relative to those of other economies
- Current account trends
- Relative pace of inflation
- Interest rate differentials

- Real exchange rate
- The short-term portion of external debt outstanding
- Maturity profile of external debt service
- Projected debt service/export earnings ratio in the next three years
- Average ratio of essential import expenses to foreign exchange earnings
- Diversity of sources and types of foreign exchange earnings
- The ratio of foreign exchange reserves to the sum of import expenses and short-term debt service
- Size and frequency of fluctuations of exchange rates between the local currency and primary currencies

On some occasions, the debtor government may wish to respond to capital flows by injecting or absorbing some liquidity to or from the domestic money market. Nevertheless, experiences of other debtor countries, such as those mentioned in Section E, demonstrate that capital flows can easily react to, and nullify, the expected effect of such sterilization or intervention, depending on exchange rate policy and market sentiments or expectations. This underscores the importance of policy consistency and confidence.

In any case, Thailand alone can hardly build up adequate immunity to capital flow volatility because the volumes involved can be colossal, as occurred in 1997. Therefore, the *third step* of immunization is regional cooperation. Such cooperation in any format, as exemplified below, can have a strong psychological effect on currency traders, speculators, and international investors, since regional cooperation means greater momentum of possible intervention that could lead to increased exchange rate stability.

As countries in East Asia (EA) altogether commanded current account surpluses throughout the 1990s (Chart 2), and the trend is firm, they should attempt to recycle funds within the region. The fund recycling will help reduce unnecessary exposure to financial institutions in other continents. Less intercontinental exposure will lessen the degree of capital flow volatility and the chance of currency crisis. An example of a means to achieve fund recycling is a central unit to be established to undertake wholesale borrowing and retail lending to private companies within the East Asian region.

Reserve pooling is another channel that EA countries may pursue and openly declare that the funds from this pooling will be utilized in foreign exchange intervention if EA exchange rates fluctuate to an excessive degree. This cooperation and announcement will certainly have a strong psychological impact and more influence than any single country's attempt at currency intervention. Therefore, this channel can help preserve exchange rate stability in the region.

Two other ways to alleviate disturbances from capital flow volatility and exchange rate fluctuations are as follows. First, intra-regional trade may be conducted in local currencies through bilateral payment arrangements, such as the one already agreed upon between Malaysia and the Philippines. Second, to screen out extraneous disturbances, EA countries could construct an East Asian Currency Index to be used as an alternative numeraire, instead of non-EA currencies, in making intra-regional transactions.

H. CONCLUDING REMARKS

1. The Asian financial crises may have convinced most observers or analysts that short-term capital flows from abroad were to blame. That is because huge short-term external debt outstanding built up before the crisis and the crisis was sparked by abrupt and substantial capital outflows. However, thorough examination reveals that short-term capital flows were not the primary cause of the crisis. Their only role was to increase the vulnerability of debtor countries.

2. Even in that respect, their role was not singular, as in the current international financial arena there is little difference between short-term and long-term debts regarding the flexibility of repayment. Loan contracts often contain prepayment clauses that allow debtors or creditors to opt for prepayments.

3. What really matters is the confidence that lenders have in the borrowers' and the borrowing country's debt servicing capacity, and that borrowers or lenders have in exchange rate stability. Should this confidence be adequately strong, capital inflows are readily available and there is not much threat in short-term capital flows. Short-term loans[1] can be either rolled over or refinanced as long as there is enough confidence. On the other hand, when confidence is not strong enough, other factors cannot compensate for it. Neither can they stop weakening confidence from triggering capital flight.

4. To preserve or upgrade confidence, borrowing countries have to try their best to improve their debt servicing

capacity and to ensure stability in their financial systems. Confidence is both intricate and fragile, depending on a number of important variables, for example, foreign exchange reserves, current account, inflation, interest rate, real exchange rate, existing debt service profile, domestic savings, investment opportunities, growth prospects, and the stability of financial institutions. Most of these variables correspond to typical objectives of macroeconomic policy, so to target macroeconomic management at preserving or upgrading investor confidence dose not mean that the debtor government has to forgo its autonomy or any crucial objectives.

5. Items (1)-(4) support the claim that short-term capital flows were not the principal origin of crisis. Instead, the two main culprits were illusive investment motives and macroeconomic mismanagement. Thus, controlling short-term capital flows *alone* will not always prevent future financial crisis. It will only help resolve or alleviate problems. In other words, to control capital flows is to tackle the problems too late and at the wrong end.

6. If future financial crisis is to be successfully prevented, the following policy actions should be continually undertaken, instead of only when problems (start to) emerge.

   6.1 An *efficient information system* should be set up to closely monitor market sentiment, investment opportunities prospective investors and their expected investments, their rates and formats of returns, underlying motives, consumption and saving patterns, prevailing and expected financial market conditions, export markets, and glc economic atmosphere. This information system should help pinpoint the potentially wrong spots in the microeconomic context.

   6.2 Macroeconomic management should aim at preserving or upgrading investor *confidence* because of the significance of confidence.

   6.3 The authorities in the recipient country ought to ensure the *consistency* of all discretionary economic policies (including fiscal, monetary, exchange rate policies, and capital or exchange controls). Otherwise, their policies could be not only costly but also fruitless.

   6.4 Some *early warning indicators* should be adopted by the borrowing country to steadily evaluate its comprehen macroeconomic status, debt servicing capacity, and financial stability.

   6.5 Once the information system and early warning indicators show any sign of *possible* problems, the authorities should design and impose specific *preemptive* measures on the *particular* spots or sectors which are stirring u misuses of resources or provoking dangers. This route is recommended since there is no cure-all medicine, ar not any one across-the-board measure alone, like capital controls, will be able to prevent all problems on all occasions.

   6.6 Another step to build up immunity to capital flow volatility is *regional cooperation*. Examples of regional cooper are fund recycling, reserve pooling, payment arrangement, and a currency index. This cooperation can help nc only in real terms but also in terms of psychological impact against speculation. Cooperation can thus serve to stabilize exchange rate movement, which is a primary determinant of capital mobility.

In short, these recommendations are aimed at detecting and rectifying problematic spots in the *offing*, while investor *confidence* should be preserved or improved by all means. Across-the-board measures *alone*, like capital controls, may not be effective methods to prevent crisis, due to mistiming, mis-targeting, loopholes, circumvention, and financial engineering, as experienced by several countries.

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