Macroeconomic Adjustments of the East Asian Economies after the Crisis: A Comparative Study

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This paper examines the role of macroeconomic environment in the adjustment processes of the East Asian Crisis. It first reviews the macroeconomic development after the crisis in the five East Asian countries (Indonesia, Korea, Malaysia, the Philippines, and Thailand) and contrasts the degree to which each country has been affected by macroeconomic constraints. Based on that, it attempts to make assessments on what caused such a severe economic contraction and recent recovery in the region. Several policy implications follow out of our analysis. First, accommodative macroeconomic policies will be needed to continue for a while, perhaps until a clear sign of inflationary pressure develops, to prevent weakening of the corporate financial structure. Second, resumption of private capital flow will be an essential factor for the fast recovery of these economies. Third, more serious and comprehensive efforts are necessary to encourage the development of capital markets. Fourth, the IMF policy packages to be imposed on the future crisis-hit countries will be needed to be better tuned to individual market circumstances such as corporate leverage ratio, openness of the economy and etc. (*JEL* Classification: E20, E44, E63)

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I. Introduction

The financial crisis has brought unprecedented economic and social distress to the Asian economies. The once booming economies of East Asia have gone into a tailspin since the breakout of the financial crisis in the middle of 1997. The average growth rates in Indonesia, Korea and Thailand had been well above 7% during the early 1990s but dropped dramatically to -13.6%, -5.8% and -9.5%, respectively in 1998.[1] Prior to the crisis, they all enjoyed virtually full employment but the unemployment rates in Indonesia, Korea and Thailand reached 8-10%, 8% and 4.4%, respectively at the end of 1998. No one had expected such a severe contraction of the Asian economies. Only in the second half of 1998 did the East Asian countries start to move away from the free-fall to stabilization. Although the recovery in the first half of 1999 has been quite impressive, it has been uneven across countries, and is clouded by many uncertain factors.

After the crisis erupted in Asia, there have been many studies on the causes of the crisis (Cho 1998; Corsetti, Presenti and Roubini 1998; Fischer 1998; Park and Rhee 1998; and Radelet and Sachs 1998a, b). They point out that the nature of the Asian Crisis is quite different from that of traditional ones. Unlike typical currency crises, it had little to do with mismanagement of monetary and fiscal policies. Instead, it resulted mainly from the background structural problems in East Asia and the intrinsic instability in the international financial system. Weak regulation of financial intermediaries and poor governance in corporate and government sectors induced excess domestic and external debt financing and rendered these countries extremely vulnerable to changes in the international capital market sentiment and contagion. Although structural weaknesses, not macroeconomic policy mismanagement, were the roots of the East Asian crisis, it is still important to understand the role of macroeconomic environment. Regardless of whether or not macroeconomic variables were significantly derailed prior to the crisis, macroeconomic adjustment should be an essential element in the road to recovery.

The purpose of this paper is to examine the role of macro-economic environment in the adjustment processes of the East

[1]These are the preliminary estimates.

Asian crisis. We first document the macroeconomic adjustment after the crisis in the five East Asian countries (Indonesia, Korea, Malaysia, Thailand and the Philippines) and contrast the degree to which each country has been affected by macroeconomic constraints. We will especially focus on the effectiveness of the IMF stabilization programs, the extent of the credit crunch, and the conflicting and complementing nature between macroeconomic stabilization and structural reform.

The East Asian crisis and recovery is still unfolding. Thus, it may be premature to draw any conclusions or policy lessons yet. Nevertheless, based on the observation of what has developed so far in these countries, we attempt to identify macroeconomic factors that contributed most to uneven recovery among the East Asian countries and draw some policy implications for faster recovery in the future.

Our findings can be summarized as follows. The unexpectedly severe downturn of these economies has been caused mainly by the precipitous drop in investment and, to a lesser degree, consumption. Many factors contributed to the sharp fall. The magnitude of capital flow reversal was remarkable. For example, during 1997, Thailand experienced a sudden reversal of private capital inflows that amounted to about 20% of GDP. It is no wonder that this large-scale shift in financial inflows provoked deep contractions and financial embarrassment. The concurrent huge depreciation of their currencies aggravated the balance sheets of financial institutions and corporations that had large unhedged foreign-currency liabilities. To prevent depreciation-inflation spirals, some period of tight monetary policy was inevitable and the resulting high interest rates had a profound effect on the credit crunch and corporate bankruptcies in these highly leveraged countries. The negative effect was exacerbated because the stabilization policy was imposed in conjunction with rapid financial restructuring.

Ironically, it was the sharp economic downturn that contributed to the stabilization of the exchange rates and interest rates in the second half of 1998, and thereby laying the ground for recovery, particularly in Korea and Thailand. The sharp fall in demand and the resulting decline in import brought about drastic reversal in the current account positions and in turn helped to build up a substantial increase in foreign reserves. We believe this speedy adjustment to stabilization was possible since the East Asian

countries were more open and private-sector oriented than other crisis economies such as Latin America in the 1980s and Eastern Europe in the early 1990s. The essence of the IMF adjustment program is undoubtedly to stabilize the exchange rate market in the short run through belt-tightening. With common sense, we can see that the private sector's belt is easier to tighten than the government's. Also the recession in domestic market could generate a larger improvement in current account balances since these economies were more open and export-oriented.[2]

Despite the common characteristic of a sharp initial downturn, the adjustment process and the policies taken varied widely across the countries. Indonesia shows that policy for stabilization cannot be effectively implemented if fundamental structural problems remain unsolved. Uncontrolled monetary expansion in bailing out troubled financial institutions not only delayed recovery but also brought Indonesia to the verge of hyperinflation. The Malaysian case also shows that the belt-tightening policy alone is not sufficient in stabilizing the exchange rate market and that a resumption of foreign capital inflows is essential for recovery. Until mid 1998, Malaysia adopted a 'virtual IMF' policy package of austerity that brought a sharp recession and huge improvement in current account balances, but unlike Korea and Thailand, it failed to stabilize the foreign exchange market. This may be a reflection of the difference in the availability of external financing opportunities through official program loans or private capital inflows. Malaysia had to achieve a more drastic current account adjustment since it did not benefit from the official program loans of the IMF and probably the government's isolationist propensity deterred the resumption of private capital inflows.

Finally, the development of external environments had just as significant a consequence in the adjustment path as it did in the eruption of the crisis. The stabilization of the Yen/Dollar rate and cut in US and Europe interest rates in mid 1998 helped to a great extent in stabilizing the exchange rates and interest rates in these economies. Without such a favorable development in the external

[2]Mexico is a good example. In the 1980s when Mexico had a large government budget deficit, the stabilization policy was not very effective in curtailing current account deficits. In 1994, when Mexico had a smaller budget deficit and became more open after the NAFTA was passed, the stabilization policy brought sharp swings in the current account balance.

environment, the exchange rates and interest rates of these economies would have been more unstable and economic recovery might have been further delayed.

The paper is organized as follows. In Section II, we briefly review the macroeconomic development after the crisis and the recovery prospects for the region. In Section III, we discuss the role of monetary and fiscal policy in the adjustment process. Based on the development so far, Section IV attempts to make a preliminary assessment on the cause of the severe economic contraction and recent recovery in this region. Section V concludes and draws some policy implications.

II. Macroeconomic Development after Crisis

The crises of the East Asian Economies have many common features: Weak financial systems, excessive unhedged short-term foreign borrowing, lack of transparency in business practices, etc. Nonetheless, there exist significant differences regarding the origins and the pre-conditions. Among these countries, the signs of deteriorating economic conditions and overheating pressures were most visible in Thailand before the crisis. Key macroeconomic indicators were stronger and the financial system was relatively better shaped in Malaysia than the other South East Asian countries. The structural weaknesses were of a different nature as well. In Korea, the poor governance of corporate and financial sectors was the main cause of her structural weakness. In Thailand, the liberalization of the financial system and the external capital accounts without an adequate regulatory and supervisory system played a more significant role.

Reflecting these differences in pre-conditions, the adjustment processes were uneven in these East Asian countries. Nevertheless, there were substantial common trends in the adjustment processes. First, they all experienced severe economic contraction and a drastic reversal of current account balances. Second, they all geared their macroeconomic policy stance toward expansion starting in the middle of 1998, cutting interest rates and expanding fiscal deficits. Third, the signs of recovery have been evident starting late last year. Korea has shown the most rapid and impressive recovery followed by Thailand and Malaysia. The economies of the

Philippines and Indonesia still show some uncertainty but there also have been clear signs of recovery.

Table 1 shows the quarterly macroeconomic performance of the five East Asian countries from 1996 to the first quarter of 1999. Among these countries, the adjustment processes in Korea and Thailand are most similar whereas Indonesia and Malaysia seem to have their own patterns. The Malaysian economy overcame the currency crisis without the IMF program, but in many respects, it has gone through a similar adjustment process to that of Korea and Thailand. On the other hand, the Philippines, which was recovering from their currency crisis in the early 1990s, basically sidestepped the regional crisis. Because of this difference in the case of the Philippines, our discussion below will focus mainly on Korea, Thailand, Indonesia, and Malaysia.

A. Thailand and Korea

As can be seen in Table 1, the economic slowdown during the crisis in Thailand and Korea was dramatic. In the first quarter of 1998, industrial production indices in Thailand and Korea declined by 18 and 8 percent, respectively, compared with those of the first quarter of 1997. In 1998, the real GDP decreased by 9.5 and 5.8 percent in Thailand and Korea, respectively, which are their worst post-war economic records. The reversal of the foreign capital inflows was enormous. In the last quarter of 1997, the private capital outflows in Korea and Thailand amounted to 19 and 22 percent of their GDP. The large capital outflows depreciated the currencies precipitously and the stock markets plummeted. Between January and December 1997, the Korean won was depreciated by 121 percent and her composite stock price index declined by 50 percent. The value of Thailand's baht and composite stock price index declined by 139 and 52 percent during a similar period.

The sharp depreciation provided inflationary pressure. Together with the increase of import price, expected inflation soared since the market participants anticipated that the central banks of these countries would inject massive liquidity support to save the banking system. The inflation rates in Thailand and Korea increased swiftly almost twofold by the first half of 1998, reaching 10 and 9 percent, respectively. Due to a higher inflation and the tight monetary policies imposed by the IMF, nominal interest rates

drastically increased. At its highest, the benchmark corporate bond yield rates in Korea rose to above 30 percent from their pre-crisis average of 12 percent. In Thailand, interbank lending rates increased from 10% to 24%. The punitive level of interest rates strangled businesses, including those that would have been viable and robust otherwise. Bankruptcy and unemployment rates sky-rocketed. The yield premium on each country's government global bonds, which reflects the sovereign risk, also indicates that the financial turmoil showed no sign of abating.[3] In the first half of 1998, it continued to increase partly due to the aggravating conditions in the international capital market amid the crises of Russia, Venezuela and Brazil.

The magnitude of the economic slowdown during the crisis is most visible in the dramatic responses of current account adjustment. The current account was in surplus in 1998, reaching 12.7 and 11.7 percent of GDP in Korea and Thailand. The improvement of the current account was forced by a harsh recession. It was mainly due to the decrease in import rather than the increase in export. In Korea, import declined by more than 36% in the first half of 1998 while the export growth remained stagnant.[4] The decline of import was mainly attributable to the precipitous fall of investment demand. Compared with the same period in 1997, the private investment demand declined by 28 percent whereas consumption declined by 12 percent in the first half of 1998 in Korea.

After the free-fall in the first half, macroeconomic indicators started to stabilize in the second half of 1998. Real GDP and industrial production figures improved, notably in Korea. By the first quarter of 1999, over half of the sharp initial exchange rate depreciation had been reversed in Korea and Thailand. The most significant recovery was shown in the stock market (See Figure 1). By June 1999, the stock price index in Korea increased beyond the level at pre-crisis. And most importantly, foreign investors' con-

[3]This is the yield spread between a dollar denominated Korean or Thailand government bond and the U.S. Treasury bond with a 10 year maturity. It reflects the sovereign risk premium on each country.

[4]It is true that the export volume increased significantly after the initial depreciation of the Korean won. But its growth slowed down quickly thereafter. Moreover, there had been no improvement of export in dollar-denominated terms.

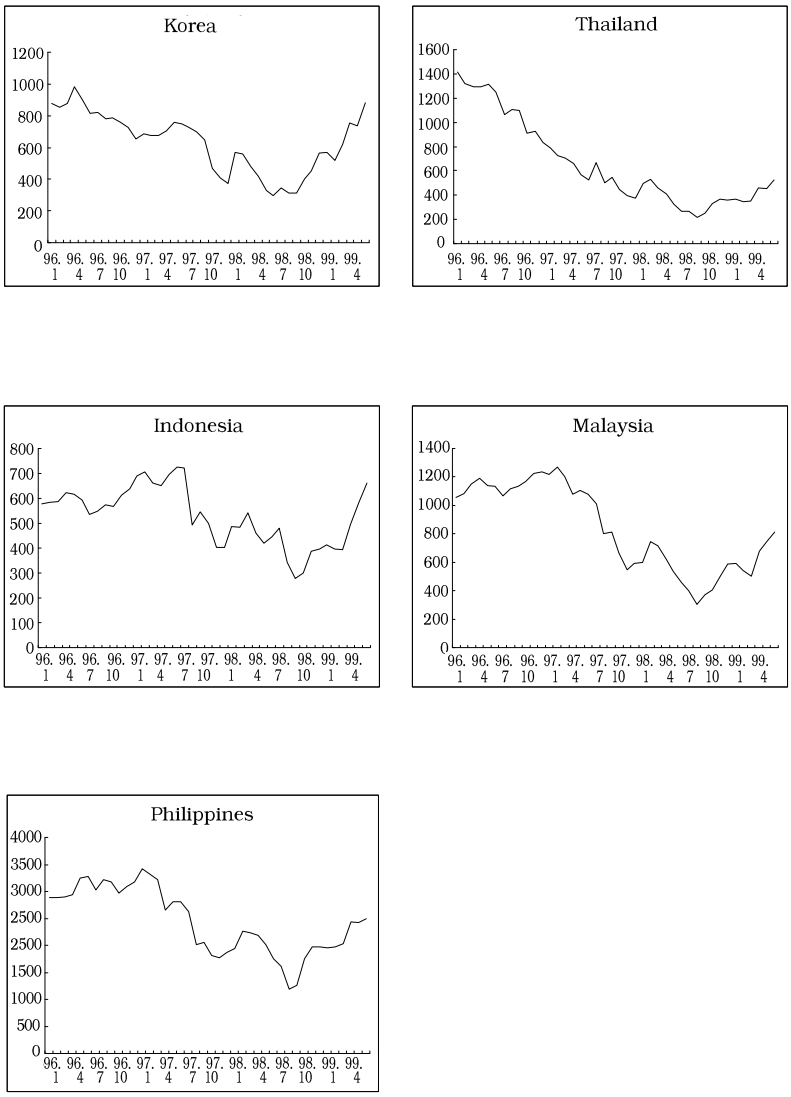

FIGURE 1

STOCK PRICE INDEX

fidence was improved and foreign private capital inflows resumed. The yield spread on the government global bond was reduced significantly in the second half of 1998, reflecting the decline of sovereign risk. The inflation rates were also well contained and became lower than the pre-crisis level. High nominal interest rates, which strangled these highly leveraged countries, dropped drastically. In Thailand and Korea, the interest rates in the last quarter of 1998 were significantly lower than their pre-crisis values. Even the unemployment rates began to show signs of improvement, although employment would usually take a more sluggish adjustment process in the road to recovery.[5] The progress in structural reform and the improvement of external payment conditions, largely due to huge current account surpluses, must have been the main drivers of economic stabilization in Thailand and Korea. Also, as we will discuss in the next section, the shift in macroeconomic policy from austerity to easy stance seems to have contributed to the recovery.

To some extent, the improvement in the growth rates of real GDP and industrial production in the last quarter of 1998 was a mere statistical phenomenon induced by the sharp recession experienced at the beginning of the crisis. Also, the recent GDP growth was partially due to the changes in inventory investment. Figure 2 shows the movement of the ratio of inventory investment to GDP during the crisis in Korea. After the crisis erupted, inventory investment had fallen sharply to -15 percent of GDP. The sharp decline in inventory investment was historically unprecedented in Korea and quite different from the stylized cyclical pattern observed in the literature.[6] It clearly indicates how panicked the businessmen were by the crisis; the decline was largely associated with fire sales and export of existing stocks, especially raw materials.[7] High interest rate expenses, exchange rate depreciation, and the lack of cash flows must have forced the disposal of existing stocks.

[5]See Lee and Rhee (1998) for the stylized pattern of employment growth in previous IMF program countries and its policy implications.

[6]When an unanticipated demand shock occurs, production usually follows final demand with a lag, implying that inventory stocks rise in the short run. See Bernanke and Gertler (1995), Christiano, Eichenbaum and Evans (1994), and Sims (1992).

[7]The export of gold through voluntary campaign in Korea accounted for 18 percent of the total decrease in inventory investment during this period.

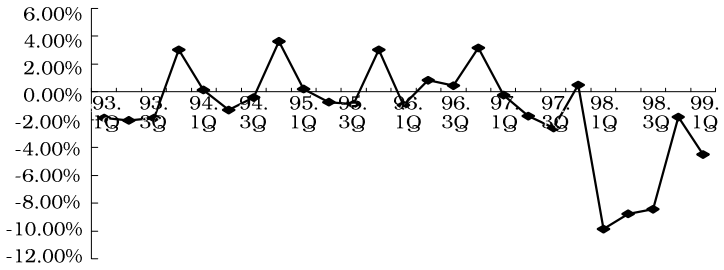

FIGURE 2
INVENTORY INVESTMENT / GDP IN KOREA

After the free fall, the inventory investment became almost zero in the last quarter of 1998. The concurrent increase in inventory investment from -15% of GDP to zero (not the increase in inventory stock) was the main factor behind the sharp increase in the recent GDP growth rate. But, in the first quarter of 1999, inventory investment fell again suggesting a rapid recovery of consumption expenditure and that the recovery trends have become more robust.

B. Indonesia

Unlike Thailand, Indonesia's macroeconomic performance was quite strong until mid 1997. But it had its own structural weakness, which exposed Indonesia to the contagion from the Thai and Korean crises in the latter half of 1997. Short-term external debt had been rising rapidly and its weak financial system cast doubts on the government's ability to defend the currency peg. Besides, import monopoly and domestic trade regulations impeded economic efficiency and competitiveness. Political uncertainty arising from the elections in late 1997 and the presidential election in March 1998 compounded economic problems. The El Nino ignited forest fire and long drought at the wrong time. It caused serious damaging effects on the forestry and the agricultural sector, reducing its export and raising food prices.

Like Korea and Thailand, the economic downturn after the crisis was historically unprecedented in Indonesia. Her real GDP declined by -13.6 percent in 1998. After sharp economic contraction reaching -18.4 and -19.5 percent growth in the third and last quarters of 1998, the economy seems to have turned to recovery in

the first quarter of 1999. However, unlike Thailand and Korea, it still shows significant negative growth of -13.7 percent. The exchange rate depreciated enormously from July 1997. In June 1998, the rupiah hit an all time low of 16,650 against the dollar, with a cumulative depreciation of 85 percent since July 1997. But since the last quarter of 1998, it began to stabilize and started to appreciate again. The average exchange rate in the first quarter of 1999 was 8,788 against the dollar. The composite stock price index declined by 53% during a similar period. But it also began to increase since the first quarter of 1999. The inflation rate in 1998 soared to 58 percent and at its highest, one month interbank interest rates rose to above 70 percent from their pre-crisis level of 12 percent. Her sovereign risk, which is measured by the yield spread on the government global bonds, had been the highest among the five East Asian countries after the crisis. Despite the sharp recession, export performance was not significantly improved and the current account surplus in 1998 was only 4% of GDP, which is significantly lower than those in Thailand and Korea. In sum, Indonesia suffered the worst crisis among the five East Asian countries. Only very recently, did the Indonesian crisis start to show signs of abating, but prospects are not as bright as that of Korea or Thailand.

Political uncertainties seem to play an important role in undermining reform progress and delaying recovery in Indonesia. For example, the implementation of the IMF program was cast off track by severe civil unrest, which led to the resignation of President Suharto in May 1998. However, it was the mismanagement of monetary policy that prevented recovery and brought the dangers of hyperinflation to Indonesia. Facing the financial sector strain and the danger of bank runs, the Bank of Indonesia injected massive liquidity support to troubled financial institutions but made limited effort to sterilize it. Between November 1997 and March 1998, the increase in net domestic asset of the central bank amounted to more than twice the entire stock of base money in the beginning of that period.[8] The growth

[8]Cited from Lane *et al.* (1999). In December 1997, the Bank of Korea also injected massive liquidity support (more than one-third of reserve money) in preventing the collapse of banking system. However, in contrast to Indonesia, the Bank of Korea sterilized the injection.

rate of M2 rose to 80 percent in the second quarter of 1998, well above its growth rate in 1997, which was 25 percent. Uncontrolled monetary expansion with no progress in structural reform pushed the economy to the verge of a vicious circle of hyperinflation and currency depreciation. Indonesia's experience highlights the fact that relaxed macroeconomic policies can aggravate the crisis if structural problems remain unresolved.

C. Malaysia

Prior to the crisis, the Malaysian economy showed the strongest macroeconomic performance among the five East Asian countries. It had enjoyed the highest growth rates of 8-9 percent with the lowest inflation of around 3% and virtually full employment. Only the widening current account deficits in mid 1990s showed signs of imbalances but these were regarded as inevitable and sustainable considering its high growth and investment. Also, unlike Korea and Thailand, the current account deficit was covered mostly by long term capital (mostly foreign direct investment) rather than short-term capital. Moreover, the financial system in Malaysia was known to be in better shape than those of other Southeast Asian countries, even though the belief must be questionable in hindsight.

However, Malaysia was not an exception falling into deep recession after the crisis erupted in Thailand. Even if its financial system was in a better condition than the other crisis-hit countries, it was not sound enough to avoid contagion from Thailand.[9] From the second half of 1997, foreign capital started to flow out and economic activity slowed down significantly. In 1998, the real GDP contracted by 7.1 percent, peaking at -10.3 percent growth in the fourth quarter. The inflation rates soared to 5.3 percent from 2.7 percent during the same period, even though expansionary monetary policies now being pursued could accelerate inflation to a much higher level. One month interbank interest rates rose to 11 percent in the second quarter of 1998 from their pre-crisis level of

[9]The BIS (1997) official estimates for actual nonperforming loans in Malaysia in 1996 was 3.9 percent of total loans, which was significantly lower than those of Thailand (7.7%) and Indonesia (8.8%). But it was higher than those of Korea (0.8%). The other estimates show that the ratios were not significantly lower in Malaysia than in the other crisis-hit countries in 1997 and 1998. See table 5 in Goldstein (1998).

7 percent. The exchange rate depreciated by 40 percent against the dollar and the stock market fell by more than 50 percent between mid 1997 and July 1998. The unemployment rates increased to around 5 percent in 1998 from 2.7 percent (virtually full employment) in 1997.

Until mid 1998, Malaysia's response to the crisis can be described as a 'virtual-IMF' policy package of austerity measures except that it tried to cut imports by increasing import duties and imposing other regulations.[10] In December 1997, Malaysia announced a program to slowdown the economy and to lift foreign investors' confidence. The growth outlook was adjusted downward and the current account deficit was targeted to come down to 3 percent of GDP. Public expenditures including mass development projects were reduced and re-prioritized with significant budget cuts of 18-20 percent. Monetary policy was tightened, credit expansion was placed under control and the benchmark interest rate was raised. In sum, the same prescription of the standard IMF package was implemented in Malaysia until mid 1998 without being officially bounded by IMF conditionalities.

However, the tight monetary and fiscal policies failed to stabilize the Malaysian economy in the first half of 1998. The resulting credit crunch slowed economic growth and aggravated the recession. Despite the higher adjustment in interest rates, the exchange rates steadily depreciated and remained volatile. Like Thailand and Korea, export performance was weak whereas import dropped precipitously. As a result, the current account surplus amounted to 12.9 percent of GDP in 1998, increasing from its 1997 value of -4.9 percent. Frustrated with the worsening economic performance, Malaysia decided to go its own way. In July 1998, it announced the National Economic Recovery Plan (NERP) which focused on easing monetary and fiscal policy to provide a stimulus to economic activities. In order to alleviate the credit crunch, prudential standards were relaxed although remaining tighter than pre-crisis levels. In September, the government introduced capital controls on outflows of capital and fixed the exchange rates at 3.805 rupiah to the dollar. It intended to gain flexibility for easing monetary policy. Following the adoption of these measures, the

[10]See Yusof (1998) for a detailed explanation of the shift in Malaysian economic policy from mid 1997 to the end of 1998.

interest rates were reduced to the pre-crisis level.

After introducing its own designed policy, there are some signs that the economy has recently started to stabilize in Malaysia. The growth rate in the first quarter of 1999 increased to -1.3 percent, up from -10.3 percent of the previous quarter. Stock market also has shown fast recovery while interest rates have been stabilized. However, their outlook is still premature to judge given the short span of time in which the new policies have been implemented. The general view on capital control is that it could bring benefits in the short-run but not in the long-run. Changing the policy focus from stabilization to expansion could provide short-term relief to Malaysia. However, it should not be forgotten that resumption of foreign capital inflows is critical for bolstering the economy in the long run. Whether foreign capital will return despite the experience of capital controls is a key risk facing Malaysia. Also, completing corporate and financial sector reforms while providing liquidity supports is a major challenge. The outcome of the Malaysian approach will be an interesting touchstone for evaluating the standard IMF policy in the future.

III. Monetary and Fiscal Policies in the Adjustment Process

The severe contraction of the East Asian countries raised serious questions as to whether the initial response of the IMF packages was unnecessarily tight for these countries. The critics argue that, instead of having favorable impacts on foreign investors' confidence, the tight macroeconomic policies and the consequent high interest rates had a negative effect on these highly leveraged countries. This section reviews the magnitude and the impact of the tightened monetary and fiscal policies in the evolution of the crisis. We will focus mainly on the cases of Korea, Malaysia and Thailand while using the Indonesia case as a reference point. As discussed before, the macroeconomic policy stance in Indonesia was quite different from the others. It was not at all tight and the Indonesian government regained control of it only since the second half of 1998.

A. Monetary Policy

Figure 3 shows the movement of monetary aggregates in Indonesia, Korea, Malaysia and Thailand. They are the monthly stock of reserve money, M2 and domestic credit deflated by CPI.[11] Several features are apparent. In Indonesia, they increased significantly in the first half of 1998, showing that the Indonesian government lost control of the money supply by bailing out troubled financial institutions and preventing bank runs. In contrast, real M2 and credit in Malaysia steadily decreased in 1998. Even after they abandoned the 'virtual IMF' policy in July 1998, there was no sign of significant monetary expansion in Malaysia until the very end of the year. It is harder to judge how tight the monetary policies in Korea and Thailand are from the figures. Reserve money and M2 decreased little or grew at slightly slower rates than previously in the first half of 1998. But from the second half of 1998, there was no sign of monetary contraction, particularly in Korea. In sum, real monetary aggregates and credit in Korea and Thailand did not seem to be severely contracted except for the brief period at the beginning of 1998.

Based on the fact that the slower growth rates of real money and credit were not dramatic, some raised doubts against the view that tight monetary policy was the main cause of the sharp economic downturn in the East Asian countries.[12] However, quantity changes in monetary aggregates may not be fully adequate in reflecting the severity of credit tightening. Figure 4 clarifies this point.[13] In Figure 4, the quantity of credit is on the horizontal axis and the cost of credit is on the vertical axis. D_0 represents the demand curve for credit. Let r^* be the benchmark risk-free real interest rate which we

[11]For comparison, the graph shows the indices whose average value in 1996 is equal to 100.

[12]The Lane *et al.* (1999) pointed out that the degree of monetary tightening in the East Asian countries was not as draconian as in the cases of other countries facing exchange rate crisis. For example, the growth rate of real money in Mexico declined by almost 26 percent in 1995. Dollar and Hallward-Driemeier (1998) also provides micro evidence that shows only weak support of a credit crunch story. Using the survey results of 1,200 manufacturing firms in Thailand, they concluded that the fall in demand, not the restricted access to credit, was the main constraining factor in slowing down the Thailand economy.

[13]This graphical exposition is borrowed from Hubbard (1998).

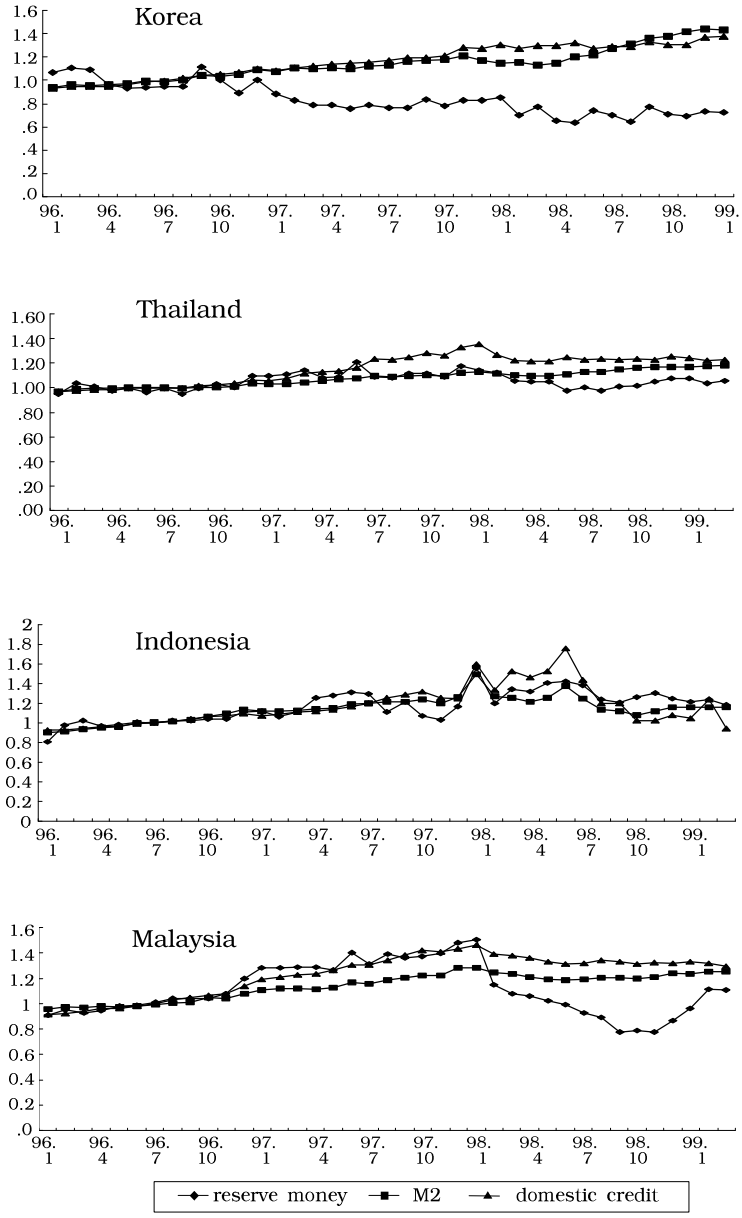

FIGURE 3

REAL MONEY AGGREGATE INDICES

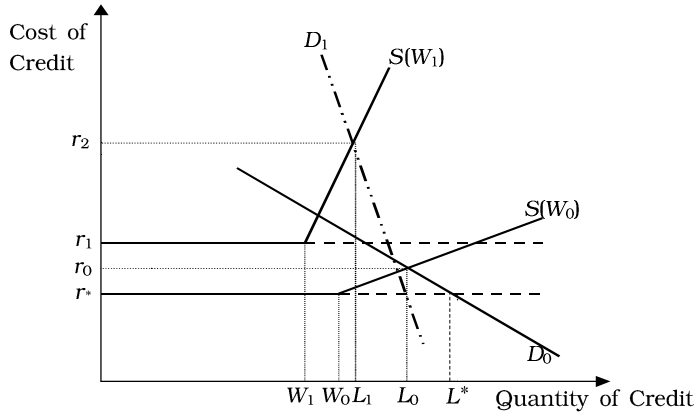

FIGURE 4
CREDIT CRUNCH

assume monetary policy can affect. In a perfect capital market, the supply curve of credit is a horizontal line at r^*. The equilibrium quantity of credit is equal to L^*.

However, in an imperfect capital market, the availability of the firm's internal funds or collateral affects the shape of the supply curve. Information asymmetries between lenders and borrowers lead to adverse selection and moral hazard problems. As a consequence, the shadow cost of external financing or uncollateralized borrowing should be higher than internal financing as lenders want to be compensated for information or agency costs. Let W_0 be the amount of internal funds or collateral (net worth) of a representative firm. In an imperfect capital market, $S(W_0)$ becomes the supply curve. Up to a level of credit, W_0, the firm does not need to rely on external financing and the opportunity cost of borrowing is equal to r^*. For borrowings greater than W_0, the cost of uncollateralized external financing exceeds that of internal financing. The upward slope of $S(W_0)$ reflect these marginal information costs in external financing. Under capital market imperfection, the equilibrium quantity of credit L_0 is less than the first best outcome L^* and the cost of credit r_0 is higher than r^*.

After the crisis erupts, we expect the demand curve D_0 to shift to the left and clockwise to D_1. Needless to say, firm's investment demand must fall drastically. However, we think the shift of the demand curve cannot be large since investment demand is only a

part of the demand for credit. Facing increasing uncertainties, precautionary demand for credit increases in the short run to prepare for the anticipated loan recall, loss of trade credit arising from mass bankruptcies of business partners, expected increase in interest rates and operating costs, etc. Financial costs in servicing existing debt also increase significantly as interest rates soar, making the demand curve very inelastic to the changes in interest rates.

After the crisis, the supply curve $S(W_0)$ shifts upward to $S(W_1)$. The shift can be divided into three parts conceptually. The tight monetary policy increases the benchmark interest rate from r^* to r_1. In addition, the recession reduces business profit and the asset value. Therefore, the amount of internal funds and the value of collateral, W_0, shrink to W_1.[14] The tight monetary policy in the midst of the crisis can aggravate the decline further.[15] Finally the marginal information costs, the upward slope of $S(W_1)$, increase following mass bankruptcies and sharp reduction of the value of collateral. As a result, the equilibrium interest rate rises from r_0 to r_2. However, given the interest inelastic demand curve D_1, the decline in the quantity of credit from L_0 to L_1 can not be large. This analysis suggests that the changes in interest rate, not the quantity of monetary aggregates or credit, may be a better measure of credit conditions for the duration of the crisis.[16] The mere fact

[14]Bernanke, Gertler and Gilchrist (1996) called this as a financial accelerator effect. Kyotaki and Moore (1997) provide a model for a financial accelerator effect.

[15]This mechanism is referred to as the balance sheet channel of the monetary squeeze, which emphasizes the depressing effect on borrowers' collateral and internal funds. The other channel of a credit crunch is the bank lending channel, which assumes the supply of bank credit as an imperfect substitute for other forms of credit. Tight monetary policy, by reducing the supply of bank loans relative to other forms of credit, is likely to increase the external finance premium and reduce real activity. For a survey, see Bernanke and Gertler (1995). We believe the bank lending channel played a less important role in the East Asian crisis where the supply of loans from non-depository institutions collapsed more relative to those of depository institutions.

[16]If the fall in demand for credit, not the supply of credit, was the main factor in causing a sharp recession, interest rates in these countries must have declined. Also, the fact that corporate bond issue increased while domestic credit by the banking sector decreased in Korea can be indirect evidence that the supply of credit, not the demand for credit, is a

that the growth rate of credit did not drastically slow down may not be sufficient to dispute the existence of a severe credit crunch.[17]

Figure 5 shows the behavior of nominal and real interest rates in Indonesia, Korea, Malaysia and Thailand.[18] In Indonesia, even though nominal interest rates were increased significantly, real interest rates were consistently negative from late 1997 to mid 1998 due to high inflation. Only since July 1998, it became positive as the authorities regained monetary control and became significantly positive. In Korea, Malaysia and Thailand, a high but brief surge of inflation made real interest rates low immediately after the crisis erupted. But soon after the onset of the crisis, real interest rates soared to a high, by historical standards. The increase was most prominent in Korea, where the real interest rate rose from 7.2% prior to the crisis to 20% at its peak. In Malaysia and Thailand, the increase was relatively mild, from 5% to 10% in Malaysia and from 5% to 14% in Thailand.

Lane *et al.* (1999) argue that these initial increases in real interest rates were not untypical compared with those seen in other crisis-hit countries. However, even though it is true that the magnitude of increase was not exceptional, high interest rates imposed a crushing burden on real economic activity. The high leveraged corporate structure made these economies extremely vulnerable to the increase in interest rates. Especially, business investment demand collapsed.[19] Moreover, the interest rates in Figure 5 underestimate the severity of the credit crunch. They correspond to the increases of the benchmark interest rate, i.e.

constraining factor.

[17]Moreover, a phenomenon labeled "flight to quality" implies that the monetary aggregate, *M*2, is not an adequate measure of credit condition during the crisis. Facing massive bankruptcies of non-bank financial institutions, depositors switch their savings to relatively safe banks. Accordingly, even though reserve money and *M*3 declined, *M*2 increased in Korea.

[18]The nominal interest rate in Korea is the benchmark corporate bond yield with a 3 year maturity. For the other countries, one-month interbank interest rates are used. Real interest rates are constructed by subtracting a 3-month moving average of monthly CPI inflation rates (previous month, current month and one month ahead) from nominal interest rates.

[19]The fact that investment demand was highly interest rate sensitive is not contradictory to our early assumption that the demand curve for credit is inelastic to interest rates. Investment demand is only a part of the demand for credit.

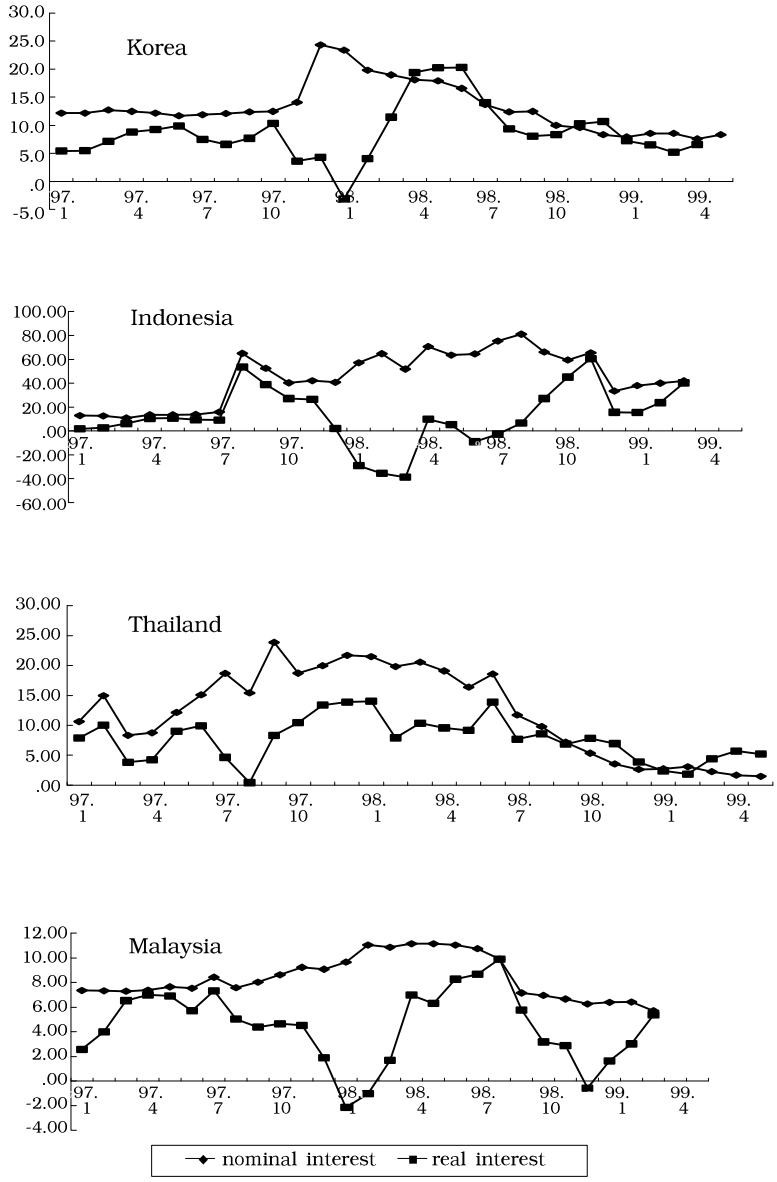

FIGURE 5

REAL INTEREST RATE

from r^* to r_1, in Figure 4. To truly evaluate the severity of the credit crunch, we have to measure the increase of interest rates which marginal firms are facing, i.e. the increase from r_0 to r_2 in Figure 4. Given the lack of adequate data that measure the interest rates prevailing at the secondary market, it is hard to evaluate rigorously the degree of the credit crunch in these East Asian countries. But there is ample anecdotal evidence that the credit crunch was widespread in these East Asian countries. For example, as shown in Figure 6, only the very large conglomerates with low bankruptcy probabilities were able to issue corporate bonds after the crisis erupted in Korea. The share of corporate bonds issued by the five largest conglomerates increased from 47% prior to the crisis to 87% in the first quarter of 1998.[20] There were many anecdotes showing that small and medium size firms did not even dare to sell their bonds in the market in the first half of 1998. As shown in Figure 7, the interest rate differentials between the corporate bonds issued by the five largest conglomerates and by the others widened from 0.12 percent prior to the crisis to 3.57 percent in March 1998. This gap still underestimates the risk premium because of the sample selection bias where only a few qualified medium sized corporations could sell their bonds in the market. Ding, Domac, and Ferri (1999) also document that the "flight to quality" phenomena were widespread and had negative impacts particularly on small-sized banks and enterprises in the other East Asian countries.

The initial tight monetary policy by the IMF was aimed at preventing the large currency depreciation from initiating depreciation-inflation spirals. In hindsight, the IMF clearly underestimated the negative effects of interest rate hikes in these highly leveraged economies. However, it seems hard to deny that some period of high interest rates must have been unavoidable in order to stabilize the exchange rates. Two channels had been important in achieving this goal. First, the increase in interest rates was called for mainly to stem the outflow of capital. The high interest rate definitely failed to restore foreign investors' confidence and bring back capital

[20]To prevent the concentration of the funds in the five largest conglomerates, the government started to regulate the maximum amount of corporate bonds issued by the five largest conglomerates that financial institution could hold from October 1998. Therefore, the figures in Figure 6 after October should be interpreted with care.

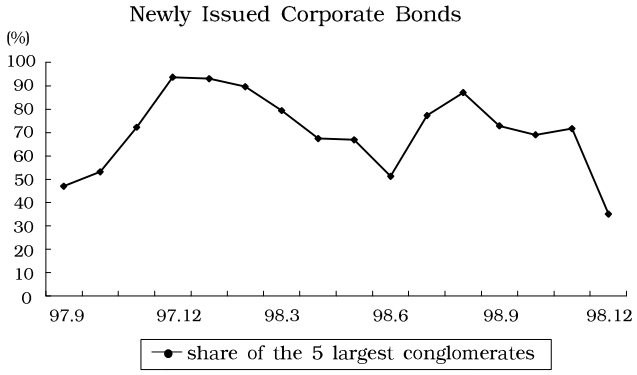

FIGURE 6

CORPORATE BOND ISSUED BY THE 5 LARGEST CONGLOMERATES IN KOREA

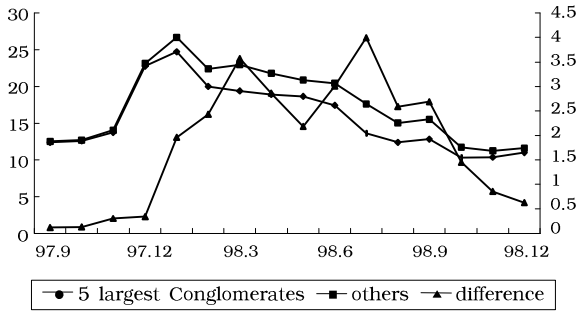

FIGURE 7

INTEREST RATE DIFFERENTIAL

inflows in the midst of the crisis. The Korean case is a good example. Korea maintained relatively strong capital control systems prior to the crisis, and therefore currency speculation played only a limited role in the Korean currency crisis. The large initial currency depreciation was mainly due to the demand for dollars from domestic financial institutions and corporations to service their pre-determined foreign debts. Unable to borrow dollars in the international capital market, they had to buy dollars at the domestic exchange market with the Korean won they had borrowed from the central bank. To prevent the vicious circle, the Bank of

Korea had to raise the discount window and thereby inevitably increased the market interest rates. Other alternatives might have been announcing moratorium or introducing strict capital controls to ration insufficient foreign reserves, whose long-run costs cannot be inconsequential. Considering this, raising interest rates seems to have been a costly but safe choice when the crisis was at its peak.[21]

Second, tightening the monetary policy contributed to a speedy adjustment of the current account. Ironically, the severe recession induced by the tight monetary policy was a main factor in reducing imports and rapidly improving current account balances in Korea, Malaysia and Thailand. Without a significant current account surplus, restocking foreign reserves and restoring foreign investors' confidence would not have been possible. In this regard, the essence of the IMF adjustment program is undeniably to stabilize the exchange rate market through belt-tightening in the crisis-hit countries.

The tight monetary policy, however, did not succeed in stabilizing the exchange rate market in all the countries. In Korea and Thailand, the exchange rate market started to stabilize from the second quarter of 1998 which allowed room for the government to relax the monetary policy. As we can see in Figures 3 and 5, loosened monetary policies in Korea and Thailand contributed to the steady decline of real and nominal interest rates in the second half of 1998. Their interest rates in the last quarter of 1998 were even lower than their pre-crisis level, inducing the recovery of real activities. In contrast, the 'virtual IMF' policy in Malaysia failed to stabilize the exchange rate market. After showing a brief sign of stabilization at the beginning of 1998, the riggit started to depreciate again and remained volatile until Malaysia introduced its own initiated policy in July 1998. As Figure 5 shows, the real interest rates started to fall only after the government started to regulate them and introduced the capital control.

The Malaysian case shows that the tight policy alone is not sufficient to restore exchange rate market stability. Stemming capital outflows and building foreign reserves by belt-tightening is not enough to calm down the panic. Resumption of capital inflows, especially private capital inflows, seems to be the key factor. Korea

[21]However, this does not imply that high interest rate policy is necessary for a prolonged time.

and Thailand benefited from official program loans by the IMF and other international financial institutions immediately after the crisis erupted. The Korean government also succeeded in rolling over short-term external debt of the banking sector in March 1998. Thanks to the private debt rescheduling, the proportion of short-term debt in Korea decreased from 60 percent to 21 percent which significantly alleviated liquidity problems. The debt rescheduling negotiation was relatively easy to accomplish because the external debts of Korea were predominantly borrowings by a small number of large financial institutions. In contrast, the 'virtual IMF' package of Malaysia did not benefit from official program loans. Its political instability and the government's capital control propensity probably deterred the resumption of private capital inflows. Debt rescheduling negotiations must have been harder to manage, since the main borrowers of external debts consisted of non-bank corporations. As a result, its short-term debt ratio did not change much in 1998. The lack of capital inflows implies that Malaysia had to achieve a more drastic current account adjustment and face a deeper contraction despite its pre-crisis economic environment being better than those of Korea and Thailand.

For a small country that cannot have an initiative in debt rescheduling or reduction, the Korean and Thai approach seems to work better than the Malaysian approach. Admitting bailouts of creditors and swallowing all costs by belt-tightening is a harsh but effective option to secure the resumption of foreign capital inflows for long-run recovery. However, we have to remember that this IMF approach that Korea and Thailand have taken required severe pains to debtor countries and is very unfair. In order to minimize costs and secure a fair distribution of damages, other mechanisms for bailing-in creditors and securing sufficient amount of liquidity injection to crisis-hit countries should be searched for in the future. The East Asian experience demonstrates, not disputes, the need for an international lender of last resort and international cooperation to alleviate painful adjustment of crisis-hit countries.[22]

The relaxed monetary and fiscal stance since the second half of

[22]It is true that the function of a lender of last resort causes a moral hazard problem. However, not every crisis is caused by a moral hazard problem, and the existence of a lender of last resort is essential for preventing system breakdown. For the debate on this topic, see Fischer (1999) and McKinnon(1998).

1998 contributed to the rapid decline of interest rates and the recovery in Korea and Thailand, where corporate and financial reforms have been progressing significantly. It should be emphasized again that expansionary macroeconomic policy alone cannot have a large impact if structural problems remain unsolved. In theory, easy monetary policy can alleviate a credit crunch problem by reducing the benchmark interest rates and increasing the value of collateral, i.e. by reducing r_1 and increasing W_1 in Figure 4. However, in order to reduce the risk premium, which raised financing costs to small-sized corporations, the marginal information costs, the upward slope of the supply curve in Figure 4 should be simultaneously lowered. Expanding money and credit without credible reform cannot achieve that goal.

For example, in Indonesia, uncontrolled monetary expansion not only delayed recovery but also brought the country to the verge of hyperinflation. Another example is the movement of real interest rates in Korea. Even though nominal interest rates in Korea were lowered steadily and sharply starting in the second half of 1998, real interest rates did not change much or slightly increased during the same period. It implies that the decline of the nominal interest rates was largely due to the decrease in inflation rates rather than monetary expansion. In turn, inflation expectation perhaps declined since the progress of structural reform in Korea offset the initial worries that the government would monetize bailing out costs for troubled financial institutions, reduced the sovereign default risk and thereby appreciated the exchange rates sharply. In this respect, the rapid decline of interest rates and fast recovery in Korea was the result of the progress in her structural reform as well as the expansionary monetary policy. Since the origin of the East Asian crisis has little to do with macroeconomic imbalances, it is understandable that macroeconomic policy alone cannot heal its wound. Eventually the recovery must depend on structural reform that tackles the roots of the problems that caused the crisis in the first place.

B. Fiscal Policy

Like monetary policy, tight fiscal policy was initially tried in the East Asian countries after the crisis erupted. Initially tight fiscal policy was introduced to improve current account balance by

increasing government savings and alleviate the need to squeeze private savings excessively. It also aimed at securing non-inflationary funds for financial restructuring. But from early 1998, the severity of the economic downturn made it necessary to expand fiscal stance. As the effectiveness of monetary policy was constrained by the credit crunch, fiscal policy had to play a greater role. As a result, budget deficits increased, not decreased, in these East Asian countries in 1998. As shown in Table 1, prior to the crisis, government budgets were in balance or in surplus in these countries. But in 1998, budget deficits in Indonesia, Korea, Malaysia and Thailand amounted to about -7, -5, -1 and -4.5 percent of GDP.

However, so far the fiscal expansion has not been as effective as the increased budget deficit figures suggest. Instead of being a discretionary change, they were mostly induced by the fall of tax revenues due to the severe economic downturn and the sharp exchange rate depreciation. According to Lane *et al.* (1999), changes in fiscal balance which were due to the economic environment instead of policy changes account for the lion's share of the actual budget deficits.[23] In fact, even though budget deficits were widened, the government consumption expenditures decreased, not increased, by 9 percent in Korea in 1998. Also, among government expenditures, the proportion of transfer payments increased due to the increase in demand for social expenditures. Because transfer payments have a smaller multiplier effect than government purchases of goods and services, the expansionary effect of the increased budget deficits must be limited.

Irrespective of its effectiveness in boosting the economy, budget deficits in these Asian countries are likely to grow in the near future. Unemployment problem will not be resolved any time soon and the demand for social expenditures will rise. More importantly, the government support is essential in financial restructuring, though the degree of the government intervention may vary across countries.[24] Considering the upcoming need for more government expenditures, it is fortunate that the East Asian countries had

[23]See table 7 in Lane *et al.* (1999).

[24]In Korea and Indonesia, financial restructuring is more supported by the government directly, while Thailand is using a more market-driven approach.

maintained near balanced budgets prior to the crisis. It makes it possible for these countries to allow for temporal budget deficits in the future without incurring negative side effects. This might be one of the characteristics that will allow the East Asian countries to recover faster relative to other crisis-ridden countries of the past.

Due to the expansionary fiscal policy, government debts increased significantly in these countries, thus managing them so as not to let them grow out of all proportion will be a serious challenge. For example, the central government debt was 13.6% of GDP in Korea in 1997 but it increased to 31% in 1998 and is expected to be about 40% in 1999. Still, these figures significantly underestimate the actual government liabilities. The consolidated budget balance in Korea does not include the quasi-fiscal and the extra-budgetary activities. For example, in 1998, the government issued about 35 trillion Korean won of "public bonds" through three public institutions—Korea Asset Management Company, Korea Deposit Insurance Company, and Employment Stabilization Fund—to buy non-performing loans from the financial industry and to pay unemployment benefits. The total amount issued is almost 50% of the regular budget. But these were not included in the consolidated budget deficits since the special funds were not classified as a part of the government when accounting. Needless to say, the government is held wholly responsible for servicing "public bonds" as well as the official government bonds. After including them, the actual government liability rose to 69.7%, not 31%, of GDP in Korea in 1998. It will rise to 74% in 1999. Even though this ratio is not high by OECD standards, the problem is that it is growing fast while the ratios of the advanced countries are declining. As soon as the crisis is under control, fiscal reform to contain budget deficits should take priority in these East Asian countries.

IV. Preliminary Assessment of the Adjustment Process

Since the crisis and recovery is still unfolding in this region it may be premature to make an assessment on the causes of the sharp contraction and uneven adjustment processes in these East Asian countries. Nevertheless this section tries to make a preliminary assessment and provide a summary of the adjustment processes based on our previous discussion.

A. Main Causes of Sharp Contractions

Many factors contributed to the sharp fall in economic activities in these countries. First, the reversal of foreign capital flows was quite sweeping. In the 1990s, almost two-thirds of all private capital flows to developing countries flowed into East Asia. Table 2 summarizes capital flows as a percentage of each country's GDP in the five East Asian countries during the 1990s.[25] The magnitude of capital inflows was remarkable. The most extreme cases were seen in Thailand and Malaysia. Capital inflows into these two countries averaged over 10% of GDP during the 1990s, and at one point reached 13% and 17% of GDP. However, capital inflows abruptly reversed in 1997 and 1998, again the magnitude was equally remarkable. For example, in Thailand, capital outflows reached 11% of GDP in 1997 alone. Therefore, between 1996 and 1997, Thailand experienced a sudden reversal of private capital inflows which amounted to about 20% of GDP. The other countries faced a similar fate.[26] It is no wonder that this large-scale shift in financial flows provoked sharp fall in investment and deep economic contractions.

Second, the high leverage ratio of the corporate sector in these economies made the balance sheet effect of exchange rate depreciation and interest rate increase more profound. The average corporate debt equity ratios were around 400% in Korea and estimated almost equally high in Thailand in 1996, which were well above the international standard.[27] Facing aggravated asset-liability structure, corporate firms sharply cut investment and production. Reduced net worth in turn exacerbated a credit crunch problem as discussed in Section III.

Third, implementation of financial restructuring in conjunction with stabilization policies reinforced the effects of the latter and

[25]The financial capital flows in Table 2 are not totally private. They include portfolio investment and direct investment by governments.

[26]According to IIF(1998), net financial inflows to the five hardest hit Asian countries — Indonesia, Korea, Malaysia, the Philippines, and Thailand — were $92.9 billion in 1996 and -$12.1 billion in 1997. The swing of $105 billion of capital inflows (from $93 billion inflows to $12 billion outflows) amounted to 11% of the pre-crisis dollar GDP of the five Asian countries.

[27]Average ratios of corporate debt to equity were 144% in Germany, 160% in Malaysia, 194% in Japan, 154% in Sweden, 90% in Taiwan, and 106% in the United States. Cited from Lane *et al.* (1999, p. 20).

sharply increased overall uncertainty and corporate bankruptcies. In Korea, 3 securities companies, 4 insurance companies, 17 merchant banks, and 5 out of 23 commercial banks were closed and many surviving banks had to be merged by the end of 1998. A tight schedule for the improvement of the BIS capital adequacy ratio has been imposed on the affected financial institutions. A similar degree of financial restructuring has taken place in Thailand. This in turn exacerbated the degree of the credit crunch. It is hard to deny that some period of tight macroeconomic policy and financial restructuring was unavoidable to stem capital outflows and to prevent depreciation-inflation spirals. However, their contractionary impacts were more huge than anyone, including the IMF, imagined.

B. Forces behind Recent Recovery

The sharp recession and the resulting decline in import in the first half of 1998 eventually led to drastic reversal in the current account position and the ensuing build-up of foreign reserves. It in turn allowed for the stabilization of the exchange rate and the reduction in interest rates. Furthermore, significant reduction in real wages, rental cost, and depreciated exchange rate helped the recovery of the competitiveness of exports. Recently, recovery of the stock market followed due to reduced interest rates and some inflow of foreign capital. In other words, the initial tight monetary policies achieved its goal and laid the ground for recovery, but with too high a cost in growth and employment.

This quick response to stabilization as well as expansionary policies was possible since the East Asian countries were more open and private-oriented. The crisis in East Asia was caused by private sector over-investment, not by public sector over-expenditure, and the adjustment of the private sector under the changed macroeconomic circumstance tends to be much quicker than that of the public sector. It is easy to see that the private sector's belt is politically easier to tighten than the government belt. Also, the recession in the domestic market could generate a better improvement in current account balances since these economies were more open and export-oriented. Table 3 clearly shows the degree of difference in the openness and private sector orientation between East Asian and Latin American economies. Mexico is a good example. In the 1982 crisis, Mexico was less open

TABLE 3

OPENNESS AND PRIVATE ORIENTATION IN SELECTED COUNTRIES

(unit: %)

Country	Year	Openness	Private Orientation
Indonesia	1996	40.8	14.6
Korea	1996	57.8	18.3
Malaysia	1996	158.0	22.6
Philippines	1996	65.8	18.5
Thailand	1996	69.1	16.1
Mexico	1982	21.3	30.0
	1995	32.7	16.1
Brazil	1982	13.8	9.1
	1995	14.2	14.0
Argentina	1982	16.9	20.3
	1995	14.7	14.5
Chile	1982	30.0	36.0
	1995	49.0	19.9

Notes: 1) Openness=(Export + Import)/GDP
2) Private Orientation=Government Expenditure/GDP

Source: IMF, *International Financial Statistics*.

and more public sector dominated. After the crisis, her current account balance improved due to severe recession but the change was not as fast as those of the East Asian case.[28] The current account balance was -7.9% of GDP in 1981, -3.8% in 1982 and 4.3% in 1983. In contrast, in 1994 Mexico had a smaller budget deficit and became more open after the NAFTA was passed. In the 1994 crisis, the real GDP growth fell from 4.5% in 1994 to -6.2% in 1995 and the current account deficit improved sharply within a year from -11% to -0.6% of GDP. This high sensitivity of market response was made possible because the economy became more open and private-oriented. Unless the economy is private-led and export-oriented, we believe having a current account surplus of more than 10% of GDP as Korea and Thailand did in 1998 would be virtually impossible.

Third, the favorable turn in the external environment has also

[28]Her real GDP growth rate was 8.5% in 1981 but it dropped to -0.6% in 1982 and -3.5% in 1983.

helped towards a quick recovery of these economies. The appreciation of the Japanese yen with three consecutive cuts in US interest rates from mid 1998 allowed Korea and Thailand to cut domestic interest rates substantially without destabilizing their exchange rates. The Japanese yen appreciation also reduced the possibility of Chinese yuan devaluation which indirectly contributed to the stabilization of the exchange market in Korea and Thailand.

V. Policy Implications and Concluding Remarks

This paper reviewed the adjustment processes of the five East Asian countries following the currency crisis that erupted in Thailand in 1997. After paying enormous economic and social costs, the real wages have been substantially reduced, interest rates have gone down below the pre-crisis level, currency overvaluation has been corrected perhaps somewhat excessively, and rental costs have plummeted in these countries. These developments now provide a much more favorable business environment in these economies that had been suffering for a while from the weakening competitiveness of their exports and structural inefficiencies due to the rigidity in the labor and financial markets.

Nevertheless, there still remain formidable constraints to recovery. Among other things, there are: Persistent credit crunch due to the incomplete financial restructuring; weakness in the corporate financial structure and over-capacity; and lack of foreign capital inflow. In connection with these constraints, the following policy implications may follow from the review and comparisons of the adjustment experiences of these economies so far.

First, accommodative macroeconomic policies will be needed to continue for a while (perhaps until a clear sign of inflationary pressure develops) to prevent weakening of the corporate financial structure. Since the recovery path is still fragile and the corporate sector of these economies, particularly in Korea and Thailand, is highly leveraged, a tight monetary policy would accelerate corporate bankruptcies and asset deflation. This would then impose a heavier burden in resolving financial instability.

However, striking the right balance between the accommodative macroeconomic policies and driving timely financial and corporate sector reforms will be an important challenge to these economies.

In practice, the accommodative macroeconomic policies can give signals to corporate firms to be complacent and hang on to their over-capacity. From the experience of Indonesia, it became clear that the expansionary monetary policy without necessary financial and corporate sector reforms was ineffective in bringing recovery while causing hyper-inflation. From the experience of the Philippines, we can glance at the importance of the quality and sustainability of recovery. What shielded the Philippines from the full brunt of the regional crisis was its structural reform, particularly the financial sector reform, which had been steadily pursued from the early 1990s. As the root cause for the financial instability in this region was structural weaknesses in the corporate and financial sector, full recovery of these economies will be realized only after these problems have been properly resolved.

Second, resumption of capital inflow will be a key factor for the fast recovery of these economies. Malaysia adopted a less tight monetary policy than Korea did in the first half of 1998, but her economic contraction was at least as severe as Korea's and her exchange market remained more unstable. If Malaysia had been able to receive external financial assistance organized by the IMF program or other institutions, it could have avoided such a severe economic contraction. Judging from this experience, the right mix for the economies in this region may have been a less strict stabilization policy package with a larger amount of financial assistance that is heavily front-loaded. Since it would be hard to expect quick resumption of private capital inflow to a crisis-hit country, there is an urgent need to expand the available financial resources through multilateral and regional financial institutions.

In this regard, it is encouraging to see recent discussions on the expansion and establishment of emergency financing facilities such as the contingent financing facility under the IMF and the enhancement of its role as an effective lender of last resort in the international capital market (Fischer 1999; and McKinnon 1998). Discussions on the establishment of regional financing facilities are also an encouraging step toward this end. However, it is equally important in these discussions to include schemes for involving greater participation of the private sector so as to facilitate the orderly workout of debt rescheduling, fairer loss sharing, and quicker resumption of private capital inflows.

Third, more serious and comprehensive efforts are necessary to

encourage the development of the capital markets in these economies. One of the key factors in achieving successful corporate restructuring which will facilitate full economic recovery, particularly in Korea and Thailand, is to reduce the corporate leverage ratio. Substantial inflow of foreign capital, particularly foreign direct investment, will be necessary to this end, especially when the prospect of the new domestic funding is poor as it is now.

However, given the huge size of the overall debt of the corporate firms in these economies, this ultimately will have to be achieved by a substantial conversion of debt to equity and the change of domestic financial market structure to support it. Corporate financial structure mirrors the structure of the financial market and patterns of financial savings of households in an economy. Improvement in corporate financial structure could hardly be expected unless there is concomitant change in the domestic financial market structure. Therefore, serious efforts have to be made to expand the equity market in these economies by encouraging collective investment vehicles, including mutual funds and investment and trust businesses. Further stabilization of domestic interest rates will play a crucial role for this purpose.

Finally, we may draw some lessons for reference in future currency crises. The experiences of the East Asian economic adjustment suggest that policy packages to be imposed on the crisis-hit countries will need to be better tuned to individual market circumstances. In economies such as Korea and Thailand, which are quite open, private sector oriented, and have a very high leverage ratio in the corporate sector, the sensitivity to a stabilization package could be higher than in other economies.

The main purpose of the stabilization policy in the economies facing currency crisis is belt-tightening and strengthening of the foreign debt service capacity. But in these economies, the stabilization policies may far overshoot their original goals. Sharply increased interest rates and depreciated exchange rates in the initial stage have enormous balance sheet effects on highly leveraged economies and lead to drastic decline in domestic investment and employment. Furthermore, the stabilization policy package that is implemented in conjunction with the tight schedule of bank restructuring can accelerate the credit crunch and systemic corporate bankruptcies. This tight monetary policy is inevitable to prevent further deterioration of foreign exchange market stability in

the earlier stages of the currency crisis. But here again, the maintenance of a careful balance between the conflicting goals of stabilizing the exchange rates and preventing massive bankruptcies and rapid aggravation of financial instability is essential to avoid severe economic contraction and resulting social problems.

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