THE ROLE OF BANK LOANS FOR ECONOMIC DEVELOPMENT: AN IMPLICATION FROM EAST ASIAN EXPERIENCE*

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ABSTRACT

It is now widely recognized that a large fraction of short-term external liabilities was one of the main reasons why the East Asian countries had the serious crisis. In this paper, we first show an empirical evidence that middle-term and long-term commercial bank loans were less mobile forms of external liabilities during the East Asian crisis. We then present a simple theoretical model where the vulnerable financial structure in developing countries might emerge as a result of efficient monitoring activities by competitive private banks. In the model, we assume both asymmetric information and liquidation risk in the international financial market. The existence of asymmetric information calls for the role of a short-term lender in monitoring borrowers' performance. The result is consistent with a finding that a large fraction of external bank debt had been financed by short-term loans in a large number of developing countries.

1. INTRODUCTION

It is now widely documented that a large fraction of short-term external liabilities was one of the main reasons why the East Asian countries had the serious crisis in 1997. A large number of studies suggested that otherwise solvent East Asian countries (say, Thailand, Indonesia, and Korea) suffered from a serious short-run liquidity problem when the available stock of reserves became low relative to the overall burden of external debt service (see, for example, Corsetti, Pesenti, and Roubini (1998), Radelet and Sachs (1998), Rodrik and Velaso (1999), and Ito (1999)).[1] They also indicated that the term structure of debt could be an indicator for financial crisis and capital flow reversals.

A piece of time-series evidence suggests that the degree of post-crisis capital mobility in East Asia was quite different depending on whether capital flows were direct investment, portfolio investment, and commercial bank debt. For example, Table 1 reports the quarterly data series of IFS (IMF, *International Financial Statistics*) to show how capital inflows to the East Asian countries (that is, Thailand, Indonesia, Korea and the Philippines) changed before and after the crisis in three forms of capital inflows: direct investment, portfolio investment and bank loans. The table suggests that before 1997, almost all forms of net private capital inflows steadily expanded throughout the East Asian countries except for a few periods.

However, it also indicates that inflows of both bank loans and portfolio investment turned to be negative after the crisis that is, the fourth quarter in 1997 in these East Asian countries.[2] In particular, except for the Philippines, inflows of bank loans took large and persistent negative values after the crisis. This implies that the crisis in 1997 was largely attributable to significant amount of bank loan withdrawal from the East Asian countries.

On the other hand, except for Indonesia that had experienced significant inflows of direct investment before the crisis, inflows of direct investment did not decline in the East Asian countries after the crisis. Instead, in Thailand, inflows of direct investment made a steady increase after the crisis. Even in Korea, inflows of direct investment were quite stable after the crisis. This implies that the East Asian crisis took place because external liabilities were financed by mobile capital flows, particularly by com-

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1 Of course, these studies also proposed that the short-run liquidity problem was not the only reason for the East Asian crisis. For example, Krugman (1998) stressed that the moral hazard under bailout policies was another important source for the crisis.

2 The only exception is portfolio investment in Thailand that kept positive after the crisis.

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mercial bank debt.

In domestic financial markets, banks are known as one of the most prominent means of channeling investment capital to its highest return uses (see, for example, Patrick (1966), Cameron (1967), Goldsmith (1969), McKinnon (1973) and Shaw (1973) for their classical studies). Through providing liquidity and permitting the efficient pooling of risk, their activities alter social composition of savings so as to enhance capital accumulation.[3]

As delegated monitors, they also specialize in gathering information about firms and reduce corporate myopia through overcoming the problems associated with adverse selection, moral hazard, and costly verification (for example, Diamond (1984)). In particular, several studies emphasized a special role of banks not only in selecting borrowers but also in monitoring their ex-post performance (see, among others, Aoki (1994) and Hoshi, Kashyap, and Scharfstein (1991) that investigated how banks played such roles in Japan).

Given other factors, the banks' monitoring activities would have a positive impact on economic growth through solving the problems associated with informational asymmetries.[4] However, if efficient ex-post monitoring activities make the debt maturity composition shorter, they can increase the possibility of a liquidity shortfall in the sense of Diamond and Dybvig (1983) when panicking external creditors become unwilling to roll over existing short-term credits. In particular, without prudential regulation nor safety net, the possibility of liquidity problems can be high for international private bank loans (see, for example, Sachs, Tornell and Velasco (1996) and Chang and Velasco (1998) for recent studies on the bank run in the international financial market).

In sections 4, 5, and 6 of this paper, we present a simple theoretical explanation on why efficient monitoring activities by banks can increase the possibility of a liquidity shortfall in the competitive international market. The theoretical model is a small open economy version of Diamond (1991, 1993) who formulated the choice of loan's term structure by private firms under asymmetric information.[5] In the model, there exists a liquidity risk of loss of control that is costly for the domestic borrowers. Thus, when the borrowers' control rent is large, long-term debt can be preferred by the firm to avoid the liquidity risk.[6] However, when there exists asymmetric information between lenders and borrowers, short-term debt lowers a good borrower's expected financing cost. Thus, when a new arrival of credit information is highly possible, short-term debt is less costly for borrowers (see Flannery (1986)).

Noting that efficient monitoring activities increase the advantage of using new information arrival, the latter result has an important implication. That is, to the extent that liquidity risk is small, efficient monitoring activities tend to make the debt maturity composition shorter. Without unnecessary liquidation, short-term loans with efficient monitoring would have a positive effect on economic growth. However, when neither prudential regulation nor safety net are established well, efficient monitoring activities can increase the possibility of having catastrophic liquidity problems in the international capital market.

In the following sections, we first show that middle-term and long-term commercial bank loans were less mobile forms of external liabilities in East Asian crisis but that a large fraction of external bank debt had been financed by short-term loans in a large number of developing countries. We then present a simple theoretical model where the vulnerable financial structure in developing countries might emerge as a result of efficient monitoring activities by competitive private banks. The existence of asymmetric information calls for the role of a short-term lender in monitoring borrowers' performance. However, since short-term debt can be a source of liquidity problems, total effects of efficient monitoring on economic welfare might be largely reduced when it increases the possibility of a liquidity shortfall.

In the 1990s, globalization of financial markets expanded the volume of private capital flows to developing countries. In particular, the miraculous economic success of East Asia in the first half of the 1990s attracted much of world private capital to the region. As a result, the East Asian countries (say, Thailand, Indonesia, and Korea) accumulated significant amount of unhedged short-term ex-

3 In general equilibrium framework, the connection between financial intermediation and growth was investigated by Greenwood and Jovanovic (1989), Bencivenga and Smith (1991), Obstfeld (1994), and Greenwood and Smith (1997). See also World Bank (1989) and Fry (1995) for their survey.

4 Empirical studies by Jung (1986), Roubini and Sala-i-Martin (1992), Antje and Jovanovic (1993), and King and Levine (1993a, b) documented a positive correlation between a variety of measures of financial activity and economic development. However, the empirical findings are indecisive on causality between financial activity and economic development.

5 The model is also based on Fukuda, Ji, and Nakamura (1998) and Fukuda (2000).

6 Another case where long-term debt may be preferred by borrowers is that borrowers have moral hazard problem. See Rajan (1992).

ternal liabilities, particularly short-term commercial bank debt before 1997. Our theoretical model can explain why the East Asian countries accumulated such a large amount of short-term external liabilities.

The paper proceeds as follows. Before presenting a theoretical model, section 2 first shows that middle-term and long-term commercial bank loans were less mobile forms of external liabilities. Section 3 then focuses on the role of monitoring in explaining these findings. Section 4 explains a basic structure of our theoretical model and section 5 specifies long-term and short-term debt contracts. Section 6 investigates the maturity choices by all borrowers and shows that the vulnerable financial structure in developing countries might emerge as a result of efficient monitoring activities by private banks. Section 7 shows that a large fraction of external bank debt had been financed by short-term loans not only in the East Asian countries but also in a large number of countries. Section 8 discusses how our main results will change when we change one of key assumptions in the model. Section 9 summarizes our results and refers to their policy implications.

2. GROWTH RATES OF BANK LOANS TO EAST ASIA

As we discussed in introduction, a large number of studies suggest that a large fraction of mobile external liabilities was one of the main reasons why the East Asian countries had the crisis and capital flow reversals in 1997. In particular, the East Asian countries accumulated significant amount of international commercial bank debt before 1997, for which foreign lenders suddenly refused to roll over in 1997.

However, if we look at the time-series data of international bank loans in details, the degree of capital mobility before and after the crisis showed remarkably different features depending on their terms to maturity. For example, based on the BIS data, Table 2 reports the semi-annual growth rates of international bank loans to the East Asian economies before and after the crisis for three different types of maturities: maturities up to and equal to one year, maturities over one year and up to two years, and maturities over two years.[7]

It suggests that before 1997, international bank loans to the East Asian economies steadily expanded in almost all terms to maturity, particularly in Thailand, Indonesia, and Korea. For example, define 'short-term' by terms to maturity was up to and equal to one year, 'middle-term' by terms to maturity was over one year and up to two years, and 'long-term' by terms to maturity was over two years. Then, in Thailand from 1994 to 1995, we can see that the average semi-annual growth rate of short-term loans was close to 20% and that those of middle-term and long-term loans were slightly higher than 20%. Similarly, looking at the semi-annual growth rates from 1994 to 1996, we can find that both short-term and long-term loans on average grew about 10% in Indonesia and about 15% in Korea.

The financial crisis changed the steady trend of bank loans in East Asia. However, after the crisis, significant decline of bank loans occurred only for short-term loans, that is, loans whose terms to maturity was up to and equal to one year. For example, in Korea, the semi-annual growth rate of short-term loans was -16.12% in December 1997 and -44.23% in June 1998. But, during the same period, the semi-annual growth rates of middle-term and long-term loans were still significantly positive in Korea. Similarly, almost all of the other East Asian economies experienced significant decline of short-term loans in December 1997 and in June 1998. However, except for Thailand in December 1997, they experienced no serious decline of middle-term and long-term loans during the same period. Instead, several East Asian economies experienced significant increase of middle-term and long-term loans during this period.

In general, liquidity problems emerge when panicking external creditors become unwilling to roll over existing credits. Thus, if panicking external creditors could cancel their long-term contracts, say, by paying cancel fees, liquidity problems might have happened even when external liabilities were financed by long-term loans. However, the above evidence in the East Asian economies suggests that like direct investment, long-term commercial loans were less mobile capital flows in the international capital market. This may imply that if a large fraction of international commercial bank debt had been financed by long-term bank loans, the East Asian crisis might not have taken place as the form of a liquidity shortfall.

3. THE ROLE OF BANKS

As we showed in the last section, middle-term and long-

7 The data sources are BIS, *The Maturity, Sectoral and Nationality Distribution of International Bank Lending*, various issues, from 96.6 to 97.12 and BIS, *International Banking and Financial Market Development*, August 1998, for 98.6.

term commercial bank loans were less mobile forms of external liabilities in the sense that they never declined even after the financial crisis. However, a large fraction of external bank debt had been financed by short-term loans in the East Asian countries. The evidence may partly be influenced by regulatory factors, say, the domestic government regulations, the BIS risk-weights, and so on. But, the world-wide evidence cannot be totally explained by the regulatory factors.

The purpose of the following theoretical analysis is to present a simple theoretical model where the vulnerable financial structure in developing countries might emerge as a result of efficient monitoring activities by competitive foreign private banks. When the domestic borrowers have private information on the characteristics of the projects they wish to finance, the foreign lenders need to monitor their borrowers to avoid adverse selection (by ex-ante monitoring), moral hazard (by interim monitoring), and costly state verification (by ex-post monitoring). However, the monitoring is usually costly unless lenders can receive a reliable signal from the borrowers.

Elaborating on the seminal work of Leland and Pyle (1977), Diamond (1984) and Ramakarishnan and Thakor (1984) showed that, under certain conditions, there exist economies of scale for lenders to reduce information costs and the costs of duplicating monitoring. When there exist economies of scale, it is desirable for primary lenders to delegate the monitoring to a specific financial intermediary rather than to perform it individually. Diamond pointed out that banks are typical financial intermediaries of such delegated monitors.[8]

Given other factors, the bank's monitoring is considered economically valuable. Ex ante monitoring can reduce the problem of adverse selection in a situation where outside investors are not as well informed beforehand regarding the profitability and risk potential of proposed projects, the managerial and organizational competence of the firm, and the like. Interim monitoring may be a necessary response to the problem of moral hazard arising from situations in which the interests of investors and borrowers do not necessarily coincide.

Some ex ante monitoring can be performed by investment banks by venture capital firms and so on. Interim monitoring may also be engaged by rating companies in that they keep track of the changing financial state of the firm. However, directly placed debt (commercial paper) is usually a contract with terms (covenants) and loan-granting decisions that depends only on public information including the borrower's track record. On the other hand, the contract of a bank loan uses this information plus information from costly monitoring of a borrower's actions to condition the decision to grant a loan or to condition the loan's covenants. Thus, even in the international financial market, monitoring of private information can be most efficiently delegated to banks rather than collected by other financial institutions and many individual investors.

In the following model, we consider the choice of bank loan maturity in such an international financial market. In particular, we investigate how the efficiency of banks' monitoring can affect the choice of bank loan maturity. Without a liquidity shortfall, the choice of bank loan maturity in the international market is similar to that in the domestic market. However, since short-term debt can be disguised relatively more easily than long-term debt, international lending is found to be sensitive to the term structure of debt. In particular, since neither prudential regulation nor safety net (say, deposit insurance) are established well in the international market, a liquidity shortfall is more likely to happen in the competitive international financial market when bank loan maturity becomes shorter.

4. THE THEORETICAL MODEL[9]

The following analysis considers a small open economy version of Diamond (1991, 1993). In the small open economy, domestic borrowers (say, domestic firms or domestic financial institutions) need to fund their indivisible investment projects from foreign banks. As in McKinnon and Pill (1996) and Krugman (1998), we assume that domestic borrowers directly own capital and engage in investment projects. Strictly speaking, the assumption may be restrictive for domestic financial institutions because they generally lend money rather than buying capital assets outright. However, lending to a very highly leveraged firm that engaged in risky project is de facto very much like buying the capital directly.

In the following model, there are three dates, 0, 1, and 2. All projects are long-term projects that needs two periods to yield a cash flow. They require the fixed amount

8 See also Krasa and Villamil (1992) for a recent contribution on this issue.

9 The following theoretical discussions are based on Fukuda, Ji, and Nakamura (1998) and Fukuda (2000). See the original papers for their analytical details.

of K in capital at date 0 and produce cash flows only at date 2 (none at date 1). At date 0, each borrower has no internal (domestic) fund nor outside equity. Thus, at date 0, he needs to fund external debt of K from foreign banks for the project.

Both domestic borrowers and foreign lenders (that is, foreign banks) are risk neutral. Foreign banks need money only at date 2. They have a constant returns-to-scale investment technology that returns R per unit invested per period. One unit invested at date 0 returns R units at date 1; and if this is invested until date 2, the terminal value is R^2. There are many potential foreign banks who all observe the same information. Thus, borrowers face a competitive international loan market at each date, and can borrow as long as lenders receive an expected return of R per period, per unit loaned.

When successful, each borrower's project yields a cash flow of X at date 2. It also produces a non-assignable control rent of C if the management has control right at date 2.[10] Examples of the non-assignable control rent might be the manager's desire to keep his business going, the manager's consumption of perquisites, or the manager's disutility from dismissing long-standing employees. We assume that $X > R^2K$ and $C > 0$.

Although no cash flow is produced at date 1, the project can be liquidated at date 1 for a liquidation value of L. Because $C > 0$, no borrowers have an incentive to liquidate their project by themselves. However, foreign banks liquidate their borrower's project at date 1 either when its expected present value is less than L or when a financial panic occurs against the borrower. If a project is liquidated, it produces no cash flows nor control rents at date 2. In addition, the liquidation value of L is assumed to be less than RK. Thus, a successful project always yields a higher cash flow when not liquidated.

There are two types of borrowers; type G borrower and type B borrower. The two types of borrowers differ only in the probability that their projects are successful at date 2. The types of borrowers are characterized as follows.

Type G borrower (good borrower): The project succeeds for sure at date 2.

Type B borrower (bad borrower): The project returns succeeds with probability q but fails with probability $1-q$, where $qX < R^2K$.

Because the control rent of C is positive, no borrowers never liquidate their project when they have the control right to force the liquidation. However, since $X > R^2K > qX$, the type B borrower's project has a negative net present value in terms of cash flows. Thus, if foreign banks would identify type B borrowers, no type B borrowers could raise their funds.

A key assumption in the following model is that project's ex ante prospects are private information observed only by the domestic borrower. No one but the borrower knows his own type. Thus, foreign banks cannot identify type B borrowers ex ante.

Each foreign bank's information set on borrowers' type is as follows. At date 0 (the initial period), a foreign bank only knows that its domestic borrower is type G with probability f and type B with probability $1-f$. We assume that

$$(1)\quad R^2K \leq [f+(1-f)q]X.$$

This assumption implies that on average, the project has a positive net present value in terms of cash flows. The assumption is realistic for developing countries with high growth rates such as the East Asian economies before the crisis.

At date 1, each foreign bank's monitoring partially reveals types of domestic borrowers. That is, the monitoring identifies some of type G borrowers, but it cannot identify all of borrowers. Define e as the probability that the monitoring identifies the type of type G borrower at date 1. Then, given the above assumptions, the Bayes law implies that a borrower whose type was not identified at date 1 is type G with probability $(1-e)f / [(1-e)f + (1-f)]$.

The larger e is, the more efficient the foreign banks' monitoring is. Thus, the efficient monitoring makes the percentage of unidentified type G borrowers lower. In general, it is important for the suppliers of funds (or their agents) to monitor borrowers in order to overcome the problems associated information asymmetry and imperfection in the financial market. However, the revealed information at date 1 is not verifiable so that we cannot write contracts contingent on it in the international capital market. Thus, only when short-term loan is chosen, the terms of refinancing at date 1 will depend on whether foreign banks can find out types of borrowers or not at that date.

10 Financial contracts in the case where the manager has a non-assignable control rent have been extensively discussed by Aghion and Bolton (1992), Hart and Moore (1994), Von Thadden (1995), and others.

5. LOAN CONTRACTS

(i) Long-term loan

Long-term loan is bank debt floated at date 0 that matures at date 2, with no refinancing at date 1. The face value r^L of this debt is set, so that foreign banks can get expected return of R^2 per unit invested. Under the assumption that $qX < R^2K \leq [f+(1-f)q]X$, we can verify that the equilibrium with long-term loan is a pooling equilibrium, realizing that debt is repaid with probability $f+(1-f)q$. Thus, as long as $r^L \leq X$, the face value of a long-term loan is given by

$$(2) \quad r^L = R^2K / [f+(1-f)q].$$

Equation (2) implies that the lower is f, the higher is the promised interest r^L, owing to the higher default rate of type B's. In other words, reflecting a risk premium, the long-term interest rate becomes higher as the proportion of type B borrowers becomes larger.

Recall that at date 1, each foreign bank's monitoring might reveal information about some of type G borrowers. However, the information does not influence the face value of long-term loan. Therefore, the payoff of a type G borrower with long-term loan is equal to

$$(3) \quad \Pi^L_g = X + C - r^L = X + C - R^2K / [f+(1-f)q].$$

(ii) Short-term loan

Short-term loan is bank debt financed at date 0, maturing at date 1 with face value r^1. The date 1 repayment comes either from refinancing at date 1 or from the proceeds of liquidation at that date. If the short-term loan is rolled over at date 1, the refinanced short-term loan matures at date 2. The refinanced short-term loan at date 1 has different face values depending on the realization of date 1 information. Each face value of short-term loan issued at date 1 is set so that foreign banks at date 1 get an expected return of R per unit invested given the information about a borrower at that date.

The face value of short-term loan issued at date 1 is easily determined for borrowers whose type was identified as type G. That is, short-term borrowers whose type was identified as type G at date 1 are type G with probability one. Thus, unless a financial panic occurs, each of them can always refinance to pay the full face value of their date 0 debt r^1. Noting that a new short-term loan maturing at date 2 is repaid with probability 1, the face value of this short-term loan issued at date 1, which is denoted by r^B, satisfies

$$(4) \quad r^B = r^1 R.$$

However, the determination of the face value of short-term loan issued at date 1 is more complicated for borrowers whose type was not identified. This is because even if no financial panic occurs, the borrowers might not be able to refinance to pay the full face value of their date 0 debt.

In the following analysis, we consider the case where foreign banks always choose liquidation when their monitoring cannot identify the type of borrowers at date 1.[11] In this case, foreign banks liquidate their borrower's project at date 1 either when their monitoring cannot identify the borrower's type, when their monitoring identifies the borrower as type B, or when a financial panic occurs in this lending market. We assume that even if the borrower was identified as type G, a financial panic occurs for him with probability $1-\theta$.

Since lenders can identify a type G borrower with the probability fe at date 1, the expected rate return for a date 0 short-term lender is $\theta fe\, r^1 + (1-\theta fe)L$, where L is a liquidation value of the project. Equating this to the one-period riskless return RK leads to $r^1 = [RK-(1-\theta fe)L]/(\theta fe)$. Thus, (4) implies that

$$(5) \quad r^B = [RK-(1-\theta fe)L]\, R / (\theta fe).$$

The payoff of a type G borrower with short-term loan is $X + C - r^B$ when the project is not liquidated at date 1, and 0 when the project is liquidated at date 1. Because ex ante probability that the project is liquidated at date 1 is θe at date 0, the expected payoff of a type G borrower with short-term loan at date 0 is

$$(6) \quad \Pi^s_g = \theta e(X + C - r^B) = \theta e(X + C - RL) - (1/f)R(RK - L).$$

Since all type G borrowers are identical at date 0, Π^s_g is common for all type G borrowers. It is easy to see that Π^s_g is increasing in e, that is, the degree of foreign banks' efficiency to sort out type G borrowers.

11 This case is more likely to happen when the bank's monitoring reveals type G borrowers.

6. THE MATURITY CHOICE BY BORROWERS

In our model, domestic borrowers choose the maturity of their external loans at date 0 in order to maximize their expected payoff. However, because $qX < R^2K$, choosing a maturity that only type B borrowers would prefer would reveal that the borrower was type B, and no loan would be made to him. Therefore, to the extent that the expected payoff rate of a type B borrower is positive, the maturity that is chosen by type G borrowers is also chosen by type B borrowers.

Assuming the existence of such a pooling equilibrium, this indicates that all borrowers choose short-term loan if $\Pi^{L}_{g} < \Pi^{s}_{g}$ but choose long-term loan otherwise. Thus, from (3) and (6), we obtain that all domestic borrowers choose short-term loan if and only if

$$(7)\quad (1-\theta)(X+C-RL)+\frac{(1-f)q}{[f+(1+f)q]f}R^2K < [(1-f)/f]RL.$$

The inequality (7) has two noteworthy implications for the terms to maturity in the international bank loans. The first is that given other parameters, an increase in θ makes (7) more probable. Since θ denotes the probability that a financial panic will not occur, this implies that foreign banks tend to choose short-term loan when they have optimistic confidence on the borrowers' financial conditions. The intuition is that the optimistic confidence reduces liquidity risk in terms of lenders' perception and makes long-term contract less attractive for lenders.

Because foreign lenders had some optimistic confidence on the pre-crisis East Asian economies, the result can explain why the East Asian economies had higher shares of short-term loans in the world standard before the crisis. It may also imply that some optimistic confidence on their future made the pre-crisis East Asian economies vulnerable to the crisis not only through increasing the total amount of external liabilities but also through making their terms to maturity shorter.

The second noteworthy implication is that given other parameters, an increase in e makes the inequality (7) more probable. Since the value of e is a proxy for the degree of monitoring efficiency, this implies that foreign banks with better monitoring ability tend to choose short-term loans. When there exists asymmetric information between lenders and borrowers, short-term debt can lower a good borrower's expected financing cost because of a possible arrival of good information. Thus, when lenders can make use of additional credit information arrival more efficiently by ex-post monitoring, short-term debt will be preferred in debt contract.

The latter implication is important in considering the choice of bank loan maturity because banks usually have the better monitoring ability than other financial intermediaries. That is, under the circumstances where borrowers believe that liquidity risk is small, the result predicts that the efficient monitoring activities tend to make the debt maturity composition shorter.

Without unnecessary liquidation, the efficient monitoring might have a positive effect on economic welfare. However, without prudential regulation nor safety net in the international financial market the reversal of capital flows can be associated with the term structure of foreign debt. As a result, the efficient banks' monitoring can increase the possibility that an otherwise solvent country may suffer a short-run liquidity problem when the available stock of reserves is low relative to the overall burden of external debt service.

7. MATURITY DISTRUBUTION OF BANK LOANS BEFORE AND AFTER THE CRISIS

(i) Shares of Short-term Loans in East Asia

As we saw in sections 1 and 2, the evidence in the East Asian economies suggests that like direct investment, long-term commercial loans were less mobile capital flows in the international capital market. This may imply that if a large fraction of international commercial bank debt had been financed by long-term bank loans, the East Asian crisis might not have taken place as the form of a liquidity shortfall. However, this type of hypothetical situation never happened in the East Asian economies before the crisis. Instead, in these economies, a large fraction of international commercial bank debt was financed by short-term commercial bank loans. For example, based on the BIS data, Table 3 reports the maturity distribution of international bank loans to the East Asian economies before and after the crisis for three different types of maturities.

Among the East Asian economies, Taiwan, Hong Kong, and Singapore had remarkably high shares of short-term loans whose terms to maturity were up to and equal to one year. Needless to say, these data are not enough to capture general situations in East Asia before the crisis because Taiwan has been a net creditor, while Hong Kong and Singapore are large international financial and intermediation centers. However, even if we focus on the shares of short-term loans in the other East Asian economies, we can find relatively high shares of short-term loans in the

early 1990s, say, 72.0% in Thailand, 70.6% in Korea in December 1993, and so on.

Because bank loans steadily expanded in almost all terms to maturity, the high shares of short-term loans in these East Asian economies slightly declined before the crisis. In addition, since only short-term loans showed significant decline after the crisis, the shares of short-term loans in these East Asian economies dropped to nearly 50% in 1998. However, at least before the crisis, these East Asian economies still had relatively high shares of short-term loans, which made their financial structure vulnerable to a liquidity short-fall.

(ii) Shares of Short-term Loans

BIS provides the detailed data set on the maturity distribution of loans from BIS reporting banks to a large number of countries. By using this data set, Table 4 reports average shares of short-term loans in the world and those in several regions. It shows that even the world average shares of short-term loans were above 50% throughout the 1990s. Among several regions, Eastern Europe had lower shares of short-term loans, while offshore banking centers had very large shares of short-term loans in general. Compared with developed countries, developing countries had relatively larger shares of short-term loans. In particular, average shares of short-term loans in Asia were always above 60% even if we include other Asian countries in the sample.[12]

Putting aside the East Asian problems, international lending from BIS reporting banks generally had high shares of short-term loans. Since liquidity problems emerge when external creditors become unwilling to roll over existing short-term credits, the evidence implies that not a few countries could have had liquidity problems if they had large amount of commercial bank debt. Of course, the East Asian economies before the crisis had slightly higher shares of short-term loans even in this world standard. And, in this sense, we can say that the East Asian economies before the crisis had more vulnerable form of external liabilities than the other developing countries. However, when we make an international comparison of short-term loan shares for the BIS world-wide data, we can also see that high shares of short-term loans in the East Asian economies before the crisis were not remarkable outliers in the world standard.

Our theoretical result is consistent with the empirical fact that a large fraction of external bank debt had been financed by short-term loans in a large number of countries, which might make several developing countries vulnerable to liquidity problems. In particular, since the East Asian crisis took the form of a pure liquidity shortfall in private bank loans, the experience of several Asian countries in 1997 may provide striking examples of such negative consequences of efficient bank monitoring.

(iii) Other Characteristics of International Bank Loans

Until now, we have mainly investigated the role of maturity distributions of bank loans in causing the liquidity crisis in the international market. In this subsection, we briefly discuss other characteristics of international bank loans during the period of the East Asian crisis.

We first examine which sectors received more international bank loans before and after the crisis. Table 4 summarizes the percentage distributions of the recipient sectors of the BIS banks' loans in June 1997 (pre-crisis period) and in June 1998 (post-crisis period). The world average data shows that nearly half of loans went to the non-banking private sectors and nearly 40% to the banking sector in both periods. Comparing with the world averages, the non-banking private sectors had larger shares in Indonesia, Malaysia, and Thailand, while the banking sector had larger shares in Korea, Taiwan, Hong Kong, and Singapore. However, comparing the shares before and after the crisis, the shares of the banking sector declined significantly in all of these East Asian countries. This implies that the drastic withdrawals of international bank loans happened more for the local banking sector than for the local non-banking sectors.

We next examine which countries changed their lending behavior before and after the crisis. Table 5 summarizes the percentage distributions of the nationality of the BIS banks in June 1997 and June 1998. The worldwide data shows that Japanese banks lost their shares after the crisis both in developed countries and developing countries. Even in East Asia, Japanese banks lost their shares after the crisis in Taiwan, Hong Kong, and Singapore. The declines probably reflected the Japan's banking crisis since November 1997. However, when we concentrate our attention to the East Asian countries under the crisis, the shares of Japanese banks were relatively stable before and after the crisis. That is, comparing the data of June 1997 and June 1998, the shares of Japan showed only a slight

12 For example, in December 1996, the share of short-term loans in Bangladesh was 70.4%, while those of Cambodia, Fiji, and Lao P.D.Republic were 86.7%.

decline in Indonesia and Malaysia and went up in Korea and Thailand. On the other hand, the United States lost the shares in these countries except in Korea. This implies that the effects of the Japan's banking crisis in 1997 and 1998 might have been relatively minor for the panicking withdrawals of bank loans in East Asia.

8. DISCUSSIONS

Until section 6, we have discussed how the maturity of bank loans is determined in the competitive international financial market. The results are, however, based on several assumptions that may not be relevant for some developing countries. For example, our simple theoretical model did not take into account several regulatory factors in the international loan market. In the real world, the maturity structure of international bank loans may have been influenced not only by the government policy to regulate long-term capital inflows but also by the regulations on foreign banks, say, the BIS risk-weight regulation. In terms of our theoretical analysis, these regulatory factors can be modeled as taxes or quotas on long-term loans. Thus, if these factors exist, short-term loans would be chosen by relatively milder conditions in our model.

In addition, our model assumed that borrowers face a competitive international loan market. The assumption may be justified when there are a large number of potential foreign lenders in the international loan market. In particular, the assumption may be realistic for the East Asian economies before the crisis where many foreign banks competed with others in the loan market under the lending boom. However, in several developing countries, private loans from foreign banks took the form of syndicated loans. Under such circumstances, borrowers in developing countries did not necessarily face a competitive international loan market.

Without rigorous analyses, it is not clear how our main results will change when foreign banks have some monopolistic power in the international loan market. However, even when the international loan market is not competitive, it is always true that efficient monitoring activities can make use of new information arrival more efficiently under asymmetric information between lenders and borrowers. Thus, I conjecture that for some mild conditions, monopolistic foreign banks can still have an incentive to choose short-term loans when they have better monitoring abilities.

Finally, our model assumed the condition (1) under which the average project in the economy has a positive net present value. But, in general, we cannot rule out the case where the condition (1) does not hold. In fact, the case happens when the average project in the economy has a negative net present value in terms of cash flows, that is, when $R^2K > [f+(1-f)q]X$. I think that the case is not realistic for the East Asian economies before the crisis because their expected growth rates were very high. However, it may hold true for several stagnated developing countries where the percentage of bad quality borrowers is large in the economy.

When $R^2K > [f+(1-f)q]X$ in the model, long-term loan is never supplied by foreign banks at date 0 because foreign banks cannot get expected rate return of R^2. However, as long as $R^2K \leq (1-\theta e)\,RL + fe\,X$, short-term loan can be supplied by foreign banks at date 0. This implies that when the average project in the economy has a negative net present value, foreign banks provide only short-term loan to the economy.

The result may explain several noteworthy events in the international bond market for some stagnated developing countries. For example, in 1994, foreign investors refused to purchase long-term Mexican government bonds because the devaluation of Mexican peso became highly possible. As a result, in Mexico, the term structure of government bonds shifted to short-term before the eventual crisis in December 1994. Similarly, in 1998, foreign investors became skeptical about the sustainability of fiscal deficits in Russia. As a result, they shifted their investment to short-term Russian bonds before the eventual devaluation of the Ruble. Although these events happened in the bond market rather than in the loan market, they are consistent with the above discussions which allowed for the case that $R^2K > [f+(1-f)q]X$ in our model.

9. CONCLUDING REMARKS

The objective of this paper was to link Asian capital flow reversals to the international bank loans with efficient monitoring. In this paper, we first demonstrated that middle-term and long-term commercial bank loans were less mobile forms of external liabilities. We also showed that a large fraction of external bank debt had been financed by short-term loans in the East Asian countries. We then presented a simple theoretical model where the vulnerable financial structure in developing countries might emerge as a result of efficient monitoring activities by private banks. In the model, we assumed both asymmetric information and liquidation risk in the competitive financial market. The existence of asymmetric information called for the role

of a short-term lender in monitoring borrowers' performance. However, since the monitoring changes the maturity composition, total effects of efficient monitoring on economic welfare are largely reduced when it increases the possibility of a liquidity shortfall.

In previous literature of corporate finance, a large number of studies stressed the positive role of banks as delegated monitors that specialize in gathering information about borrowers. It is probably true that when prudential regulations are established well in the financial market, the efficient role of banks as delegated monitors unanimously improves economic welfare. However, the current international financial market has neither satisfactory prudential regulation nor safety net (say, deposit insurance). Given the circumstances, efficient monitoring activities by competitive private banks are not necessarily desirable. That is, unless we can establish appropriate regulations in the near future, an improvement of bank's monitoring ability can increase the possibility of an unnecessary liquidity shortfall and may have a negative effect on economic growth in the international financial market.

Our results are consistent with several previous empirical studies. First, a large number of empirical evidence supports the role of government intervention to allocate the capital stock to designed sectors in developing countries. For example, World Bank (1989) pointed out that "(d)eveloping country governments have played a large role in credit allocation (p.55)" during the past few decades. In particular, "without intervention their financial systems would not be cooperative partners in the development effort (p.54)." Our results give some explanation why government intervention is important for economic development in the financial market, particularly in the international financial market.

Second, previous studies well documented the role of long-term loans in financing sustained economic growth. In particular, there has been widely accepted recognition that the allocation of long-term funds by government accelerated economic growth and productivity in postwar Japan. For example, Teranishi (1982), and Takei and Teranishi (1991) empirically showed that the allocation of long-term funds by government accelerated economic growth and productivity in postwar Japan. Horiuchi and Sui (1993) showed that long-term loans by the Japan Development Bank increased corporate investment. Packer (1994) stressed the role of long-term credit banks that have obtained a license from the Ministry of Finance under the Long-Term Credit Bank Law. All these empirical results are consistent with our theoretical findings in that long-term funds can accelerate economic growth by reducing myopic investment.

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Table 1 Capital Inflows to the East Asian Economies before and after the Crisis - Quarterly Data

(I) Direct Investment (IMF Code=78bed)

	95.3	95.4	96.1	96.2	96.3	96.4	97.1	97.2	97.3	97.4	98.1	98.2	98.3	98.4	99.1
Thailand	304	637	810	453	456	617	645	842	1222	1037	1870	2608	1431	1031	1025
Indonesia	1344	1259	1990	1024	1640	1540	2342	1267	1392	-324	-502	367	-144	-77	-32
Korea	414	599	405	680	256	985	624	791	611	819	505	1168	2162	1582	1407
Philippines	260	609	531	295	551	140	565	214	295	148	251	198	222	1042	373

(ii) Portfolio Investment (IMF Code=78bgd)

	95.3	95.4	96.1	96.2	96.3	96.4	97.1	97.2	97.3	97.4	98.1	98.2	98.3	98.4	99.1
Thailand	1412	615	1407	786	856	537	169	1630	2533	466	210	-92	-307	348	297
Indonesia	1586	1320	1327	919	630	2129	1009	1103	646	-5390	-3548	1840	-17	-277	-536
Korea	5521	3379	3048	6574	5163	6398	2903	6107	5364	-2086	2592	1734	-3793	-824	1080
Philippines	1046	632	424	1612	1205	1885	1205	514	-442	-677	-177	335	-666	232	1996

(iii) Bank Loans (IMF Code=78bud)

	95.3	95.4	96.1	96.2	96.3	96.4	97.1	97.2	97.3	97.4	98.1	98.2	98.3	98.4	99.1
Thailand	2235	2455	456	3016	-1722	1159	2543	245	-3022	-3288	-2216	-1710	-3362	-4094	-2539
Indonesia	-225	1253	-1133	155	126	94	-244	-99	709	-642	-840	-1064	-204	-362	-1445
Korea	3526	1030	2104	2158	2764	2925	1220	1664	-1179	-11490	-3378	-445	-2230	-181	947
Philippines	89	915	965	2097	1236	738	1323	2243	-359	-1539	-24	681	-693	-369	-1207

Notes 1) Unit = millions of US dollars.

Table 2. Semi-Annual Growth Rates of International Bank Loans to the East Asian Economies for Different Terms to Maturity (%)

(i) Maturities up to and including one year

	Thailand	Indonesia	Korea	Malaysia	Philippines	Taiwan	China	Hong Kong	Singapore
94.6	27.03	0.14	18.95	10.94	12.17	7.34	-5.84	10.83	6.51
94.12	14.06	13.12	15.00	-19.80	19.84	11.90	25.13	8.58	1.46
95.6	23.21	18.69	28.14	10.58	7.44	23.87	-4.87	7.16	23.65
95.12	14.29	9.13	5.51	8.52	19.37	-16.72	33.18	-8.13	-12.34
96.6	9.70	7.28	14.84	26.55	46.25	-1.25	6.25	-13.76	-1.96
96.12	-4.46	15.75	8.30	11.88	30.08	-2.76	9.85	-5.05	-0.48
97.6	-0.31	1.22	5.02	45.37	11.41	16.41	12.12	7.19	11.88
97.12	-14.86	2.07	-16.12	-10.06	38.34	-2.57	12.15	-8.32	-8.65
98.6	-28.42	-21.83	-44.23	-23.37	-14.72	-13.14	-8.77	-20.90	-31.64

(ii) Maturities over one year up to two years

	Thailand	Indonesia	Korea	Malaysia	Philippines	Taiwan	China	Hong Kong	Singapore
94.6	-3.21	8.05	13.96	-20.03	21.46	53.74	4.98	13.39	-39.26
94.12	18.39	16.41	9.43	77.05	-15.55	3.15	5.26	1.11	122.22
95.6	38.91	-9.88	-6.63	61.71	0.00	13.06	8.63	-7.97	40.13
95.12	20.93	2.43	-6.11	-15.66	44.35	59.71	14.94	6.33	-0.93
96.6	15.47	10.01	34.67	-27.29	53.91	-10.00	15.19	4.77	26.61
96.12	18.27	3.34	19.46	-13.55	6.40	-17.44	1.23	2.52	-33.54
97.6	-4.91	-1.31	0.78	-14.70	-42.30	-51.14	-10.74	-15.83	-4.45
97.12	-9.30	4.46	26.17	48.94	31.29	23.31	2.88	32.15	8.90
98.6	2.64	0.68	77.40	7.31	92.29	33.33	0.60	17.23	73.34

(iii) Maturities over two years

	Thailand	Indonesia	Korea	Malaysia	Philippines	Taiwan	China	Hong Kong	Singapore
94.6	17.51	2.39	-6.13	6.90	-2.21	-1.70	8.40	10.10	21.23
94.12	42.20	12.35	21.95	13.30	12.66	73.73	7.79	11.90	25.52
95.6	13.13	18.53	32.35	-2.81	5.55	-7.49	10.95	5.17	10.17
95.12	25.84	11.97	11.35	21.59	5.26	44.16	-2.47	0.04	11.73
96.6	9.79	14.97	11.70	29.65	7.82	13.33	2.53	-0.58	-11.04
96.12	9.46	8.14	18.24	-1.33	10.81	14.09	9.95	9.72	21.76
97.6	0.89	10.94	3.03	12.57	-2.68	-0.08	-0.62	9.71	4.27
97.12	-16.16	1.77	0.45	14.14	57.34	42.65	7.24	12.00	10.32
98.6	-7.49	-0.41	15.08	-8.75	-7.83	-6.48	-3.96	-6.91	2.33

Data Sources of BIS data)
96.6-97.12: The Maturity, Sectoral and Nationality Distribution of International Bank Lending, various issues.
98.6: International Banking and Financial Market Development, August 1998.
Data sources = IFS.

Table 3. The Percentage Distribution of International Bank Loans to the East Asian Economies

(I) Maturities up to and; including one year

	Thailand	Indonesia	Korea	Malaysia	Philippines	Taiwan	China	Hong Kong	Singapore
93.12	72.0%	61.7%	70.6%	56.8%	40.4%	92.9%	45.5%	88.0%	96.0%
94.6	74.3%	60.9%	72.5%	59.1%	44.2%	92.7%	41.1%	88.1%	95.9%
94.12	70.6%	60.9%	70.9%	48.8%	46.4%	90.4%	44.0%	87.6%	94.5%
95.6	71.2%	62.5%	72.0%	49.4%	46.3%	92.3%	40.2%	88.1%	94.9%
95.12	69.4%	61.9%	70.0%	47.0%	48.8%	87.2%	47.6%	86.6%	93.3%
96.6	68.9%	60.0%	70.8%	49.7%	55.1%	86.4%	48.4%	85.1%	93.1%
96.12	65.2%	61.7%	67.5%	50.3%	58.2%	84.4%	48.9%	82.5%	92.6%
97.6	65.7%	59.0%	68.1%	56.4%	59.7%	87.3%	52.0%	82.4%	93.1%
97.12	65.9%	60.6%	63.1%	53.1%	60.4%	81.7%	53.5%	79.2%	91.9%
98.6	59.3%	55.0%	45.8%	48.6%	57.1%	80.1%	52.0%	76.0%	87.6%

(ii) Maturities over one year up to two years

	Thailand	Indonesia	Korea	Malaysia	Philippines	Taiwan	China	Hong Kong	Singapore
93.12	6.2%	8.9%	5.6%	4.6%	4.0%	1.3%	7.7%	2.2%	0.7%
94.6	4.9%	9.5%	5.5%	3.4%	4.7%	1.9%	7.7%	2.2%	0.4%
94.12	4.8%	9.8%	5.1%	6.2%	3.5%	1.7%	7.0%	2.1%	0.9%
95.6	5.5%	7.6%	3.8%	9.2%	3.2%	1.6%	7.3%	1.8%	1.0%
95.12	5.6%	7.1%	3.3%	6.8%	4.1%	2.9%	7.4%	2.0%	1.1%
96.6	5.9%	7.0%	3.9%	4.1%	4.9%	2.6%	8.2%	2.4%	1.4%
96.12	6.9%	6.5%	4.1%	3.2%	4.3%	2.2%	7.6%	2.5%	1.0%
97.6	6.6%	6.0%	4.0%	2.1%	2.3%	0.9%	6.5%	2.0%	0.8%
97.12	7.1%	6.3%	5.5%	3.3%	2.2%	1.1%	6.1%	2.8%	1.0%
98.6	9.1%	7.4%	12.8%	4.3%	4.6%	1.7%	6.5%	3.9%	2.3%

(iii) Maturities over two years

	Thailand	Indonesia	Korea	Malaysia	Philippines	Taiwan	China	Hong Kong	Singapore
93.12	19.3%	26.5%	17.2%	30.7%	48.1%	5.2%	40.5%	8.1%	2.9%
94.6	18.4%	26.8%	13.9%	30.8%	45.9%	4.7%	42.1%	8.0%	3.3%
94.12	21.8%	26.6%	14.4%	35.9%	45.3%	7.2%	38.8%	8.2%	4.0%
95.6	20.2%	27.3%	15.1%	32.0%	44.4%	5.5%	41.3%	8.1%	3.6%
95.12	21.6%	27.7%	15.5%	34.1%	41.3%	8.9%	35.8%	8.7%	4.5%
96.6	21.5%	28.8%	15.3%	36.9%	34.4%	10.1%	35.1%	9.8%	4.1%
96.12	23.3%	27.6%	15.9%	32.9%	30.9%	11.6%	35.5%	11.0%	5.0%
97.6	23.8%	29.0%	15.7%	28.6%	27.7%	10.3%	33.5%	11.2%	4.7%
97.12	23.5%	29.6%	17.5%	34.2%	31.9%	14.1%	32.9%	13.2%	5.6%
98.6	27.3%	34.3%	26.1%	37.3%	32.6%	14.9%	33.7%	14.9%	7.9%

Data Sources of BIS data)

96.6-97.12: The Maturity, Sectoral and Nationality Distribution of International Bank Lending, various issues.
98.6: International Banking and Financial Market Development, August 1998.

Table 4. Percentages of Short-term Loans whose maturities are less than or equal to one year

	93.12	94.6	94.12	95.6	95.12	96.6	96.12	97.6	97.12
ALL COUNTRIES	53.04	53.67	53.59	55.53	55.29	55.53	55.1	56.28	54.88
Developed Countries	53.21	53.62	52.79	55.98	53.6	52.21	53.22	53.98	53.51
Eastern Europe	37.15	36.45	35.19	39.65	39.08	41.85	44.19	50.68	43.4
Developing Countries	55.93	56.69	57.05	58.69	58.41	58.8	57.66	58.18	58.1
A) LATIN AMERICA	48.83	50.07	51.27	52.86	52.25	53.08	53.67	52.51	54.76
B) MIDDLE EAST	66.6	62.16	59.61	58.7	59.13	60.15	56.71	62.14	59.94
C) AFRICA	45.82	47.57	50.24	52.52	53.11	52.12	49.75	50.93	56.26
D) ASIA	63.02	63.82	62.86	64.07	63.45	63.32	61.5	62.31	60.6
East Asia excluding Hong Kong and Singapore									
Thailand	72.03	74.29	70.58	71.18	69.42	68.92	65.15	65.67	65.91
Indonesia	61.65	60.91	60.88	62.53	61.93	60.01	61.68	59.02	60.6
Korea	70.63	72.53	70.93	72.01	70.01	70.81	67.54	68.07	63.12
Malaysia	56.76	59.12	48.76	49.42	47.05	49.71	50.27	56.42	53.08
Philippines	40.38	44.17	46.43	46.31	48.84	55.1	58.22	59.69	60.43
Taiwan	92.91	92.71	90.41	92.33	87.2	86.36	84.38	87.29	81.71
China	45.53	41.09	43.97	40.2	47.59	48.37	48.87	52.03	53.45
Offshore;Banking Centers	82.29	82.41	81.9	81.68	80.41	75.54	74.26	73.84	72.05
Hong Kong	88.01	88.15	87.59	88.08	86.59	85.11	82.45	82.37	79.2
Singapore	96.01	95.87	94.51	94.91	93.3	93.07	92.6	93.07	91.86

Notes 1)Asia does not include banking centers such as Hong Kong and Singapore.
2)Unallocated loans are included in total loans.

Data Sources of BIS data)
96.6-97.12: The Maturity, Sectoral and Nationality Distribution of International Bank Lending, various issues.
98.6: International Banking and Financial Market Development, August 1998.

Table 5. The Distributions of International Bank Lendings by Sector

(1) Before the Crisis (June 1997)

	Banks	Public Sector	Non-bank private sector	Unallocated
ALL COUNTRIES	39.6%	15.2%	44.3%	0.8%
DEVELOPED COUNTRIES	41.5%	15.3%	42.1%	1.1%
EASTERN EUROPE	53.1%	15.0%	31.8%	0.1%
DEVELOPING COUNTRIES	37.2%	15.4%	47.3%	0.1%
A) LATIN AMERICA	24.2%	25.3%	50.3%	0.2%
B) MIDDLE EAST	48.8%	18.2%	33.0%	0.1%
C) AFRICA	37.2%	24.3%	38.4%	0.1%
D) ASIA	44.1%	7.4%	48.4%	0.1%
China	42.6%	13.2%	44.1%	0.0%
Indonesia	21.1%	11.1%	67.7%	0.1%
Korea South	65.3%	4.2%	30.4%	0.1%
Malaysia	36.4%	6.4%	57.1%	0.1%
Philippines	40.3%	12.8%	46.8%	0.0%
Taiwan	61.6%	1.6%	36.8%	0.1%
Thailand	37.6%	2.8%	59.5%	0.1%
OFFSHORE;BANKING CENTRES	59.0%	0.6%	40.0%	0.4%
Hong Kong	64.7%	0.5%	33.9%	0.8%
Singapore	82.8%	0.4%	16.7%	0.1%

(2) After the Crisis (June 1998)

	Banks	Public Sector	Non-bank private sector	Unallocated
ALL COUNTRIES	35.50%	14.80%	49.00%	0.80%
DEVELOPED COUNTRIES	39.10%	13.60%	47.10%	0.20%
EASTERN EUROPE	50.00%	13.70%	36.20%	0.10%
DEVELOPING COUNTRIES	32.20%	14.90%	52.70%	0.20%
A) LATIN AMERICA	24.10%	20.20%	55.50%	0.20%
B) MIDDLE EAST	45.50%	19.10%	35.30%	0.10%
C) AFRICA	31.90%	17.10%	50.90%	0.10%
D) ASIA	37.30%	8.90%	53.70%	0.10%
China	39.70%	11.50%	48.80%	0.00%
Indonesia	14.20%	15.10%	70.60%	0.00%
Korea South	57.00%	6.60%	36.30%	0.10%
Malaysia	31.20%	6.60%	62.10%	0.10%
Philippines	45.90%	12.40%	41.70%	0.00%
Taiwan	56.40%	1.50%	41.50%	0.60%
Thailand	26.10%	4.20%	69.60%	0.00%
OFFSHORE;BANKING CENTRES	50.50%	0.70%	48.50%	0.40%
Hong Kong	54.90%	0.70%	43.80%	0.60%
Singapore	73.80%	0.50%	25.60%	0.20%

Data Sources of BIS data)

97.6: The Maturity, Sectoral and Nationality Distribution of International Bank Lending, August1997.

98.6: International Banking and Financial Market Development, August 1998.

Table 6. The Distributions of International Bank Lendings by Banks' Nationality

(1) Before the Crisis (June 1997)

	USA	Japan	France	Germany	UK
ALL COUNTRIES	12.2%	16.4%	9.8%	16.9%	7.4%
DEVELOPED COUNTRIES	7.9%	13.1%	7.7%	16.4%	10.5%
EASTERN EUROPE	9.8%	3.4%	6.8%	41.6%	1.8%
DEVELOPING COUNTRIES	13.7%	19.4%	10.7%	13.3%	7.6%
A) LATIN AMERICA	23.7%	5.8%	8.3%	12.7%	6.7%
B) MIDDLE EAST	8.7%	5.8%	14.0%	22.8%	9.8%
C) AFRICA	11.0%	6.5%	20.1%	16.9%	9.3%
D) ASIA	8.3%	31.7%	10.6%	12.1%	7.6%
China	5.1%	32.3%	12.6%	12.6%	11.9%
Indonesia	7.8%	39.4%	8.2%	9.6%	7.4%
Korea South	9.6%	22.8%	10.4%	10.4%	5.8%
Malaysia	8.3%	36.4%	10.2%	19.8%	7.0%
Philippines	19.5%	14.6%	13.9%	13.8%	7.5%
Taiwan	10.0%	12.0%	20.5%	11.9%	12.6%
Thailand	5.8%	54.4%	7.3%	10.9%	4.1%
OFFSHORE;BANKING CENTRES	4.6%	32.1%	7.7%	17.0%	9.7%
Hong Kong	3.9%	39.3%	5.8%	14.5%	13.
Singapore	2.1%	30.9%	7.3%	18.2%	12.0%

(2) After the Crisis (June 1998)

	USA	Japan	France	Germany	UK
ALL COUNTRIES	11.2%	12.7%	10.4%	17.3%	8.6%
DEVELOPED COUNTRIES	7.5%	9.2%	7.9%	17.9%	11.0%
EASTERN EUROPE	9.3%	3.1%	8.3%	39.4%	2.9%
DEVELOPING COUNTRIES	13.2%	16.1%	11.7%	14.0%	8.6%
A) LATIN AMERICA	21.7%	5.0%	8.5%	13.3%	7.8%
B) MIDDLE EAST	9.2%	5.3%	12.2%	20.3%	11.3%
C) AFRICA	8.3%	4.0%	32.2%	16.1%	6.6%
D) ASIA	7.0%	30.3%	10.9%	13.0%	9.3%
China	3.5%	29.5%	13.4%	12.5%	13.2%
Indonesia	6.4%	37.9%	8.0%	11.7%	7.9%
Korea South	10.2%	26.1%	10.9%	11.6%	7.8%
Malaysia	5.0%	34.3%	10.4%	22.4%	7.0%
Philippines	17.0%	13.0%	10.0%	12.1%	10.0%
Taiwan	6.5%	11.0%	18.1%	10.5%	15.1%
Thailand	3.8%	55.8%	8.4%	11.3%	4.5%
OFFSHORE;BANKING OFFSHORE;	5.4%	24.8%	8.8%	18.6%	11.2%
Hong Kong	3.5%	31.3%	7.2%	13.8%	18.8%
Singapore	2.1%	24.0%	5.2%	18.8%	15.5%

Data Sources of BIS data)
97.6: The Maturity, Sectoral and Nationality Distribution of International Bank Lending, August1997.
98.6: International Banking and Financial Market Development, August 1998.