THE CREDIT CRUNCH IN EAST ASIA:
EVIDENCE FROM FIELD FINDINGS ON BANK BEHAVIOR AND POLICY ISSUES

by

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1. Introduction

It might seem untimely to discuss the issue of the credit crunch in East Asia now, after two years since the East Asian crisis erupted. In fact, although the crisis was deeply disruptive to an unanticipated extent, most of the affected economies have clearly rebounded. Thus, one might hold that conferring now on the way the credit crunch propagated the crisis in East Asia is but an academic exercise with little value for current policy demand. Yet, on the contrary, there are at least three good reasons which make this discussion worthy.

First, due to the severity of the blow or to other circumstances, in some of the East Asian crisis countries—e.g., Indonesia but perhaps also Thailand to some extent—the banking system is still faltering and/or reluctant to secure the resumption of normal credit flows. In these cases, there is still a clear demand for assistance to devise policy action.

Second, even where recovery is broad based and credit flows have somewhat resumed, there is no guarantee that the banking sector resolutions are bettering the allocation of credit. To the contrary, preferential access to credit might be shaping the recovery and this could be building up renewed problems down the stream.

Third, it doesn’t take a crystal ball to predict that East Asia is the latest but not the last in a series of recurring financial crises. Thus, we need to draw from the East Asian experience as many lessons as we can to predispose remedies for future crises. And, indeed, there is something unique about the East Asian crisis—its breadth—that make it the best candidate to identify the transmission mechanisms through which financial shocks propagate to the economy and, thus, devise corrective policy actions.

In this perspective, this chapter diagnoses the extent of credit market disruption in the East Asian crisis, prognosticates how credit market disruption constitutes(d) a bottleneck to recovery, and discusses possible remedies to heal credit crunches.

The chapter is organized as follows. The next Section presents a concise executive summary sketching the primary findings, commenting the related major problems and outlining for discussion some possible remedies. Section 3 takes a bird’s eye view at some of the recent systemic crises previous to the East Asian one—affecting countries in a comparable stage of development—and highlights recurrent features of the constraints credit crunches posed to these economies’ recovery. Section 4 expands on the primary findings for each of the five crisis countries. Section 5 considers how credit market disruption in East Asia constitutes(d) an impediment to recovery and discusses possible remedies. The chapter is complemented by an appendix, which describes a consistent framework to identify and interpret the main phenomena associated with the credit market disruption and the associated credit crunch. Beside pointing to what could be done to alleviate the credit crunch in East Asia, this chapter in its entirety attempts to look at the East Asian experience also in terms of the lessons that may be gleaned for dealing with future crises.

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3 This policy note is one of the outputs of the project “Alleviating the Impact of the Credit Crunch in East Asia in Indonesia, Malaysia, the Philippines, South Korea, and Thailand”. This report results from background work in the headquarters, from close interactions with authorities—mainly Central Banks—in the involved countries and from the valuable help of the respective World Bank country teams.

4 To be sure, the case of Thailand is only sketched. In the absence of a visit by the team to Bangkok, only some of the relevant data were obtained thanks to the help of Stijn Claessens and his team.
2. Executive Summary

Background

It might seem untimely to discuss the issue of the credit crunch in East Asia now, after two years since the East Asian crisis erupted. In fact, although the crisis was so disruptive, most of the affected economies have clearly rebounded. Thus, conferring now on the way the credit crunch propagated the crisis in East Asia might be deemed an academic exercise with little value for current policy demand. Yet, on the contrary, there are at least three good reasons which make this discussion worthy.

First, in some of the East Asian crisis countries—e.g. Indonesia—the banking system is still faltering and/or reluctant to secure the resumption of normal credit flows. In these cases, there is still a clear demand for assistance to devise policy action.

Second, even where recovery ensued, there is no guarantee that banking sector resolutions are bettering the allocation of credit. To the contrary, preferential access to credit might be shaping the recovery, thus building renewed problems down the stream.

Third, we need to draw from the East Asian experience—the largest recent crisis—as many lessons as we can to predispose remedies for future systemic crises. While the systemic crisis builds widespread liquidity tensions in the economy—possibly leading to bankruptcy many profitable businesses deserving no market sanction\(^5\)—it is to a large extent through the banking system that the crisis is transmitted and may be amplified. Thus, in order to avoid such major losses and inefficiencies, appropriate policy action is needed.

The unexpectedly severe crisis affecting East Asia brought about deep disruption to these fast growing economies. Credit markets were the segment of these economies where disruption was deepest. In turn, credit market disruption exerted a negative feedback on the real economy, posing serious hindrances to recovery.\(^6\)

In essence, there were three major causes for the deep disruption in credit markets:

i) particularly in the early phase of the crisis, with the drying up of foreign funds, the lacking or unevenly distributed liquidity substantially weakened many banks;

ii) later on, as increasing interest rates and exchange rate losses took their toll on the highly leveraged East Asian corporations, mounting loan delinquencies impaired bank capital, for which adequacy standards were at the same time stiffened;

iii) all throughout, as firms and banks succumbed to distress, all too many customer relationships were rescinded, thus leaving a multitude of businesses severely exposed to financial constraints exactly at the time when they needed liquidity the most.

In this scenario—this chapter argues—banks in East Asia cut back substantially on credit to the business sector, precipitating a credit crunch. This likely delayed and weakened the recovery, to the extent that the credit crunch retarded the transfer of

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\(^5\) See, for instance, Miller and Stiglitz (1999).

\(^6\) While the project of affiliation of this report focused only on the identification of adverse shifts in banks’ supply of loans, a parallel project—“Corporate Crisis, Recovery, and Upgrading in East Asia”, task managed by Ms. Dominique Dwor-Frecaut (EASPR)—analyzed how the situation of East Asian firms changed with the crisis. Specifically, the slow down or drop in credit observed in the East Asian crisis countries clearly depended also on the fall in demand for loans and not only on the adverse shifts in banks’ supply.
resources from sectors that previously expanded excessively—e.g. real estate and various other segments of the non-traded sector—to those that would likely expand more in the aftermath of the crisis—e.g. most segments in the traded sector, but not exclusively.

The resumption of growth surely is requiring a renewed availability of credit. Understanding the mechanisms underlying the collapse of credit and its uneven impact on different classes of borrowers may still be useful to formulating effective policy recommendations. In fact, even though credit shortages may—by now—raise more sectoral than macro issues, corrective action could avoid East Asia an inefficient recovery that would likely build further weaknesses. Specifically, inadequate credit flows could be still jeopardizing the transfer of resources to their more efficient uses, and policy actions are warranted to counter and mitigate the effects of these credit distortions. To this end, the present analysis of East Asian banking systems’ disruption may still prove helpful to support governments’ efforts to design policies directed towards easing the strain caused by the crisis both on the banking and corporate sectors—specifically for small-sized banks and enterprises.

Findings

Table A below summarizes the major findings of the policy note. The evidence gathered and commented hereafter suggests that:

- banks became more reluctant to lend; i.e. there was a leftward shift in credit supply;
- this was associated with a shift of depositor preference away from banks that traditionally lent more to SMEs;
- the risk premium charged by (some) banks on their loans (to SMEs) increased;
- real interest rates increased almost everywhere;
- lending growth declined and became negative in all the crisis countries;
- almost everywhere the maturity of financial intermediation shrank;
- depositor preference shifted away from small domestic to large domestic banks and from domestic banks to foreign banks;
- loans to SMEs contracted disproportionately in most of the countries;
- where observable, the rejection rate by banks of new loan applications increased;
- banks, where observable, curtailed the extension of pre-committed loans;
- the spread between marginal lending rates and rates on risk-free assets increased in every country where it was observable.

While each of them separately could stem from specific alternative factors, altogether these findings provide substantive evidence that the supply of credit to the affected East Asian economies shrunk. Moreover, there was a worsening not only in the quantity but also in the quality of bank intermediation. In a sense, depositor and bank portfolio preferences reinforced each other to make the allocation of scarcer credit even more twisted towards those segments of the economy that have better access to alternative sources of external funding—thus being better able to compensate a credit shortage.
Were these findings specific to East Asia or did they show traits of commonality with previous systemic crises? A quick reference to the Mexican and Argentine crises finds that there were various common features with East Asia. Particularly, also in these two previous systemic crises, the weakness of financial intermediaries persisted, reportedly aggravating the crisis and hindering recovery for large segments of the economy.

**Policy Options**

Against this background, what could have been done to ameliorate the situation? The following is a list of tentative policy options for discussion which should be assessed in light of the costs and benefits associated with their adoption. Specifically, it is useful to distinguish four areas of intervention: 1) bank liquidity—pertaining to the first phase of the crisis; 2) bank capital; 3) banks’ risk aversion; and 4) assistance to SMEs.

**Liquidity**
- adopt measures to favor the recycling through the interbank market of depositors’ flight to quality from smaller banks to larger institutions, perceived less likely to fail;
- to the extent that the interbank market is not enough, make sure that rediscount facilities are sufficient and adequately articulated to cope with this problem of recycling funds to smaller banks suffering from the depositors’ flight;
- in the face of a systemic crisis, it seems crucial to activate the lending of last resort function early enough to prevent the triggering of a “negative accelerator” effect via distress and bankruptcies in the real and financial sectors.

**Capital**
- open domestic banks to foreign ownership to enlarge the potential supply of capital;
- allow government capital injections but possibly with preferred shares and with the attached pact to resell those shares, to limit distortions from government ownership;
- consider forms of supervisory forbearance that, in any event, should not be based on case-by-case judgement but on objective rules. Two examples are: a) correlate the phasing in of capital requirements with the situation of the macroeconomy; b) explore ways to lower capital requirements against loans to viable exporting firms, that will likely benefit from the exchange rate devaluation.

**Risk Aversion and Depletion of Banks’ Informational Capital**
- improve information sharing on borrowers among banks. This is aimed to minimize the probability that customers of distressed banks find it impossible to obtain credit from other banks. In fact, especially in a situation of systemic crisis, these other banks will find it difficult to grant the credit if they cannot observe the perspective clients’ credit history. To counter the depletion of banks’ informational capital, Central Banks/Supervisory Authorities might consider one or more of the following: (i) the temporary imposition of a mandatory backward reporting by banks on borrowers’ credit history and/or the enactment of administrative procedures to make such information available to surviving banks so as to minimize the case of “wrongly” rejected borrowers; (ii) be watchful to minimize the loss of “corporate
credit culture” in mergers, e.g. when the acquiring bank was not lending to the acquired bank’s borrowers; (iii) in order to minimize the depletion of the bank’s informational capital, suspend the turnover of branch loan officers and suspend sanctions on the non performance of loans they previously originated and that are now turning sour because of the systemic crisis;

- strengthen creditors’ protection and, particularly, enforcement of related legal actions;
- adopt corporate restructuring schemes for SMEs that effectively reduce banks’ perception of risk. For example, restructuring schemes that identify as viable only a small fraction of firms may deliver undesired results. In fact, in terms of banks’ perception of risk, the benefit of having singled out a small fraction of “winners” may be more than outweighed by the harm of having left out of this top group most firms whose condition was not critical but may become so now as they are starved of funds;
- consider using government subsidy schemes structuring them, in any case, to retain a risk-sharing element for banks, so that they still have an incentive for credit appraisal.

Assistance to SMEs
- as the basis for a good policy is good information, thus a first requirement is to assess the quality of professional statistical data on SME available to the government;
- information is also the key to the more accurate measurement of risk and more efficient allocation of finance to SMEs. The better informed the banks, the more they are able and confident to apply prospect-based lending methods rather than using collateral as the main source of security. Thus, improving information technology, intelligent systems and credit scoring models are important considerations;
- considering the promotion through start-up funding of SME cooperatives or mutual guarantee schemes to reduce information asymmetry in credit markets. Mutual guarantee schemes, for instance, are very popular in continental Europe in providing a privately organized "insurance system" for lending banks by groups of firms, usually within a specific industry, that enables the banks to rely less on the assets of individual companies within the group in making loan decisions. The pooling effects of this system reduce the risk of default to the bank and also reduce informational asymmetries between the bank and the firm. This market-based solution provides not only a guarantee, but also an incentive for members of these mutual societies to divulge information within the society that they would hesitate to provide to the bank;
- government loan guarantee programs can be useful to increase loan supply when private sector banks are hit by shocks that inefficiently reduce the current supply of credit. Thus, loan guarantee programs might be regarded as a credit market stabilizer;
- the development of venture capital seems a possible way to overcome the liquidity constraint for SMEs since the development of this kind of intermediation allows collecting additional savings dedicated either to start or to growing firms.
### Table A. An Overview of the Lending Activity in the Crisis Countries

<table>
<thead>
<tr>
<th>1. Degree of increase in real interest rates following the crisis</th>
<th>Indonesia</th>
<th>Korea</th>
<th>Malaysia</th>
<th>Philippines</th>
<th>Thailand</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative real rates till summer '98; high real rates thereafter</td>
<td>High till summer '98 moderately high thereafter</td>
<td>Moderately high in the earlier part of '98; then declines</td>
<td>Moderately high in the latter part of '97; downward trend in '98</td>
<td>Moderately high in '97; downward trend in '98</td>
</tr>
<tr>
<td>2. Increase in the spread between lending rate and interest rate on risk-free assets</td>
<td>Yes (but moderate since summer '98)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>3. Extent of decline in the growth of real loans</td>
<td>No significant change in '97 but sharpest drop in '98</td>
<td>Sharp decline in first half of '98</td>
<td>Sharp decline in '98</td>
<td>Downward trend in '97; drop in '98</td>
<td>Slight upward trend in 1997 and sharp decline in 1998</td>
</tr>
<tr>
<td>4. Evidence of flight to quality by depositors</td>
<td>From private banks to state banks</td>
<td>From local banks to nationwide banks</td>
<td>From merchant banks &amp; finance companies to commercial banks</td>
<td>From private banks and saving banks to commercial banks</td>
<td>From small banks to large banks</td>
</tr>
<tr>
<td>4.1 Among Domestic Banks</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>Yes</td>
</tr>
<tr>
<td>4.2 Domestic to Foreign Banks</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>5. Evidence of flight to quality by banks (e.g. via larger purchase of securities)</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
</tr>
<tr>
<td>6. Evidence of disproportionate contraction in loans to SMEs</td>
<td>Yes</td>
<td>Yes</td>
<td>No obvious decline but drop in share of small-size loans</td>
<td>Yes (Loans drop more in regions where SMEs are concentrated)</td>
<td>NA</td>
</tr>
<tr>
<td>7. Increase in the rejection rate of loan applications</td>
<td>NA</td>
<td>NA</td>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>8. Shortening in the maturity of financial intermediation</td>
<td>Yes, strongly so</td>
<td>Yes</td>
<td>Yes</td>
<td>No, contrary evidence</td>
<td>NA</td>
</tr>
<tr>
<td>9. Evidence on contraction in pre-committed loans</td>
<td>NA</td>
<td>Yes</td>
<td>Yes</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
3. The Credit Crunch in East Asia: Any Lessons From Previous Systemic Crises?

Up until a decade ago or so, systemic crises appeared to be rare but maybe this common wisdom has changed more recently. A full account of all the systemic crises of, say, the latest decade would be beyond the scope of this note for two main reasons. First, it would be inappropriate to compare the East Asian crisis with crises affecting countries in a comparable stage of development, which will be entangled with quite different problems and issues. Second, it would be misleading to compare the East Asian crisis with crises emerged much earlier, before the full blown financial liberalization changed the “rules of the game”.

This is the reason why we restrict our account to two systemic crises only: Mexico (1995) and Argentina (1996). Beside corresponding to the requirements mentioned above, these two crises have an additional specialty from our vantage point: They have been extensively studied also in terms of credit market disruption resulting from the crisis.

3.1 The Mexican Crisis

One of the salient features of the Mexican crisis was the noticeably quick recovery in economic activity: real GDP declined at rates of 9.2 percent, 8 percent, and 7 percent in the last three quarters of 1995, thereafter it picked up and grew at average annual rates above 5 percent through the first quarter of 1998.\(^7\) The notable recovery in economic activity, however, has not been uniform across the country. Although the tradable sector has experienced a vibrant growth, the non-tradable sector has recovered very slowly in the aftermath of a steep decline in 1995.

The asymmetric response of the tradable and non-tradable sectors is largely attributed to the acute “credit crunch” that the country has endured since 1995. While export firms could acquire financing in the international market or could obtain credit from upstream firms, firms in the non-tradable sector were negatively affected by the lack of credit. Instead, such firms, mainly consisting of small and medium-sized firms, had to rely on their own sources to finance themselves.

A quick glance at the evolution of lending activity in real terms and of interest rates along with the spread between lending rate and t-bill rate highlights the severity of the credit crunch (Figures 2.1, 2.2, and 2.3). Total lending to the private sector plunged 16 percent in real terms from 1995 to 1996, and 12 percent in 1997.\(^8\)

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\(^7\) Our discussion of the Mexican crisis draws largely on Krueger and Tornell (1999).

\(^8\) The decline, in the case of fresh loans, was even more prominent than that of the total stock of loans: 38 percent and 19 percent in 1996 and 1997, respectively.
Contrary to what one would expect, bank lending remained anemic and failed to respond to the strong economic growth during 1996 and 1997. In addition, the share of non-performing loans in total loans did not exhibit any improvement. Krueger and Tornell (1999) provide three explanations for this phenomenon.

First, real domestic lending rates remained well above the interest rates at which big tradable firms can acquire financing in world markets. This was due largely to non-existence of transparent and effective bankruptcy procedures in Mexico, which, in turn, made it very difficult to take possession of a debtor failing to service its debt. Consequently, Mexican banks have lost good customers and have ended up with firms that have no access to international capital markets either because they are small or because their earnings are not in foreign currency. The worsening in the pool of borrowers combined with the decline in the expected rate of return have led banks to offer relatively unattractive deposit rates. As a consequence, not only bank deposits declined, but also the stock of loans to the private sector fell.

Second, as banks were burdened by evergreen accounts—de facto non-performing loans—they had to capitalize the accrued interest rate every period. This, in turn, reduced the capacity of banks to grant fresh loans to new projects.
Third, the combination of the two aforementioned factors has left number of banks with negative effective capital—their capital became smaller than the sum of the recognized and unrecognized non-performing loans.

3.2 The Argentine Crisis

Next, we turn to Argentina—a country severely affected by the fall outs of the Mexican crisis. Between end-November and end-May 1995, the Argentine banking system lost 17 percent of its deposits. Prime interest rates in pesos and in USD reached their peak of 40 percent and 26 percent in mid-March 1995, from around 11½ and 9 percent, respectively, prior to the crisis.

As a result of the key role of bank credit in private sector financing in Argentina, the slow recovery of the private sector borrowing is closely associated with the economic activity. On the one hand, the credit to the private sector declined due to supply side factors: (i) interest rates increased sharply; (ii) private sector indebtedness rose.

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9 The discussion on the Argentine crisis draws mainly on Catao (1997).
significantly; and (ii) the banks became reluctant to extend credit as a result of the perceived increase in private sector financial fragility, regardless their enhanced liquidity position. On the other hand, the credit to the private sector could have been constrained by demand side factors: (i) the sharp increase in interest rates raised the level of indebtedness during 1995, and thereby reduced households’ demand for credit; (ii) the marked increase in unemployment rate was an important factor curtailing the demand for credit.

On the supply side, the following factors could explain the sharp slow-down in the lending activity. First, there was a sharp increase in the bank lending to the public sector. Banks’ holdings of government securities rose from Arg$3.1 billion in end-1994 to Arg$7.7 billion in end-1995, and then Arg$10.9 in July 1996. In other words, there was a flight to quality on the part of banks: banks re-allocated their assets towards government securities away from lending to the private sector (Figure 2.4).

Second, the higher public sector borrowing, which provided a high rate of return and relatively less risky outlet for banks’ increased liquidity, also undermined banks’ willingness to search for new private borrowers. This phenomenon was particularly important in the case of Argentina where informational asymmetries, high searching costs and geographical concentration of the banking industry, thwarts credit expansion across the country when there was an increase in demand for credit in provincial areas owing to high commodity prices and booming agricultural exports, particularly during the first half of 1996.

Third, banks’ perception of an increased lending risk not only had an important impact on the lending activity, but also, through engendering higher interest rates, aggravated adverse selection problems. The absence of a nationwide credit rating system in Argentina throughout the period severely restricted the ability of banks to asses the credit history of new clients, thereby made it more difficult for banks to screen out risky borrowers.

Finally, the loss of information arising from the disappearance of local branches of wholesale and cooperative banks further aggravated the adverse selection problem caused by the sharp increase in the interest rate. There was some anecdotal evidence on the surviving institutions—mainly large banks—willingness to compensate by lending to unknown borrowers in provincial areas and to small municipalities.

On the demand side, changes in interest rates and in private sector indebtedness along with expected changes in economic activity and the level of structural unemployment were important determinants affecting credit to the private sector in Argentina.

What can be inferred both from the Mexican and the Argentinean crisis episodes? The following lessons could prove to be useful in the Asian context:

- Not all segments of the economy benefit uniformly from economic recovery and are affected evenly by policy actions. As the Mexican experience demonstrated, firms operating in non-traded goods sector, largely consisting of small and medium-sized enterprises, experienced a severe credit crunch, which, in turn, resulted in a slow recovery;
• Drawing on the Mexican experience, it can be concluded that high economic growth alone is not sufficient to solve the problem of non-performing loans, which constitute a serious impediment for the banking system to adequately perform its functions. This raises the question of whether a strategy in which all non-performing loans are recognized at once and fiscal costs are all paid-up-front would be more desirable;

• Transparent and effective bankruptcy procedures are indispensable for a well functioning banking system. Its absence causes, *inter alia*, banks to charge higher lending rates, thereby further aggravating adverse selection and moral hazard problems;

• Authorities should make every effort to avoid the loss of information engendered by the closures of financial institutions. In this respect, the experience of Argentina is case in point where certain borrowers in provincial arrears—exporting agricultural products and commodities—could not obtain credits and therefore could fully not capitalize on the increase in external demand. Put differently, financial factors affect real outcomes not only through firm and household balance sheets, but also through bank behavior.
4. The Primary Findings in Each of the Five Crisis Countries

For each of the five crisis countries, we collected general and specific information on certain variables revealing whether and how much bank loan supply retrenchment put strain on domestic credit markets. The information in this section is organized according to the following order:\textsuperscript{10}

1. Degree of increase in real interest rates following the crisis
2. Increase in the spread between lending rate and interest rate on risk-free assets
3. Extent of decline in the growth of real loans
4. Evidence of flight to quality by depositors
   4.1 Among Domestic Banks
   4.2 Domestic to Foreign Banks
5. Evidence of flight to quality by banks (e.g. via larger purchase of securities)
6. Evidence of disproportionate contraction in loans to SMEs
7. Increase in the rejection rate of loan applications
8. Shortening in the maturity of financial intermediation
9. Evidence on contraction in pre-committed loans
10. Other relevant issues

\textsuperscript{10} The order is the same as in Table A. For some of the countries information was not available on one or more of the issues in the list. It would be particularly desirable to collect such missing information toward a better assessment of what happened.
4.1 Indonesia

1. Degree of increase in real interest rates following the crisis

The real lending rate in Indonesia became strongly negative at the beginning of 1998 (Figure 11). After a first monetary restriction\textsuperscript{11} stabilized inflation somewhat in May and June, the real lending rate dipped again during the summer. It was only since November 1998, with the real SBI (Sertifikat Bank Indonesia) rate hovering around 30 per cent, that the real lending became permanently positive. In this respect, two facts suggest that banks are less willing to lend: i) in the first nine months of 1999, the real lending rate has averaged 24 per cent, exactly 11 percentage points above its value in the (pre-crisis) same period of 1997; ii) the lending rate has been sluggish to decrease in spite of the substantial reduction in the SBI rate.

2. Increase in the spread between lending rate and interest rate on risk-free assets

In the case of Indonesia, lacking rates on government paper, the SBI rate may be held the closest proxy of the risk free rate. The spread between the lending rate and the SBI rate became strongly negative since April 1998—when monetary policy was made more restrictive—and turned positive again only since May 1999 (Figure 12). The value of the spread over July-September 1999 averaged 10.8 percentage points, 2.3 points more than in the (pre-crisis) first nine months of 1997.

\textsuperscript{11} Two major developments contributed to a more effective transmission of monetary policy: i) since March 1998 non-bank customers were allowed to buy SBIs; and ii) since July 1998 SBIs were allocated according to a competitive auction.
3. Extent of decline in the growth of real loans

There was a noticeable decline in the growth rate of real credit in Indonesia since the beginning of 1998 (Figure 13). At least from the banks’ perspective, the decline in lending could be attributed to three factors: i) the heightened corporate risks and the uncertainty about the path of corporate debt workouts; ii) the liquidity crunch induced by monetary tightening; iii) the capital crunch as bank capital has been widely wiped out.

The sharp decline in commercial banks’ claims on the private sector as a percentage of their asset, combined with the upward trend in the ratio of excess reserves to liabilities, underscores banks’ increasing reluctance to extend new loans (Figure 14).

The marked decline in private banks’ lending was likely triggered by a lack of liquidity: This is suggested by the fact that private banks received the bulk of the liquidity support provided by the Central Bank, while state banks needed considerably less and foreign banks nil (Figure 15; see also the discussion on the flight to quality).

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12 Unless otherwise indicated, growth rates are computed on year-on-year basis and deflated by the CPI.
13 In spite of supervisory forbearance a large share of Indonesian banks became virtually insolvent. See Nehru (1998).
4. Evidence of flight to quality by depositors

4.1 Among Domestic Banks

The downward trend in loans was more prominent in the case of private banks compared to state banks (Figure 15). Indeed, private banks experienced a marked deposit outflow, to the benefit of state banks that were perceived by depositors less likely to fail since government support was expected to be more forthcoming for them than for private national banks (Figure 16).

Although private banks tried to counter the depositors' flight by increasing deposit rates—particularly between October 1997 and February 1998—their market share on time deposits fell from 65 to 40 per cent, while that of state banks was propped up from 30 to 50 per cent (Figure 17). To the extent that some customers were exclusively borrowing from private banks, such borrowers may have found it particularly difficult to obtain credit. In fact, at a time of heightened corporate risk and of tight liquidity, banks are very likely to turn down new credit applicants with whom they do not already have an established customer relationship.
4.2 Domestic to Foreign Banks

Foreign and joint banks—which were objectively less likely to fail—benefited particularly of the flight to quality by depositors: Their market share in Rupiah time deposits more than tripled (Figure 16). The same reasoning proposed above on how this reshuffling of funds across banks may be disruptive applies also to foreign banks.  

5. Evidence of flight to quality by banks (e.g. via larger purchase of securities)

The drop in the share of claims on the private sector in total bank assets can be interpreted as a clear indication of banks reallocating their portfolios towards safer assets (Figure 14).

14 The contacted foreign banks made two interesting points. First, over 1998 they expanded to some extent their loans to SMEs (particularly in the Bandung area). This experience was successful: only a minor share of borrowing SMEs did not repay the loan (a mere 5% bad loan ratio, amply paid up front via lending rates). However, such lending was just a trickle. Second, foreign banks sometimes refused to increase lending to even clearly profitable companies, being concerned that their loans would not be used to finance production but to repay local banks which were recalling loans because of their difficulties.
6. Evidence of disproportionate contraction in loans to SMEs

The share of bank loans accruing to SMEs substantially dropped with respect to pre-crisis levels (Figures 18-9). This was partly caused by the fact that SMEs were not borrowing heavily in foreign currency: Accordingly, their outstanding loans were not inflated by the devaluation of the Rupiah as much as it happened for large firms. However, the share of bank lending directed to SMEs declined even considering only loans in Rupiah. In response to the disproportionate burden imposed on SMEs by the crisis and their importance in the Indonesian economy, the authorities intensified the schemes directed to provide credit to SMEs.

7. Increase in the rejection rate of loan applications

No such information was available for Indonesia.

8. Shortening in the maturity of financial intermediation

There was a substantial shortening in the maturity of bank intermediation: The share of 1-month time deposits in the total tripled (Figure 110). Whereas this partly reflected the fact that the yield curve became downward sloping, it is apparent that the public’s desire for liquidity played a major role. This conclusion is supported by two observations: i) the shift of deposits towards the shortest maturity accelerated in August 1997 and February 1998 when uncertainty in Indonesia aggravated; ii) this trend continued even when the positive rate spread between one-month deposits and deposits with longer maturity started to contract. As a consequence of the shortened maturity of liabilities, banks had an incentive to abbreviate the maturity of loans. In turn, the shortening in the maturity of loans likely increased uncertainty for corporates regarding the stability in the availability and in the cost of external finance. Eventually, this might lower or retard investment recovery.

9. Evidence on contraction in pre-committed loans

No such information was available for Indonesia.
10. Other relevant issues

Rates on working capital (up to one year) loans—reportedly the maturity of the few loans made at the peak of the crisis was less than one month—plunged below both the SBI rate (during the period April 1998—May 1999; Figure 111) and the 1-month deposit rate (Figure 112).\textsuperscript{15} As a result, the spread between lending and deposit rates turned negative (Figure 113).

The rate spread between working capital loans and one-month time deposits was negative since August 1997 for state banks and private banks. This spread—normally around 3% pre-crisis—became strongly negative since March 1998. Explaining this phenomenon is rather difficult. On the one hand, deposit rates tended to increase more at riskier banks struggling to attract funds (Figure 17). However, this explanation is unsatisfactory considering that—with staggering loans and average deposit rates hovering above SBI rates—even state banks, benefiting from depositors’ flight-to-quality (Figures 16-17) set their deposit rates above SBI rates. On the other hand, the authorities not only extended a blanket guarantee on deposits, but also administratively fixed maximum deposit rates above SBI rates. This regulation appeared inconsistent and liable to damage banks’ ability to lower deposit rates.

An interesting observation is that contrary to state banks and private banks, the spread between working capital loans and 1-month time deposits remained positive for foreign banks. This can be explained by two factors: i) foreign banks were able to attract deposits at lower rates since depositors perceive them as less risky banks; ii) foreign banks also increased their lending rates more than state banks and private banks.

\textsuperscript{15} This apparently stemmed from two factors: i) the lag with which lending rates adjust to money market rates; ii) the fact that banks—considering borrowers’ debt servicing ability—reportedly refrained from raising lending rates beyond a certain threshold.
4.2 Korea

1. Degree of increase in real interest rates following the crisis

The real lending rate\(^\text{16}\) in Korea was double its pre-crisis value in the spring of 1998 and—though declining subsequently—remained higher than pre-crisis even thereafter (Figure K1). An indication of banks’ growing unwillingness to lend is the widening of the gap between lending and overnight rates: In the first seven months of 1999, the gap averaged 6 percentage points, against 2 percentage points in the same period of 1997. In other words, although the monetary stance—as proxied for by the real overnight rate—has returned to its pre-crisis level, the real cost of credit has not.

### K.1 Real Lending and Overnight Rates
(Overdraft loan rate or overnight call rate minus average of annualized CPI inflation in the current and previous month)

![Graph showing real lending and overnight rates in Korea](image)

2. Increase in the spread between lending rate and interest rate on risk-free assets

Thanks to data availability, the assessment of interest rate spreads can be more analytical in the case of Korea. This allows to de-compose the spread between the bank lending rate and that on risk free domestic assets—e.g. government bonds—into a general risk premium—given by the spread between the corporate bond rate and the government bond rate—affecting the private sector as a whole, and a bank specific mark up—given by the spread between the bank lending rate and the corporate bond rate—specifically augmenting the cost of external funds for bank dependent borrowers vis-à-vis corporations that can issue liabilities on financial markets.

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\(^{16}\) We selected the overdraft loan rate which, in the case of Korea, proxies best for the marginal cost of credit.
The sum of the two spreads—i.e. the overall spread between the bank lending rate and that on risk free domestic assets—jumped to extraordinary values in December of 1997 and resumed its historic levels only in June of 1998 (Figure K2). Something is to be noticed, however, regarding the de-composition of this spread. While the corporate bond-government bond component has decayed even below pre-crisis—it averaged 0.9 percentage points in the first seven months of 1997 and 0.2 in the same period of 1999—the bank specific mark up has not yet resumed its historic values: It averaged 1.8 percentage points in the first seven months of 1997 and 3 in the same period of 1999. Roughly speaking, this means that the relative cost of debt became lower than pre-crisis for large corporations able to issue bonds but stayed higher than pre-crisis for SMEs that could only rely on bank loans as an external source of funds.

K2. Interest Rate Spreads: Lending Minus Corporate Bond and Corporate Bond Minus Government Bond

3. Extent of decline in the growth of real loans

There was a noticeable decline in the growth rate of real credit in Korea since the end of 1997 until the autumn of 1998 (Figure K3). Furthermore, while loans outstanding decreased, corporate bonds outstanding kept increasing: Between December of 1997 and December of 1998, they grew by almost 50 per cent (Figure K4). When combined with the evolution of the above spreads, the sharp decline in the lending activity suggests that the supply of loans either decreased more or increased less than demand, particularly at the peak of the crisis and in the following months.

According to a survey conducted in November 1998 by the Korea Federation of Enterprises (an Association grouping most chaebol firms), the main reasons for the lending contraction were the following: i) delayed financial and corporate sector
restructuring (23.6%); ii) the regulatory stiffening of the BIS capital adequacy ratio (20.7%); iii) a deteriorating firms’ credit status (13.7%); and iv) a declining willingness of lending due to growing sense of insecurity among loan officers (10.2%). This survey was based on the opinions of financial managers of 94 large corporations and 80 SMEs. It is interesting to note that almost 80% of participants expected that the credit crunch would still have a negative impact over the following 6-month to 2-year period.

K3. Evolution of Real Loans and Advances

K4. Loans of DMB and Corporate Bonds Outstanding

K5. Growth Rate of Loans by Type of Banks

K6. Share of Deposit by Type of Banks (Nationwide + Specialized vs. Local Banks)

4. Evidence of flight to quality by depositors

4.1 Among Domestic Banks

The downward trend in loans was more prominent in the case of local banks—smaller in size—compared to the larger-sized nationwide and specialized banks (Figure K5). Local banks experienced some deposit outflow—though incommensurably smaller than what observed in Indonesia for private banks—partly to the benefit of nationwide

17 Loan officers that originated loans which became non performing are held financially liable for this to the extent of their severance payment. While this procedure did not change with respect to the pre-crisis status, its impact changed. In fact, given the systemic nature of the crisis, loan officers bore losses that could not be anticipated ex ante: e.g. the performance of the loan portfolio they originated was apparently one of the main criteria for deciding on layoffs.
and specialized banks that were perceived by depositors less likely to fail. In fact, it is generally believed that some banks are simply “too-big-to-fail”; in addition, since some of the specialized banks are state-owned, government support was expected to be more forthcoming for them than for local banks (Figure K6).

4.2 Domestic to Foreign Banks

Though starting from a negligible market share—due to previous restrictive regulation—foreign banks benefited of the flight to quality by depositors: Their market share more than doubled (Figure K7). Accordingly, there was less of a slow down of lending at foreign banks (Figure K5).

5. Evidence of flight to quality by banks (e.g. via larger purchase of securities)

There is a clear trend of banks reallocating their portfolios towards safer assets: The share of government securities in total assets increased noticeably for all bank types, with the only exception of local banks (Figure K8). This is consistent with the assertion that banks became more reluctant to lend.

6. Evidence of disproportionate contraction in loans to SMEs

During 1998, lending to SMEs contracted more (-10,392 billion won) than in total loans (-804 billion won; Table K1) and the increase in bond issues provided even less help than usual to SMEs (Table K2).

Table K1: Loans of Deposit Money Banks by Size of Firms (billion won)

<table>
<thead>
<tr>
<th></th>
<th>End of 1997 (A)</th>
<th>End of 1998 (B)</th>
<th>B - A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>200,401.1</td>
<td>199,596.0</td>
<td>-804.2</td>
</tr>
<tr>
<td>SMEs</td>
<td>101,144.0</td>
<td>90,752.2</td>
<td>-10,391.8</td>
</tr>
<tr>
<td>Non-SMEs</td>
<td>99,257.1</td>
<td>108,847.7</td>
<td>+9,587.6</td>
</tr>
</tbody>
</table>
This implies that, in the face of tight monetary conditions, larger corporations having access to the corporate bond market found it less difficult to finance their activities compared to SMEs, that rely mainly on banks.

Table K2: Trends of Corporate Bonds Issuance Ratios by Firm Size

<table>
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<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Firms</td>
<td>88.7</td>
<td>94.2</td>
<td>92.4</td>
<td>99.4</td>
</tr>
<tr>
<td>SMEs</td>
<td>11.3</td>
<td>5.8</td>
<td>7.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: The Bank of Korea

Figure K9 provides evidence of a disproportionate burden of the crisis on SMEs. It seems that provinces where SMEs are over-represented, namely Pusan and Daegu, experienced a noticeably higher ratio of dishonored bills.

Although it is not easy to assess any causality, we should notice that also loans to Pusan and Daegu provinces\(^\text{18}\) shrank more than for Seoul, the province where large firms

\(^{18}\) It is worth noticing that two banks originated to lend to SMEs—their minimum lending requirement to SMEs was 70%, even higher than for local banks—in these two provinces came under distress at the time of the crisis. These
tend to concentrate (Figure K10). Furthermore, the drop in SMEs’ production was much sharper than that in overall production (Figure K11) and the information on bankruptcies by type (Table K3) lends additional support to the argument that the crisis indeed hit SMEs hardest.

<table>
<thead>
<tr>
<th>Table K3: Corporate Bankruptcies by Type (numbers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporations</td>
</tr>
<tr>
<td>Large firms</td>
</tr>
<tr>
<td>SMEs</td>
</tr>
<tr>
<td>Households</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

In response to a disproportionate burden imposed on SMEs by the crisis and considering their importance in the Korean economy, the authorities launched various credit schemes to support SMEs. The monetary authorities tried to alleviate SMEs’ burden by implementing measures aimed at (i) improving banks’ incentive to lend to SMEs, and (ii) facilitating SMEs’ opportunity of accessing credit (see Appendix 1 for further details).

Indeed, SMEs’ distress and bankruptcies have been a dominant factor behind corporate restructuring in Korea. While a “centralized” approach for corporate workouts was selected for Chaebols, a “decentralized” approach was chosen for SMEs. SMEs were classified into three categories. The first, comprising approximately 35% of SMEs, consisting of firms reputed to be “viable”. The second—60% of SMEs circa—including firms deemed “conditionally viable” after restructuring. The third category—approximately 5% of SMEs—grouping firms reputed “non-viable”, not deserving of restructuring. While no additional credit accrued to “non-viable” SMEs and lack of credit was never a problem for the top tier of “viable” SMEs, credit stringency was reportedly disruptive for many “conditionally viable” firms, even after the corporate workout approach was implemented. Since “conditionally viable” firms represented almost two thirds of SMEs, credit constraints for SMEs were likely quite pervasive.

A survey conducted in December 1998 by the Korea Federation of Small Businesses revealed valuable information on the effectiveness of these schemes. More precisely, according to the survey the most effective ones among the various schemes were those prescribing the roll over of lending maturity (43.3%) and those providing credit guarantees (16.1%). The survey also pointed out that the financial condition for the second tier SMEs classified as “conditionally viable” deteriorated because of a flight to quality by bank lending. A lesson that we may draw from this experience is that workout schemes that identify as “good risks” only a small fraction of firms may actually do more harm than benefit. Indeed, to the extent that only a few firms are identified as bad risks and good risks, the former will be easily written off, the latter will be flooded with credit offers, while the bulk of firms will still be in a gray area where banks are even more reluctant than before to take action. It might have been a better idea to identify just

were Dongnam Bank (in Pusan)—rescued via an assisted merger with Korea Housing Bank—and Daedong Bank (in Daegu)—rescued via an assisted merger with Kookmin Bank.

19 In Korea SMEs are defined as companies with fewer than 300 employees and assets of less than 80 billion won. As of 1997, there were 2.85 million SMEs, accounting for more than 98% of enterprises. Based on 1996 figures, nearly 100,000 SMEs were in the manufacturing sector, representing 47% of total value added and 42% of total exports.
the "bad risks" rather than venturing into identifying also the "good risks". This action would have still led to writing off the non-viable but would have fallen short of providing the incentive for a flight to quality away from the bulk of the SMEs (the "conditionally viable" ones) and towards those that were now labeled "viable".

7. Increase in the rejection rate of loan applications

No such information was available for Korea.

8. Shortening in the maturity of financial intermediation

Also in Korea, there was a noticeable reshuffling of deposits towards shorter maturity, potentially leading banks to reduce the maturity of loans, thereby increasing the cost of external finance. Specifically, deposits with maturity of less than six months (with maturity between six and twelve months) that were marginal pre-crisis became almost (half) as large as those with maturity between one and two years (Figure K12).

9. Evidence on contraction in pre-committed loans

Contrary to other countries—notably Malaysia (see below)—where an increasing share of lending took the form of revolving credit and/or overdraft loans, this did not happen in Korea: The share of overdraft loans in total loans exhibited a moderate downward trend (Figure K13). However, this is also consistent with increasing bank reluctance to lend. In fact, outstanding credit limits—a variable that helps identify bank's autonomous supply decisions (Ferri and Kang 1999)—decreased sizably after the crisis (Figure K14).

10. Other relevant issues

Three additional issues are worth mentioning. First, the retrenchment in loan supply in Korea seemed at least partly aggravated by the rapid enforcement of more stringent capital adequacy standards.²⁰

²⁰ At least two papers have shown that less capitalized banks cut loans more sharply: e.g. Ferri and Kang (1999); Choi (2000).
Second, some observers worried that bank M&A might lead to cut credit supply. Specifically, this could happen since: i) in some cases of domestic M&A (e.g. Korea Housing Bank acquiring Dongnam Bank or Kookmin Bank acquiring Daedong Bank) the acquiring bank lacked the corporate credit culture and could lead the acquired bank to cut down on corporate loans; ii) in some cases of foreign M&A (e.g. HSBC attempting to acquire Seoul Bank\(^\text{21}\), New Bridge Capital acquiring Korea First Bank\(^\text{22}\)) the acquiring institution declared its intent to streamline the acquired bank by shedding its branch network and this could impair lending to SMEs.

Third, it was mentioned that the current working of the Credit Bureau managed by the Korea Federation of Banks should be improved to diminish banks’ reluctance to lend to SMEs. Specifically, the Credit Bureau collects information on loans only beyond a certain threshold. Until 1998, such threshold was 500 million won (approximately 417,000 US$ at the end-1998 exchange rate). Although, the threshold was lowered later to 100 million won, the high threshold for the past \textit{de facto} excluded most SMEs, whose credit history could not be observed in the Credit Bureau files at the time of the crisis. Thus, banks—being unable to observe the credit history of new applicant small firms—could likely refrain from extending credit to them. Reportedly, this exacerbated credit constraints for those small businesses that were borrowing from a distressed bank only.

4.3 Malaysia

1. Degree of increase in real interest rates following the crisis

Although Malaysia was less prompt than the other affected countries to enact a monetary restriction to counter the crisis, the real lending rate increased even there with respect to its pre-crisis level. Specifically, the real overnight rate and the real lending rate stood above their pre-crisis levels for a protracted number of months (Figure M1).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{M1.pdf}
\caption{Real Money Market and Average Lending Rates}
\end{figure}

\textsuperscript{21} Initially, the Korean government and HSBC reached a Memorandum of Understanding (February, 1999). But, failure to negotiate further details held the deal back. Negotiations were terminated in August, 1999.

\textsuperscript{22} In December 1999, the Korean government sold 50.99 of its 100 per cent shareholing in Korea First Bank, to the KFB Newbridge Holding Ltd.
2. Increase in the spread between lending rate and interest rate on risk-free assets

Although the spread between the average lending rate and the 3-month T-bill—capturing both the general risk premium and the bank dependent borrowers’ specific spread—declined somewhat subsequently, it reached its historic peak in early 1998 for both commercial and merchant banks and remained above pre-crisis levels (Figure M2).23

M2. Rate Spread Lending vs. 3-Month T-bill (3-month moving average)

M3. 12-month Rate of Growth Rate of Real Loans

3. Extent of decline in the growth of real loans

Despite repeated reductions in lending rates, the annual growth rate of loans in Malaysia remained anemic and indeed turned negative in real terms since September 1998 (Figure M3). The sharp slow-down in lending activity can be explained by three factors: i) the heightened corporate risks and the uncertainty about the path of corporate debt workouts; ii) the capital crunch as bank capital was impaired; iii) the directive to banks issued in October 1997 by the Monetary Authorities to reduce the growth of credit lines extended to customers in an effort to curb the excessive credit growth.

It appears that the Monetary Authorities deemed the expansion of loans to be excessive but were reluctant to curtail it by raising the intervention rate, considering the harmful impact on highly leveraged Malaysian corporations. Accordingly, the directive to limit the growth of credit lines was issued on the grounds that it might have less serious consequences. The adoption of this directive seems also consistent with the fact that Malaysia increased its intervention rate less than other crisis countries did. However, it would be difficult to rule out that such directive played a role—possibly leading banks to overreact in the face of the crisis—both in curtailing the availability of credit and in increasing lending rates relatively to other market rates.

4. Evidence of flight to quality by depositors

4.1 Among Domestic Banks

The downward trend in loans was more prominent in the case of finance companies and merchant banks compared to commercial banks (Figure M5). In fact, as other crisis countries, Malaysia also experienced a reshuffling of deposits across banks: Finance

23 See Box 2 in Appendix 2 for details on the computation of these spreads.
companies and merchant banks suffered a marked deposit outflow, to the benefit of commercial banks that were perceived by depositors less likely to fail (Figures M5-6). Finance companies tried unsuccessfully to resist the deposit flight by offering higher rates (Figure M7).

4.2 Domestic to Foreign Banks

The flight to quality by depositors increased—at least temporarily—also the market share of foreign banks (Figure M6).

5. Evidence of flight to quality by banks (e.g. via larger purchase of securities)

The share of T-bills and government securities in total assets increased for all types of domestic banks with respect to the pre-crisis status (Figure M8), a sign of a decline in banks’ willingness to lend.
6. Evidence of disproportionate contraction in loans to SMEs

Small and medium-sized industries (SMIs) may have been protected from the crisis to some extent by the well-endowed government sponsored credit schemes dedicated to them. As a matter of fact the share of SMI loans on total bank loans outstanding stayed flat across the crisis or even slightly increased (Figure M9). However, to the extent that reported SMI loans represent those loans which benefit of the above schemes, they might not entirely reflect trends in credit to the whole segment of small businesses. Something on this respect may be gauged by observing the distribution of loans by size. Given that, in general, small businesses will demand smaller-sized loans and large firms will demand larger loans, the distribution of loans by size contains important information on which business segments receive more or less credit. Figure M10 reports the share of outstanding loans broken down according to three different size brackets. It is interesting to notice that the shares of both the smaller and the medium sized loans dropped, while the share of larger sized loans increased.

7. Increase in the rejection rate of loan applications

The trend in the rejection rate of loan applications received provides a very important indication clearly identifying banks' loan supply retrenchment. Both in terms of amount and of number of applications, the rejection rate more than doubled—with
respect to pre-crisis levels—and remained consistently higher than pre-crisis (Figure M11). The persistence of a high rejection rate provides an even stronger indication of banks’ supply retrenchment considering that loan applications dramatically shrank (Figure M12), possibly reflecting—beside lower demand—the fact that perspective borrowers were discouraged to apply by the increased rejection rate of applications.²⁴

8. Shortening in the maturity of financial intermediation

Although not as severe as in Indonesia, there was a reshuffling of deposits towards shorter maturity. The share of 1-month fixed deposits (of fixed deposits with maturity up to 3-month) on total fixed deposits—fixed deposits are the bulk of Ringgit deposits—increased from 39% (63%) in June 1997 to 46% (68%) in June 1998 (Figure M13). This shift was not justified by higher rates for the 1-month maturity with respect to the other maturities. Instead, a shift in the public’s desire for liquidity played a major role. As a consequence of the shortened maturity of liabilities, banks abbreviated the maturity of loans—the share of loans with maturity above 1-year slightly declined from 45% in June 1997 to 44% in September 1998—thus likely increasing uncertainty for corporates regarding their access to external finance.

9. Evidence on contraction in pre-committed loans

Regarding the availability of credit, it is useful to analyze the expansion of loan commitments—a supply driven variable—and the trend in the ratio between outstanding drawn credit and outstanding credit limits—whose increase may identify loan demand pressure relative to supply. Available data clearly identify a retrenchment in banks’ loan supply, suggesting that reveals that borrowers had to rely more on shorter term and generally pre-committed facilities. In spite of the marked slow down in loans outstanding, the ratio between loan commitments extended and loans outstanding dropped by 10 percentage points between the pre-crisis and the autumn of 1998 situation

²⁴ It is worth mentioning that the Malaysian introduced an administrative procedure to deal with loan applicants who feel their application was unjustly turned down by a bank. A specific office of Bank Negara was in charge of receiving and dealing with such complaints. In those cases in which the office recognized that the bank rejected the loan application improperly, an order was issued to the bank to grant the loan. While this procedure addressed the important problem of the depletion of banks’ informational capital, it appeared cumbersome and potentially interfering with the freedom of market forces.
At the same time, the utilization of outstanding credit limits rose from around 40% to almost 55% (Figure M15).

4.4 Philippines

1. Degree of increase in real interest rates following the crisis

In the Philippines, during the second half of 1997 and in the first few months of 1998, the real discount and average lending rates both increased with respect to their pre-crisis levels (Figure P1). Both rates subsequently declined, the real lending rate remained higher than pre-crisis even thereafter. Indeed, in the case of the Philippines, the gap between lending and discount rates shrank—while here we take its widening as an indication of banks' growing unwillingness to lend—and started to open up again only in recent months.
2. Increase in the spread between lending rate and interest rate on risk-free assets

Combined with the slow-down in lending activity, the evolution of the relevant spreads underscores the strain caused by the crisis as evidenced by the large spike in the case of SPRO (lending rate minus t-bill rate) and SPR2 (lending rate minus commercial paper rate) at the peak of the crisis (Figures P2).25

3. Extent of decline in the growth of real loans

In spite of relatively strong initial conditions and a less pronounced adverse impact of the crisis on economic activity compared to other economies in the region, the Philippines has also experienced a marked decline in its growth rate of real loans since the beginning of 1998, which turned negative in September 1998 (Figure P3).

The unwillingness of banks to extend loans to the corporate sector could be explained, inter alia, by: (i) the often poor quality of borrower financial information; (ii) the inability of lenders to seize the collateral pledged by a defaulting debtor in cases where a suspension of payments has been granted by the SEC; (iii) a requirement that seized collateral be held for one year in order to give the debtor the possibility to repurchase it; and (iv) the requirement, immediately upon seizure of collateral, for the lender to pay a 6% transfer tax and a 1.5% documentary stamp tax.26

4. Evidence of flight to quality by depositors

4.1 Among Domestic Banks

A salient feature common to other crisis countries—the reshuffling of deposit across banks—took place also in the Philippines. There was a flight to quality from private development banks and saving banks to commercial banks (Figure P4). This observation implies that customers that largely rely on these banks may have found it particularly difficult to obtain loans, and thereby resume their activities.

25 See Box 2 in Appendix 2 for details on the computation of these spreads.
4.2 Domestic to Foreign Banks

No such information was available for the Philippines.

5. Evidence of flight to quality by banks (e.g. via larger purchase of securities)

As shown in Figure P5, the share of government securities in commercial banks' assets exhibited an upward trend since February 1998. Concurrently, the share of loans as a percentage of total assets decreased. These two observations combined can be interpreted as a sign of a decline in banks' willingness to extend loans as they devoted increasing part of their assets to risk free government assets.

6. Evidence of disproportionate contraction in loans to SMEs

Information on bank lending to SMEs was not available for the Philippines. Some general indication on this can however be gleaned by analyzing the evolution of lending at the regional level. The evidence—referring to savings banks only because this was the sole type of banks for which adequately disaggregated data were available—suggests that loans were cut more in those regions where SMEs are concentrated (Central Visayas and Southern Tagalog) compared to Manila, where instead large firms are concentrated (Figures P6-8). Indeed, the authorities intervened to alleviate the difficulties in accessing credit faced by SMEs. However, poor quality of collateral available to acquire SME loans was reportedly a major obstacle that even undermines the effectiveness of government interventions.27 The fact that banks cannot use pledges secured by inventories and accounts receivable as collateral also weakens the effectiveness of these interventions since SMEs typically own inventory, accounts receivable and a few fixed assets all housed in leased premises.28

7. Increase in the rejection rate of loan applications

No such information was available for the Philippines.

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27 Ibid.
28 Ibid.
8. Shortening in the maturity of financial intermediation

Available data suggest that the share of short-term and medium-term loans in the total declined, to the advantage of long-term loans (Figure P9). It is, however, possible that the increase in long-term lending was policy induced.

9. Evidence on contraction in pre-committed loans

No such information was available for the Philippines.

10. Other relevant issues

Although the average lending rate trended downward since early 1998 (Figure P10), the gap between highest and lowest loan rates—for which information was published only starting with September 1997—expanded since March 1998 (Figure P11). In the light of the marked slow-down in lending activity, this was negative news as it indicated banks' intensifying rate discrimination that could imply higher costs of funds for less well reputed customers but it was also positive news as it hinted less credit rationing for less well known customers.
4.5 Thailand

1. Degree of increase in real interest rates following the crisis

The real money market and lending rates in Thailand increased with respect to their pre-crisis values during the second half of 1997 and first half of 1998 (Figure T1). In addition, there was a widening in the gap between lending and money market rates—which here we take as an indication of banks' growing unwillingness to lend.

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29 Although it is impossible to be as analytic as for the other countries, we can still show that some of the phenomena identifying the disruption in the credit market in the other crisis countries emerged for Thailand as well. In the absence of a visit by the team to Bangkok, the section on Thailand is rather sketchy. Only some of the relevant data were obtained thanks to the help of Stijn Claessens and his team. The interest rate data used in this section is the simple average of interest rates for 36 commercial banks operating in Thailand: as such it may differ from some of the published data, referring to the first five banks only.
2. Increase in the spread between lending rate and interest rate on risk-free assets

In the case of Thailand, since government securities were not issued, the relevant risk-free yield used is that on bonds issued by state enterprises. Figure T2 shows that, indeed, during the third quarter of 1997 the spread increased, although it went back to pre-crisis level in the final quarter of 1997.

3. Extent of decline in the growth of real loans

The growth of real loans slowed down substantially after the crisis ensued and became negative in the summer of 1998 (Figure T3).

4. Evidence of flight to quality by depositors

Between December of 1996 and December of 1997, disregarding finance companies, the deposit market share of domestic banks decreased from 98% to 95%, to the benefit of foreign banks (Figure T4). In relative terms, the loss in the deposit market inflicted by depositors' flight was more acute for the small Thai banks than for the larger domestic banks.
Domestic banks tried to counter the deposit outflow in favor of foreign banks by increasing their deposit rates more than the latter did (Figure T5). By the same token, small Thai banks increased their deposit rates more than domestic large banks.

5. Evidence of flight to quality by banks (e.g. via larger purchase of securities)

No such information was available for Thailand.

6. Evidence of disproportionate contraction in loans to SMEs

No such information was available for Thailand.

7. Increase in the rejection rate of loan applications

No such information was available for Thailand.

8. Shortening in the maturity of financial intermediation

No such information was available for Thailand.

9. Evidence on contraction in pre-committed loans

No such information was available for Thailand.

5. Some Possible Remedies to the Problems Posed by the Credit Crunch

The retrenchment in banks' supply of loans that precipitated the credit crunch was a market response to various external stimuli. Although the initial liquidity shortage and interest rate increase did not last long, credit markets disruption was lasting. This meant that for an extended period of time businesses found it harder than before to having access to credit, and this may have limited or retarded recovery.

As we have amply stressed, this difficulty in having access to credit is more pervasive for small and medium-sized enterprises (SMEs) than for large corporations. This happens for two main reasons. First, because larger borrowers—being usually “better connected” and more influential—obtain preferential treatment. Second, because it objectively becomes more difficult for banks to evaluate which small businesses are “good risks”. Corrective actions are called for, especially considering that SMEs are generally a force of change toward a deeper rooted market economy. Thus, the deployment of temporary government supported credit schemes has to be viewed favorably, in spite of its potential distortions. In fact, support credit schemes proved effective instruments to countervail the discrimination against SMEs due to preferential treatment of influential borrowers. Of course, accepting the idea of government intervention should not discourage searching ways to reduce distortions implicit in the credit schemes: For instance, it would be desirable to minimize the interest rate subsidy component and to maximize the liquidity provision component.

39 The financial systems of these countries may have been particularly vulnerable to shocks because of liberalization that was premature and not accompanied by adequate regulatory structure. See, for instance, Caprio, Atiyas and Hanson (1994).
These schemes, however, do not address the second issue, namely the fact that it becomes more difficult to distinguish the “good risks” from the “bad risks”. In this respect, further considerations are needed.

What changed most in credit markets with respect to the pre-crisis situation was that much of the informational capital accumulated in banks was damaged or depleted. In turn, this may worsen the allocation of credit. There are at least three components to the informational capital depletion.

First, a substantial part of crisis countries’ banks went out of business—either through closure or via (assisted) merger. Many customer relationships between those banks and their borrowers were severed. Even in the case the incumbent bank was merged with another bank, instead of being just closed, there is little guarantee that all the relevant information on borrowers was passed on and/or is effectively used by the new bank. This implies that many customers who were just borrowing from the distressed bank may have found it particularly hard to get new credit, or even to hold to what they previously had been granted. This is the case especially when the acquiring bank was lacking the “corporate lending culture” that the distressed bank had. In fact, if the distress is not caused by mismanagement but is the result of a systemic crisis, it is likely that the sounder banks were lending little and they acquired banks that were lending a larger share of their assets. In practice, in the case of such mergers, it would be desirable to make supervisors watchful to minimize the loss of “corporate lending culture”.

Second, surviving banks were called to rapidly strengthen their paid in capital base: to the extent that their informational capital is factored in as goodwill capital, they could have an incentive to under-invest in terms of the information they collect on borrowers. In practice, the accumulation of information on borrowers is a costly process that gives returns over an extended time. To the extent that banks were required to quickly upgrade their paid in capital, they might have a “perverse” incentive to shift their portfolio toward risk-free assets—e.g. government securities—or toward lending to prime customers, who are unanimously believed to be better risks and do not require the costly investment in information gathering and processing. Once more, supervisors could be made proactive to avoid that the flight to quality curbs lending to viable borrowers. Furthermore, it could be desirable to stiffen capital standards in a gradual way. Finally, supervisory forbearance could be applied in a least distortionary pattern: e.g. considering that recovery postulates a massive re-deployment of resources from “non-traded” to “traded” sectors, lower capital requirements could be applied against loans to viable exporting firms, that will likely benefit from the exchange rate devaluation.

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31 For instance, Bongini, Claessens and Ferri (2000) find that, between July 1997 and July 1999, 42% of their (good coverage) sample of financial institutions from the five East Asian crisis countries became distressed and 13% were closed.

32 This reasoning is analogous to that of Hellman, Murdoch and Stiglitz (1999), who argue that enforcing increased capital standards will lead banks to rely more on the paid in capital component to the detriment of the “informational capital” component. Accordingly, enforcing increased capital standards may induce banks to “under-invest” in their screening and monitoring of borrowers, thus leading to a worsening—rather than an improvement—in the allocation of credit.

33 The new Proposal to revise Bank Capital Asset Requirements put forth in June 1999 by the Basle Committee on Banking Supervision might reinforce the incentive for banks to shift their loans away from the less reputed borrowers and toward the prime customers during a systemic crisis. Indeed, the Proposal suggests to reduce bank capital requirements for loans to highly rated customers and the incentive for banks to shift to these customers would be greatest when they are capital constrained in a systemic crisis.
Third, most likely many loan officers in East Asian banks were replaced as a result of market sanctions trickling down from the top management to them. Unfortunately, as much as it may be desirable to show that market sanctions work, the departure of these loan officers may be bad news. Once more, the evidence that their loan portfolio has turned sour at a time of systemic crisis is not enough to claim that this was the result of mismanagement. And, indeed, replacing these loan officers under those circumstances may be like "throwing away the baby with the bath water". In fact, those loan officers were the likely repository of confidential information on borrowers and their removal may well mean that part or all of that information is lost to the bank. Thus, supervisors might find it beneficial to suspend loan officer turnover—excluding of course the case of fraudulent behavior—at the time of a systemic crisis.

4.1 Efficiency of the Judicial System

4.2 Rule of Law

In the midst of East Asian banks’ informational capital depletion, it must also be noticed that East Asian economies traditionally relied on informal links and contracts to a larger extent than most other economies. In fact, these countries ranked relatively low in terms of both the efficiency of judicial systems and the rule of law, two major variables reflecting the effectiveness of law enforcement. As Figures 4.1-2 show, East Asian crisis countries—with the only exception of Malaysia—ranked not only below the average for OECD countries but also below the average of the 49 countries considered by La Porta et al. (1996).³⁴

This suggests that informal links and implicit contracts were there to complement the inadequate status of formal law enforcement. In terms of financial sources, furthermore, these countries relied on banks much more than other comparatively developed economies. As such, the impoverishment of bank informational capital was bound to have more pervasive effects there than in countries with better developed financial markets.

A related aspect is the effectiveness of information sharing among banks, a vital aspect for efficient loan allocation in general which may become even more vital during a systemic crisis.³⁵ Indeed, the negative consequences of distress impairing some of the

³⁴ Data from: La Porta, Lopez-de-Silanes, Shleifer and Vishny (1996).
³⁵ Jappelli and Pagano (1993) and (1999) show that information sharing among banks is favorably influenced by: a) larger mobility of households and dimension of the consumer credit market; b) less degree of competition and/or more regulatory segmentation in the domestic banking market; c) better status of technological development in the banking
banks could be limited if the information on borrowers collected at such incumbent banks were also available to new entrant banks. Unfortunately, however, the situation of East Asian crisis countries in terms of information sharing among banks could be improved. Malaysia and Indonesia have a Credit Register run by the Central Bank, however both cover only a limited credit history of borrowers. In addition, at the time of the crisis, the Malaysian Credit Register was being restructured to allow for better communication between the "white information"—the information on properly performing loans—and the "black information"—that on non-performing loans. Korea and the Philippines have a Credit Bureau run by the local Bankers' Association. Until recently, the Korean Credit Bureau collected information only on relatively large borrowers, since its threshold below which loans needed not be reported was rather high. In the Philippines, the Credit Bureau collects "black information" only and there are plans to upgrade it to include "white information" as well. The Bank of Thailand has publicly held that the lack of an efficient mechanism of information sharing among banks is one of the major culprits behind the reluctance of banks to lend. Accordingly, the Bank of Thailand announced that it intended to institute a scheme for information sharing among banks.\textsuperscript{36}

What could be done against this unsatisfactory background? Introducing a Credit Bureau/Register where there was none is a sensible course of action. Collecting also "white information" where only "black information" was gathered is also a good measure. Lowering the threshold for loan information accruing to the Credit Bureau/Register where such threshold was relatively high is to be welcomed too.

These actions, however, are likely to harvest positive results only in the future, possibly in the distant future, and would be of little help to deal with an incumbent credit crunch. Something else would be needed.

A sensible course of action might be to enforce mandatory backward reporting from banks to the Credit Bureau/Register. This would establish credit histories for borrowers that could be made available to banks that have to decide whether to accept loan applications from new borrowers or turn them down. It seems that it would be most valuable to gather such information particularly from those banks under distress, whose borrowers are most likely to have to turn to a new bank, to which they may be unknown borrowers.

Alternatively, administrative procedures to deal with "wrongly" rejected customers were adopted by some countries. Although we do not have information on how effectively it worked, an example in this respect is the Malaysian experience. Reportedly, the Malaysian introduced an administrative procedure to deal with loan applicants who felt their application was unjustly turned down by a bank. A specific office of Bank Negara was in charge of receiving and dealing with such complaints. In those cases in which the office recognized that the bank rejected the loan application improperly, an order was issued to the bank to grant the loan. It is clear that this administrative procedure carried with it major risks of potentially distorting market-based decisions by the banks.

\textsuperscript{36} Asia Wall Street Journal (1998).
Another possible—likely less distortionary—administrative measure could have the Central Bank collect the information on credit histories of borrowers at distressed banks and issue to credit-worthy borrowers a “credit voucher” that these perspective customers can exhibit when applying for loans to a new bank. Of course, the new bank would not be forced to grant the loan but, in any case, the “voucher” would vehicle information potentially important for the lending decision that the bank might find it difficult to obtain otherwise.

While publicizing credit histories can lower the depletion of banks’ informational capital for those customers who were already borrowing in the past, little can be done through these means for new customers, who never had loans from any bank.

A final issue pertains to corporate restructuring. In some cases—e.g. Korea—corporate workouts identified a tiny fraction of firms as “bad risks” (or non viable firms) and a relatively small fraction of firms as “good risks” (or viable firms), while leaving the large majority of firms in the gray area of potentially viable firms. This was certainly well meant to reduce the perception of risk on the part of banks at a time when such perception of risk was impairing bank lending, especially to SMEs. Unless these schemes are able to identify as “good risks” the large majority of firms, however, the identification of “good risks” may do more harm than good in a systemic crisis. In fact, this may precipitate a flight to quality away from firms which, though being viable, are not immediately recognized as such: in such a case, even though they were viable, lack of liquidity may cause them to become “non-viable”. Thus, in a systemic crisis, if the workout scheme cannot identify as “good risks” the large majority of firms, a preferable course of action would be to focus on identifying just the “bad risks”.37

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37 Once more, as argued by Miller and Stiglitz (1999), policy action in a systemic crisis must start recognizing that the liquidity shortage is generalized. Accordingly, one should avoid adopting policies that—though well meant—effectively aggravate the liquidity strain for profitable and potentially profitable firms.
APPENDIX 1: MEASURES TO SUPPORT SMEs IN KOREA

The Korean monetary and bank regulatory authorities took the following measures in order to recover liquidity flows to SMEs.

Relaxation of prudential regulatory restrictions. In October of 1998, the Banking Supervisory Authority (BSA) unveiled detailed action program to support SMEs. The three key components of this program were the following. First, relaxation of the commercial banks' loan screening criteria for SMEs. Specifically, SMEs could pay just normal interest rather than penalty interest for their loans overdue if they resume a redemption of merely interest portion of loans contract. Second, exemption of loan officers from their responsibility in lending to SMEs. Third, increasing the weight of the "amount of loans granted to SMEs" to the greatest item among the other list of items when evaluating each bank's management performance by the BSA.

Reinforced criteria in rediscount facilities. In October of 1998, the Bank of Korea (BOK) announced that it would strengthen the incentives of commercial banks to lend to SMEs through increasing penalties in allocating rediscount facility to those banks not meeting their obligated SMEs lending ratio.38

Increased credit guarantee schemes (Table K4). These schemes removed the default risk from bank books. Guarantees carried over lower risk weighting than collateral in calculating the BIS ratio for banks.39

Table K4. Trend of Credit Guarantees (billion won)

<table>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Outstanding amount</td>
<td>10,450</td>
<td>11,698</td>
<td>13,815</td>
<td>17,052</td>
<td>31,749</td>
<td>31,666</td>
</tr>
<tr>
<td>Net increase</td>
<td>6,406</td>
<td>8,224</td>
<td>10,182</td>
<td>12,158</td>
<td>25,143</td>
<td>26,214</td>
</tr>
</tbody>
</table>

In July of 1998, the Korea Export Insurance Corporation raised its limit on the guarantee of individual firm's trade financing from 2 billion won to 5 billion won. In August, the individual firm's ceiling of credit guarantee for the trade financing has been expanded from 1/3 of its annual sales amount to 1/2 of its annual sales. Guarantees associated with SMEs' import financing of raw materials has been increased to 10 billion won per individual firm or 1/3 of firm's annual sales with guarantee commission of 1.0% per annum (large firms: 1.5%).

According to the survey conducted by the Korea Federation of Small Businesses in December 1998, most SMEs pointed out the following bottlenecks in credit guarantee schemes: i) credit guarantee limit was determined by past performance of annual sales (26.6%); ii) procedures to access credit guarantee schemes were too complicated for SMEs (24.0%); and iii) credit guarantee funds imposed additional requirements in the form of personal guarantor attached to new credit guarantee (14.3%). All in all, this implied that the flight to quality enacted also in the allocation of credit guarantee funds so that most of credit guarantees were concentrated on fewer sound SMEs.

38 The unutilized amount by the bank will be redistributed to other eligible banks that exceed the compulsory ratio. Furthermore, the BOK expanded the eligibility of trade financing facilities for purchasing final products by the SMEs exporters who are not eligible for the facility. Currently, this facility is available only for SMEs exporters when they purchase materials for export goods and production costs of exporting goods.

39 Thus, the Korean government further recapitalized the Korea Credit Guarantee Fund and Korea Technology Credit Fund through injecting fiscal funds for this purposes. In 1998, the government spent 1,300 billion won, more than double the amount compared to 1997 (600 billion won), in its recapitalizing these two guarantee funds. Moreover, the government established a $1 billion fund from the Asian Development Bank (ADB) as a special credit guarantee for SMEs. This fund was also used to recapitalize these two main credit guarantee funds.
Restoration of credit flows to SMEs. The following schemes to assist SMEs were introduced to restore credit flows to SMEs:

- The BSA required banks to roll-over SME loans due by December 1998. Between June 29 and November 30 of 1998, the roll-over ratio stood at 89.3%. In December 1998, as a temporary measure, the BSA also ordered commercial banks that SME lending due in January-June of 1999 should be rolled over at least 6 months.

- The BSA ordered commercial banks to cancel their compensating balance requirement for SMEs between January and November 1998 (7,185 billion won) so that SMEs would have room for accessing additional loans. Between January and November 1998, 7,185 billion won worth of compensating balances were cancelled—out of the total SMEs lending of 128,820 billion won.

- The BSA ordered special lending programs for SMEs. The relatively larger and stronger 15 commercial banks were required to lend 14.8 trillion won to SMEs from their own funds. The BSA monitored each bank's performance through its on-site examination. As of October of 1998, 12 trillion had been loaned out.

- As of December 1998, for the trade financing of SMEs, $53 billion were allocated and $45.1 billion were actually used.

**Table K5. Trade Financing for SMEs (as of December 1998, in USD)**

<table>
<thead>
<tr>
<th>Allocated</th>
<th>Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase of Export bills of exchange</td>
<td>3.0</td>
</tr>
<tr>
<td>IBRD funds</td>
<td>10.0</td>
</tr>
<tr>
<td>BOK's foreign reserves over target ceiling</td>
<td>20.0</td>
</tr>
<tr>
<td>EXIM Bank funds</td>
<td>20.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>53.0</strong></td>
</tr>
</tbody>
</table>

- On September 1, 98 lending rate of the BOK aggregate credit was lowered from 5% to 3% for those credits with maturity up to three months. As of December 1998, 6.4 trillion won were allocated and fully used.

- A scheme allowing firms to use export bills as collateral against their borrowing from banks was introduced (Table K5). The BOK supplied additional liquidity by purchasing Monetary Stabilization Bonds held by commercial banks on repurchase agreement basis in order to give incentives to banks to lend to SMEs. BOK’s repurchase interest rate (12%) is lower than commercial bank’s lending rate (15%).

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40 Loans due maturity was 52,148 billion won and the amount of rolling-over was 46,580 billion won.
41 Typical rediscount facility which is allocated to individual bank in proportion to the outstanding amounts of the following three loans extended to SMEs: i) discount of commercial bills; ii) foreign trade financing; and iii) loans for production of parts and materials.
42 As a result of this measure, export bill of exchange collateral lending was increased to 437 billion won in November 1998 from 274 billion won in December 1997.
APPENDIX 2: THE INTERPRETATIVE FRAMEWORK

The crux of the framework employed in this note rests on the strand of literature referred as the credit view. The credit view analyzes in detail the ways in which monetary policy can influence the interaction between borrowers and lenders in financial markets and the resulting consequences for economic activity. By emphasizing a combination of capital market imperfections and portfolio balance effects based on imperfect asset substitutability, the credit view suggests the possibility that the policy's incidence may differ substantially across agents in the economy. The credit view encompasses two distinct channels: a balance sheet channel and a bank lending channel.

The balance sheet channel stems from the fact that monetary policy has non-neutral effects on the balance sheet of firms. A tightening of monetary policy stance leads to a decline in the net worth of firms for two reasons. First, as contractionary monetary policy causes interest rates to rise, the servicing of outstanding debt becomes more expansive and firms experience decreasing cash flows. Second, rising rates are followed by declines in asset prices. As a result, the value of marketable collateral declines and the wedge between the interest rates at which corporates can borrow and the yields on otherwise analogous risk-free assets rises. These adverse developments lead to more stringent conditions under which external finance becomes available. In practice, the external cost of finance rises which ultimately causes interest-sensitive expenditures such as investment to decline.

The bank lending channel exists because banks actively reshuffle their portfolio of assets in response to a change in the stance of monetary policy. More specifically, a tightening of monetary conditions evokes a reduction in the supply of banks loans relative to other sources of credit such as commercial bills. Bank lending declines primarily because banks cannot compensate completely the drain of reserves by issuing managed liabilities such as certificate of deposit. Since access to the short-term capital market restricted primarily to large firms, small firms, which rely on bank loans for the financing of investment spending, are deprived of their chief source of financial capital. This suggests that the credit channel is likely to particularly penalize the small and medium-sized enterprises (SMEs), most of which are de facto bank-dependent borrowers.4

An additional reason for SMEs being disproportionately affected by credit channel effects derives from the possibility that the monetary squeeze triggers a flight to quality in bank lending. More specifically, banks may respond to the monetary restriction, not only restraining credit generally, but also by adopting more stringent lending policies vis-à-vis customers that are perceived to be less credit worthy. That is, when a deposit drain squeezes their resources, banks will try to cherry-pick customers who are ex ante more credit-worthy: e.g. those having a more established credit record or those able to post more collateral. In turn, as stressed by Bernanke, Gertler, and Gilchrist (1996), the flight to quality in bank lending may trigger a financial accelerator effect along the following causal chain: the negative shock precipitates the economy

4 Gertler and Gilchrist (1994) show evidence consistent with this hypothesis.
44 In the first place, SMEs are too small to justify the fixed costs entailed by listing securities. In addition, even when they have the intention of issuing debt on the market, they will most likely refrain from doing so. Because of the low liquidity of their debt, investors would ask for very high yields, thus making issuance unattractive.
45 Bernanke, Gertler, and Gilchrist (1996) report evidence consistent with this hypothesis. A negative bias similar to that regarding SMEs might apply to fast-growing firms, since they have a higher ratio of expected future profits to the current value of physical assets and thus can provide lower collateral.
46 Lenders perceive SMEs to be more risky since they generally have a shorter track record and typically release less and less structured information.
into a recession; the recession makes borrowing constraints tighter; tighter borrowing constraints amplify the recession, and so on.47

The flight to quality in bank lending could also be in the form of banks' increasing their holdings of government securities in relation to their assets in response to a tightening of monetary conditions. This, combined with the decrease in loans in relation to banks' assets, is often interpreted as a sign of a decline in banks' willingness to extend new loans.

| Box 1: Illustration of the Relevant Spreads

The following expression presents the set of interest rate spreads which capture the credit channel effects of the transmission mechanism of monetary policy:

\[
SPR_1 = LR - TB = SPR_1 \cdot SPR_2
\]

where

- \(LR\) = lending rate;
- \(TB\) = Treasury bill rate;
- \(SPR_1\) = commercial paper rate - Treasury bill rate;
- \(SPR_2\) = lending rate - commercial paper rate.

The difference between rates on corporate commercial paper and on Treasury bills \(SPR_1\) measures the general risk premium as it is perceived by the market. If the balance sheet effect is at work, we expect that this spread will increase after the monetary restriction, reflecting the fact that private sector debt has become relatively riskier vis-à-vis sovereign debt.

The spread between the lending rate and commercial paper \(SPR_2\) is a proxy for the lending channel effect. The difference between lending rates and commercial paper rates quantifies the premium that bank-dependent borrowers must pay in order to raise external finance relative to those firms able to issue debt on the market. The lending channel effect contends that this spread will increase in the aftermath of the monetary squeeze.


A final ingredient that suggests SMEs are more penalized by the credit channel derives from the possibility that when a financial crisis ensues, depositors may also enact a flight to quality (safety). Envisaging increased bank fragility, depositors may shift their savings towards institutions that are perceived to be less likely to go bankrupt. To the extent that the smaller banks are seen as less likely to be bailed out by the Government, they may be the ones to suffer most in the deposit flight. Thus, it is likely that the institutions which receive new flows of funds have no established relationship with the borrowers of those institutions losing resources. Accordingly, the institutions receiving new flows are not likely to make loans to those borrowers. In this case, an additional credit squeeze may hit those customers borrowing from smaller banks, and SMEs, more than other firms, typically depend on small banks' lending.48

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48 Kashyap and Stein (1994, 1997) argue that small banks, rather than large ones, are more likely to be hit by monetary restrictions.
The selection of the lending rate has important implications in the analysis of the cost of credit intermediation. Posted commercial loan rates reflect loans that are actually made, not the shadow cost of banks to a representative potential borrower. Considering the fact that, in a period of retrenchment, banks extend only the safest and highest quality loans, posted loans rates may be underestimate the marginal cost of borrowing.

Consequently, selecting the proper lending rate becomes a crucial issue. For the sake of illustration, let us consider Malaysia. Official statistics publish either the average lending rate (ALR) or the base lending rate (BLR). However, these rates are inappropriate to reflect the marginal cost of borrowing for two reasons. First, the BLR is itself a rate indirectly controlled by the Central Bank. In addition, regulation constrains the extent to which the ALR can be set above the BLR. Second, because some types of loans bear interest rates determined on the basis of the “cost of funds” and therefore are more reflective of market conditions. The fact that the share of overdraft loans and revolving credit in total loans has increased noticeably provides a strong rationale for using this “cost of funds” based lending rate as the relevant proxy for the marginal cost of borrowing. Therefore, in line with market participants’ suggestions, an attempt is made to compute the shadow cost of lending (SCL) by using the following formula:

\[ SCL = IBR + \left( \frac{SSR}{100} \right) \times IBR + \left( \frac{LR}{100} \right) \times (IBR - TBR) + \left( \frac{Ratio}{3} \right) \times (IBR - TBR) \]

where SSR, LR, IBR, and TBR stand for statutory required reserve ratio, liquidity ratio, interbank rate (Klibor, Phibor, etc.), and treasury bill rate. The term Ratio is defined as the ratio of the pre-crisis average (1995.01-1996.12) of average lending rate minus treasury bill rate to the pre-crisis average of interbank rate minus treasury bill rate. The Ratio captures the average risk premium for bank borrowers during “normal times”. To be conservative, only 1/3 of the Ratio was applied.

Throughout this note, SCL is employed when calculating relevant spreads. SCL is modified, when necessary, to incorporate country specific factors. Since Korea already publishes the overdraft lending rate, there was no need to calculate the SCL. Due to lack of data, such a rate was not constructed for Indonesia and Thailand.

\[ \text{Bernanke (1983).} \]

As widely acknowledged, a decline in either bank loans or a decline in their growth following a monetary tightening is not sufficient to pin down an adverse movement in banks’ loan supply. This is because the decline could be induced either by the corporate sector demanding less credit -- because fewer investments are undertaken -- or by the banks’ reluctance to lend. By contrast, if the decline in (the dynamics of) bank loans -- a quantity variable -- is coupled with a widening of the spread between bank lending rates and interest rate on non-bank debt -- a price based variable --, then it can be argued that an adverse shift in the banks’ supply of loans is curtailing credit (See Box 1). In fact, such a situation is consistent with only two possibilities: either supply has declined whereas demand has not, or supply has declined more than demand.

\[ \text{Berger, Kashyap and Scalise (1995) document a strong correlation between relative size of the lending bank and relative size of the borrowing firm in the US: i.e. small firms tend to borrow from small banks and large firms to borrow from large banks. Angeloni, Buttiglione, Ferri and Gaiotti (1995).} \]
The framework we use also relies on a number of additional variables and credit market developments.

First, we use the territorial distribution of SMEs and information on the regional lending activity. These variables accompanied by the evolution of loans granted to SMEs relative to total loans have been utilized to gauge whether SMEs are suffering disproportionately.

Second, where available, the expansion or contraction of loan commitments -- a supply driven variable -- has been employed as an additional variable to pin down any retrenchment in the supply of loanable funds.

Third, another indicator of banks’ willingness to extend new loans is the trends in the rejection rate of loan applications and is adopted as an additional supply driven variable.

Fourth, the magnitude and the direction of inter-bank transactions is also considered as a sign of distress and, where detailed data was available, it was used to identify group of banks and consequently borrowers that were suffering disproportionately.

Last but not least, in other parts of the project, we look at individual bank data to assess whether the credit crunch was, at least partly, the result of a capital crunch.\(^\text{50}\)

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\(^{50}\) See, e.g. Hancock and Wilcox (1993).
References


