

Designing a Financial Market Structure in Post-Crisis Asia

—How to Develop Corporate Bond Markets—

Dr. Masaru Yoshitomi and Dr. Sayuri Shirai

March 27, 2001

Since the Asian financial crisis, strong and increasingly prevalent views have emerged that banks are no more functional and the economic development should rely on capital markets, particularly corporate bond markets. These views conclude that policies should place less emphasis on bank loans and that Asian countries should develop domestic capital markets as alternative more important sources of financing.

This paper attempts to examine whether policy implications suggested by these views are justifiable. The paper concludes that Asian countries should place high priority on strengthening the soundness of the banking system, while at the same time making strenuous efforts to develop corporate bond markets. Moreover, bank loans and corporate bonds are likely to be complementary to each other for financing economic development in many developing countries.



ADB Institute
Working Paper Series
No. 15

March 27, 2001

**Designing a Financial Market
Structure in Post-Crisis Asia**
–How to Develop Corporate Bond Markets–

**Dr. Masaru Yoshitomi
and
Dr. Sayuri Shirai**

ABOUT THE AUTHORS

Masaru Yoshitomi is Dean of the ADB Institute, and also a visiting Executive Professor at the Wharton School, University of Pennsylvania. Previously, he was Director-General of the Policy Coordination Bureau, Economic Planning Agency, Government of Japan (1991-2), and the Director of the General Economics Branch at the Organization for Economic Co-operation and Development, Paris (1984-7).

Sayuri Shirai is a visiting scholar at the Institute working in the fields of developing capital markets and strengthening financial and exchange systems. She is also an Associate Professor at Keio University and was formerly a staff economist at the International Monetary Fund.

Additional copies of the paper are available free from the Asian Development Bank Institute, 8th Floor, Kasumigaseki Building, 3-2-5 Kasumigaseki, Chiyoda-ku, Tokyo 100-6008, Japan. Attention: Publications.

Copyright ©2001 Asian Development Bank Institute. All rights reserved.
Produced by ADBI Publishing.

The Working Paper Series primarily disseminates selected work in progress to facilitate an exchange of ideas within the Institute's constituencies and the wider academic and policy communities. An objective of the series is to circulate primary findings promptly, regardless of the degree of finish. The findings, interpretations, and conclusions are the author's own and are not necessarily endorsed by the Asian Development Bank Institute. They should not be attributed to the Asian Development Bank, its Boards, or any of its member countries. They are published under the responsibility of the Dean of the Asian Development Bank Institute. The Institute does not guarantee the accuracy or reasonableness of the contents herein and accepts no responsibility whatsoever for any consequences of its use. The term "country", as used in the context of the ADB, refers to a member of the ADB and does not imply any view on the part of the Institute as to sovereignty or independent status. Names of countries or economies mentioned in this series are chosen by the authors, in the exercise of their academic freedom, and the Institute is in no way responsible for such usage.

PREFACE

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

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

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

Masaru Yoshitomi

Dean

ADB Institute

ABSTRACT

Since the Asian financial crisis, strong and increasingly prevalent views have emerged that banks are no more functional and that economic development should rely on capital markets. Such views claim that the Asian crisis was caused by heavy dependence of firms' investment on bank loans and that Asian commercial banks did not function as properly as those operating in some advanced countries, due to crony relations among banks, firms, and governments. These views conclude that policies should place less emphasis on bank loans and that Asian countries should develop domestic capital markets as alternative more important sources of financing.

This paper attempts to examine whether policy implications suggested by these prevalent views are justifiable by considering the following two categories of questions. The first category is about whether banks can be characterized as unsound and unfit institutions for economic development as often argued in the context of post-crisis Asia. Provided that existing economic theories and empirical studies clearly define basic functions and reason d'être of commercial banks, one then needs to ask: what went wrong with the banking system in Asia? The second category of questions focuses on why corporate bond markets are underdeveloped in many emerging market economies. By analyzing factors deterring the development of corporate bond markets, the paper then examines whether, why, and how the markets should be developed.

The paper stresses that banks' "relationships" with borrowing firms whose importance is justified by theoretical and empirical studies on banking have transformed into "cronyism" in Asia, owing to government interventions (in directing credit for financing selected projects and bailing out failing firms and banks regardless of their viability); lack of inadequate prudential regulations and supervision; ownership structure of banks; and, heavy reliance on collateral without proper monitoring. Therefore, policies should focus on how to improve banks' incentives to properly process information about their borrowers and monitor their performance, thereby strengthening prudential behavior of banks and the soundness of the banking system—not on how to shift development finance away from bank loans to market-based finance.

Moreover, the paper shows that developing a viable domestic bond market takes some time because of (1) the small number of large, reputable private firms, which can economically issue a large amount of corporate bonds, (2) limited demand for long-term bonds due to low financial asset accumulation and low per capita income, and (3) underdeveloped informational, legal, and judiciary infrastructures. The paper concludes that Asian countries should strengthen the soundness of the banking system, while at the same time making strenuous efforts to develop corporate bond markets. Moreover, bank loans and corporate bonds are likely to be complementary to each other for financing economic development in many developing countries.

TABLE OF CONTENTS

<i>Preface</i>	iii
<i>Abstract</i>	iv
Table of Contents	v
Executive Summary	1
1. Introduction	5
2. Features of the Financial Market Structure	9
<i>2.1. Importance of the Banking System</i>	9
<i>2.2. Growing Share of Corporate Bond Finance</i>	13
<i>2.3. Nevertheless, Largely Underdeveloped Corporate Bond Markets</i>	14
3. Inherent Features of the Banking System	23
<i>3.1. Information Problems in General</i>	24
<i>3.2. Raison d'être of the Banking System</i>	25
<i>3.3. Inherent Uniqueness of Bank Financial Services</i>	28
<i>3.4. Failure of the Banking System</i>	35
<i>3.5. Appropriate Regulatory System under the Bank-based Economy</i>	41
4. Inherent Features of Corporate Bond Markets	51
<i>4.1. Advantages of Corporate Bond Finance</i>	51
<i>4.2. Appropriate Regulatory System for Corporate Bond Markets</i>	55
<i>4.3. Factors Hindering Corporate Bond Market Developmen</i>	61
<i>4.4 Policies to Develop Corporate Bond Markets</i>	63
5. Conclusions	66
Appendix I. Other Benefits of the Banking System	71
References	73
Tables and Charts	
Table 1: Bank Loans, Corporate Bonds and Equities	
in Selected Asian Countries and the United States; End-1998	10
Table 2a: Thailand, Sources of Funds for Private Firms: 1995-2000	12
Table 2b: Thailand, Sources of Funds for SMEs: 1995-2000	12
Table 3: Indonesia, Sources of Funds for Manufacturing Firms: 1996-1998	13
Table 4: Korea, Sources of Funds for Manufacturing Firms: 1995-1999	13

Table 5: Outstanding Corporate Bond Issues in Selected Asian Countries and the United States	14
Table 6: Thailand, Corporate Bond Issuers by Industries: 1995-1999	16
Table 7: Indonesia, Corporate Bond Issuers by Industries: 1995-1999	17
Table 8: Korea, Corporate Bond Issuers by Industry: 1995-1999	18
Table 9: Thailand, Lead Underwriters for Corporate Debt Securities in the Thai Bond Dealing Center in 1999-2000	18
Table 10: Thailand, Maturity Structure of Corporate Bonds	20
Table 11: Korea, Maturity Structure of Corporate Bonds	21
Table 12: Thailand, Household Savings Pattern	22
Table 13: Indonesia, Household Savings Pattern	22
Table 14: Korea, Household Savings Pattern	23
Table 15. Different Methods to Reduce Information Asymmetry	26
Table 16. Stages of Economic Development and Corporate Formation	32
Table 17. Features of Information, Legal and Judiciary Infrastructures	43
Chart 1: Size of the Banking Sector and GDP per Capita	11
Chart 2: Financial Market Structure in Asia	70

Executive Summary

- Major differences between bank loans and corporate bonds depend on how to cope with the problems of information asymmetry between ultimate creditors and ultimate borrowing firms.
- In the case of bank finance, the ultimate creditors are depositors who make an investment in the form of deposits with commercial banks. However, it is not the depositors but the banks that directly bear the risks associated with lending to borrowing firms. Commercial banks cannot transfer such risks to depositors, although banks are intermediaries between deposit-taking and loan extension businesses. This suggests that commercial banks have to minimize their own risks by carefully monitoring borrowing firms. Through doing this, they try to cope with the problems of information asymmetry between borrowing firms and themselves. Generally speaking, commercial banks encounter three stages of asymmetric information problems: ex-ante (before lending), interim (during lending) and ex-post (in case of financial distress of borrowers).
- Commercial banks manage their own risks associated with extending credit to borrowing firms through three actions: (1) monitoring, (2) taking collateral, and (3) loan diversification. However, the monitoring functions play the most important role since the evaluation of the future value of collateral is difficult and loan diversification cannot eliminate bank credit risks. In order to monitor effectively their investment projects, commercial banks need to obtain useful “inside” information about the borrowing firms’ strategic planning, management performance, profitability, and asset holdings, etc. Access to such inside idiosyncratic information can be obtained through conducting repeated transactions that establish long-term relations with borrowing firms.
- Furthermore, commercial banks can gain inside information through opening settlement accounts, which provide actual inside information on performance and economic activities of borrowing firms. This is one great advantage that commercial banks have over other financial institutions which cannot open such settlement accounts. On the basis of inside information, commercial banks make a decision as to whether new loans should be extended and their short-term loans should be rolled-over.
- Idiosyncratic information obtained by commercial banks about specific borrowers is not “transferable” in the market. This is because it is highly individual (firm-specific) and hence, the content and quality of such information cannot be easily evaluated in the market.¹ For this reason, commercial banks become delegated monitors of borrowers on behalf of ultimate creditors (namely, depositors) and sometimes on behalf of other banks in view of expensive monitoring costs.

¹ Aoki (2000) defines “codifiable” knowledge as knowledge that can be formalized in such forms as accounting numbers, written and verbal reports, court-verifiable documents, etc., as well as knowledge that is gained through the analysis of their contents. On the other hand, “tacit” knowledge is defined as knowledge which cannot be obtained by a mere sum of codified (digitalized) information and is only shared in a limited, local domain through intimate “indwelling” within it and through relational contacting, or as personal knowledge through particular experiences and/or due to inherent personal qualities and competence. Thus, such knowledge does not become immediately available in open markets.

- Commercial banks specialize in extracting and processing information concerning borrowers through their close relationships with them and this feature is not replicable by individual investors. Depositors expect commercial banks to provide banking services, liquidity and, if possible, high interest rates on deposits—not information about banks' borrowers. This is true especially when a deposit insurance scheme guarantees the value of deposits. In other words, the banking system seriously attempts to reduce information asymmetry between banks (agents for depositors) and borrowing firms—but does not attempt to reduce the information gap between depositors (principals) and borrowing firms. This makes sense since commercial banks themselves directly bear the risk of extending bank loans.
- This idiosyncratic nature of information on borrowers is bound to be reflected in the extreme difficulty in assessing bank credit risks. Therefore, bank loans cannot so easily be marketable, except for reasonably standardized loans such as mortgage loans, etc. In other words, this difficulty in assessing credit risks of bank loans is often reflected in the extreme difficulty in securitizing banks loans, with the exception of mortgage bank loans whose returns and risks are relatively easier to evaluate. The value of banks' assets is also generally worth significantly less in the case of liquidation than the value on a going concern basis (Dale, 1996).
- In the case of bond finance, standing in sharp contrast to bank loans, the ultimate creditors are public investors. These investors make own investment decisions and thus have to bear the risks of the decisions. Since investors are numerous, diversified, dispersed and directly take investment risks, information about issuing firms needs to be standardized and transferable so that the characteristics and performance of firms can be easily grasped in terms of coupon rates, risk premiums, length of maturity, and etc. The availability of standardized information to public investors constitutes a crucial element for mitigating the problems arising from asymmetric information between issuing firms and public investors and hence promoting the development of corporate bond markets.
- Generally, investment banks play a crucial role as market intermediaries in bond markets and their role is to reduce information asymmetry between issuing firms and public investors through standardizing and disseminating information about the firms, so that public investors are able to purchase new corporate bonds with confidence. They offer various services, such as advising issuing firms as to the terms and conditions (coupon rates, risk premiums, maturity, etc.), preparing a prospectus, forming the syndicate (or underwriting group) to underwrite the sale of new issues, and promoting the sales of the issues. Since investment banks have to hold unsold new issues with potential losses, they make great efforts to make the new issues as marketable as possible. If this succeeds, then public investors can purchase newly issued bonds with confidence. Also, investment banks need to hit a balance between issuers' demands (e.g., low cost, long-term maturity, etc.) and investors' demands (e.g., high yields and safety, etc.).
- Based on the publicly available information about issuing firms, public investors judge whether to invest by taking into consideration a balance between yields and risks associated with bond investment. Since many public investors are involved in purchasing new corporate bonds, the burden of risks can be spread among them. Thus, the corporate bond market can assume and diversify more risks than the banking sector whereby long-term finance for high-risk projects becomes possible.

- Partly reflecting these fundamental differences, contracts of bank loans are in many aspects implicit, whereas contracts of corporate bonds are in every aspect very explicit. This implicit nature of bank loan contracts is reflected in such characteristics of bank loans as being flexible, discretionary and repetitive, which are not observable in the case of bond finance.
- Bank loans have limits to maturity transformation from short-term liabilities to long-term assets. This is because (1) banks' liabilities are short-term and liquid deposits which can be drawn on demand, (2) information on borrowers are highly idiosyncratic implying high risk and (3) banks themselves bear risks of bank credit since risks can not be transferred to depositors. This stands in sharp contrast to the case of bond finance, where investment risks can be spread among many investors and corporate bond issues enable firms to finance long-term risky projects. Commercial banks, however, manage to make *de-facto* maturity transformation to some extent through rolling-over short-term loans based on interim monitoring about their borrowing firms and reducing loan risks by obtaining more credible information through repeated relational transactions.
- Notwithstanding the functions and *raison d'être* stressed by existing literature for commercial banks, commercial banks in Asia did not function properly and aggravated double mismatches, causing the Asian crisis of 1997-1998. This failure is attributable to (1) governments' heavy intervention in directing bank credit to finance projects and industries selected by them, (2) governments' policy to bail out distressed financial institutions regardless of their viability, (3) inadequate prudential regulations and supervision and their ineffective enforcement mechanisms, (4) heavy dependence on collateral-based financing, and (5) concentrated lending by banks owned by family businesses.
- In the meanwhile, it takes time to develop viable bond markets in developing countries for both supply- and demand-side reasons and also for institutional reasons.
- An important supply-side reason is that there are only a small number of large, reputable firms whose information can openly be available and transferable in the market, thereby making such firms creditworthy potential bond issuers. These firms must be financially sound, supported by the good historical record of corporate performance, but at the same time they must be able to issue bonds regularly and on a sizable scale through public offerings if the cost of issuing bonds is to be minimized. In particular, first-time issuers will be qualified more convincingly if they have had good track records of creditworthiness accumulated under the long-term relations with banks. Such bonds are likely to be transacted frequently on a large scale in the market, contributing to the development of liquid secondary markets. Because there is only a small number of firms that satisfy these qualifications, it takes time for developing countries to expand the number of such qualified corporations and to develop a viable bond market.
- As for the demand-side reasons, corporate bond markets are unlikely to develop quickly in developing countries, because the households tend to hold their assets in the form of liquid and short-term bank deposits, reflecting low levels of per capita income and wealth accumulation. Low levels of income and wealth accumulation also explain the small scale of accumulated funds in the hands of insurance companies and pension funds.
- There is also an institutional reason for the underdevelopment of corporate bonds in developing countries. Since general public investors are direct risk-takers, the accounting,

auditing, and disclosure systems, enforceable laws, and sophisticated judicial systems have to be established to protect such public investors from severe information asymmetry in the corporate bond markets and to seriously penalize dishonest corporate securities issuers and underwriters. Such informational, legal, and regulatory infrastructures should make information on issuing firms credible and transactions in the market fair and honest. It will take more time for developing countries to establish such infrastructures as compared with the infrastructures required for the banking system.

- Thus, the determinants of whether bank finance or bond finance becomes dominant depend to a large extent on (1) degree of severity of information asymmetry between ultimate creditors and borrowers, (2) stages of economic development, reflected in the number of large, reputable firms and the number of institutional and individual investors, and (3) development of the informational, legal, and judiciary infrastructures, reflecting the nature of respective financing method. For a better functioning, creditors' rights and property rights should be well established with legal enforcement mechanisms, such as bankruptcy laws and court systems, to protect banks as creditors and also as direct risk bearers of bank loans.
- This paper proposes that Asian countries should place high priority on strengthening the banking system, but at the same time emphasize the importance of initiating to develop domestic corporate bond markets by eliminating all possible impediments since it takes time to establish sound corporate bond markets. The paper stresses that the banking system and the corporate bond market should be complementary to each other in Asian developing countries.

Designing a Financial Market Structure in Post-Crisis Asia

–How to Develop Corporate Bond Markets–

Dr. Masaru Yoshitomi

and

Dr. Sayuri Shirai²

1. Introduction

In recent years, the financial structure of firms has become one of the central issues in emerging market and developing economies. This reflects a growing recognition that the Asian crisis—which was triggered by Thailand in July 1997 and spread to other Asian countries including Indonesia and the Republic of Korea—was preceded by massive, unhedged, short-term capital inflows. Prior to the crisis, such inflows aggravated double mismatches (a currency mismatch coupled with a maturity mismatch) and thus affected the soundness of the domestic financial sector. A maturity mismatch is generally inherent in the banking sector, since commercial banks accept short-term deposits and convert them into longer-term, often illiquid, assets. Nevertheless, massive, predominantly short-term capital inflows—largely in the form of inter-bank loans—shortened banks’ liabilities, thereby expanding the maturity mismatch. Further, a currency mismatch was aggravated, since massive capital inflows denominated in foreign currency were converted into domestic currency in order to finance the cyclical upturn of domestic investment in the 1990s (Asian Policy Forum and Asian Development Bank Institute [2000], Yoshitomi and Ohno [1999] and Yoshitomi and Shirai [2000]).

In addition, prior to the crisis, the volume of capital inflows surpassed that of the underlying current account deficits of Asian countries, resulting in a large surplus on the overall balance of payments and a substantial accumulation of foreign reserves. Moreover, the increased foreign borrowing promoted domestic credit expansion by the domestic financial sector in an environment of premature and weak financial systems, which gave rise to bubbles in real estate and equity markets and excess capacity in manufacturing. Domestic absorption, thus, increased, causing the current account deficit to widen to match the capital account surplus. Such capital inflows were attracted by strong macroeconomic fundamentals—sustained economic growth, inflation that remained relatively under control, sound fiscal balances, and high savings and investment rates—and growing optimism surrounding Asia’s emerging market economies.

In 1995-1996, some of the bubbles burst and consequently financial sector assets turned into non-performing assets. This caused a shift in investors’ sentiment about Asia’s

² This paper benefited from many insightful and useful comments received at the First Brain-storming Seminar of the Asian Policy Forum on “How To Develop Corporate Bond Markets in Asia,” Japan, 11 September 2000; the ADBI/ADB joint seminar on “Toward a Sound System of International Finance,” Singapore, 9-13 October 2000; the ADB Workshop on “How To Prevent Another Capital Account Crisis,” Philippines, 17 October 2000; the ADBI/ADB seminar on “How to Prevent Another Financial Crisis,” the People’s Republic of China, 10 November 2000; and, the BAPPENAS-ADBI Joint Workshop on “How to Prevent Another Capital Account Crisis,” Indonesia, 17 January 2001. We are grateful to Dr. Gunther F. Broker, Prof. James Chan-Lee, Prof. Takagi Shinji, and Prof. Yoon Je Cho for insightful comments. Also, we acknowledge Ms. Elif Sisli and Ms. Cigdem Akin for their excellent research assistance.

economies, leading to a reduction of capital inflows and triggering speculative attacks against domestic currencies. These attacks generated a sudden and massive reversal of capital flows. The failure to defend the fixed exchange rates and subsequent depreciation of local currencies immediately worsened the problems associated with a currency mismatch by expanding external liabilities in terms of domestic currency. Thus, the declining value of domestic assets and the expansion of liabilities as a result of double mismatches of the financial sector deepened the crisis. The resultant rapid deterioration of the balance sheets of domestic financial sectors and enterprises caused a further capital withdrawal, sending domestic currencies into free fall (i.e. a sudden and substantial depreciation). The downward spiral of worsening balance sheets, depreciation of local currencies and massive capital outflows caused an international liquidity shortage (i.e., a sharp drain of external reserves) and domestic banking crises due to insolvency and deposit withdrawals of financial institutions amid double mismatches.

In these circumstances, commercial banks and nonbanks found it difficult to maintain new or even existing credit lines to the private sector, causing a credit crunch and recession. In the face of spreading bankruptcy of enterprises and sharp depreciation of local currencies, which worsened financial institutions' balance sheets even further, domestic absorption sharply reduced and domestic recession deepened quickly. Therefore, the Asian crisis can be characterized as twin crises, a combined currency and banking crisis.³

After the Asian crisis, strong and increasing prevalent views have emerged that banks are no more functional and that economic development should rely on capital markets. Such views claim that the heavy dependence of firms' investment on bank loans was an important source of the Asian crisis and that Asian commercial banks did not function as properly as those operating in some advanced countries.⁴ These views conclude that policy should place less emphasis on bank loans and that Asian countries should develop domestic capital markets as alternative sources for financing enterprises, as suggested by Eichengreen (1999), IMF (Stone, 2000), and World Bank (Shirazi, 1998).⁵

³ Summers (2000) has pointed out three common features observed in the Mexican crisis of 1994-1995, the East Asian Crisis of 1997-1998, the Russian crisis of 1998, and the Brazilian crisis of 1998-1999. Those are (1) a shift of investors' sentiment in the asset markets after a period of substantial capital inflows, (2) a shift of investors' behavior from evaluating the situation in the country to evaluating the actions of other investors, and (3) the adverse impact of the withdrawal of capital and the sharp swing in the exchange rate on real incomes and spending, the domestic value of foreign-currency liabilities and creditworthiness of domestic borrowers, and credit crunch.

⁴ For example, Aoki (2000) has stressed that the Asian crisis was widely perceived as casting doubt on the viability of "relationship" banking in the increasingly integrative and competitive financial markets. A consensus that was quickly forged within the international financial circle immediately after the crisis was to pinpoint one of the sources of the crisis in non-transparent banking practices in those economies. Thus, the policy reform prescriptions included greater supervision and transparency in local financial markets and stricter enforcement of contracts. Relationship banking was thought to be the essential glue of opaque, inefficient, unfair "crony capitalism" and the superiority of the Anglo-American, arm's-length, banking system was triumphantly declared by some.

⁵ For example, Stone (2000) has stated "Two main policy messages emerge ... Second, policies that increase nonbank sources of corporate financing such as equity, commercial paper and bond markets can reduce crisis vulnerability and severity The extension of corporate financing away from banks, which usually dominate in early stages of development, to nonbank intermediaries reduces corporate sector vulnerability by extending trading to a wider class of borrowers and improving risk bearing."

While the basic message is understandable, this paper questions whether policy implications suggested by these prevalent views are justifiable by considering two categories of questions. The first category poses questions such as whether banks can be characterized as unsound and unfit institutions for economic development, as often argued in the case of post-crisis Asia. Provided that existing economic theories and empirical studies clearly define basic functions and *raison d'être* of commercial banks, one then needs to ask: what went wrong with the banking system in Asia. Does the Asian banking system possess unique characteristics when compared with those of developed countries, such as Canada, Germany, Switzerland, and the United States?⁶ Does the Asian banking crisis simply reflect the inherent weakness of deposit-taking financial institutions often observed in developed countries or is there something unique to Asian banks? The second category of questions asks why corporate bond markets are underdeveloped in many emerging market economies; why it took a long time to establish viable bond markets even in developed countries; and whether and how corporate bond markets should be developed in Asian countries. It is also crucial to examine the rationales, functions and benefits of bond finance as compared with bank loans.

In order to address these two categories of questions, it is necessary to understand the nature and features of various financial sources of corporate expansion. Firms have essentially four potential sources for financing projects: (1) retained earnings, (2) bank loans, (3) equity finance and (4) corporate bond finance. It has been increasingly recognized that the choice or liability mix depends crucially on (a) extent of severity of information asymmetry between ultimate creditors and the number of ultimate borrowers, (b) stages of economic development, reflected in the number of large, reputable firms and the number of institutional and individual investors, and (c) development of the informational, legal, and judiciary infrastructures, reflecting the nature of respective financing method.⁷

This paper attempts to answer these two categories of questions through conducting extensive survey of the available literature and highlighting the differences between bond and bank finance. However, most studies bundle bank loans and corporate bonds together by collectively referring to them as "debt" with only a few explicitly discussing their similarities and differences. This lack of distinctions reflects in part the paucity of data that enable breakdowns to be made and in part the difficulties in obtaining precise and detailed data on bonds since large numbers are issued through private placements. Owing to the relative abundance of detailed data on the banking sector, thus, most studies focus on the trade-off between bank loans and equity (often referring to as arm's-length finance) even though this is often referred to as the trade-off between debt finance and equity. Thus, few studies make a clear distinction between bond and bank finance. Therefore, existing literature offers little help in correctly addressing the two categories of questions.

⁶ Moody's Investor Service rates the bank financial strength for selected countries by assessing whether a bank is likely to require financial support from shareholders, the government, or other institutions. Ranging from A(highest) to E(lowest), the bank financial strength was rated D in Indonesia and the Republic of Korea, D-D+ in Thailand, D+ in the Philippines, and C-C+ in Malaysia as of June 2, 1997. By contrast, the United States and Germany were given the rating of C+ and Canada and Switzerland B.

⁷ In reality, it is a question of liability mix rather than that of choice between alternatives. To simplify the argument, however, the analysis is made as if it is a question of choice.

Given such difficulties, the main purpose of this paper is to develop an analytical framework for answering these questions and at the same time to produce appropriate policy recommendations on how to design a financial market structure in Asia. This paper focus on the case of private commercial banks whose ownership is independent from borrowers to highlight essential differences between roles played by banks and by corporate bond markets. The problems associated with the situation, where commercial banks owned and/or controlled by family-owned conglomerates do not properly conduct information processing and monitoring functions, will be explored in more details in the forthcoming research paper.

The forthcoming research paper will also shed light on the intermediate situation where commercial banks play a major role as underwriters, investors, issuers, and guarantors of bonds while they continue to provide traditional banking services. This situation is regarded as intermediate since it resides between an economy where banks provide solely traditional financial services and an economy where active and sound corporate bond markets provide major sources of financing for non-financial firms. Given the dominance of commercial banking in Asia, it is likely that the banking system and the corporate bond market become complementary to each other—rather than becoming substitutes as often observed in countries with mature corporate bond markets. In this dynamic process, commercial banks would gradually reduce the relative importance of traditional banking businesses and enter into new types of businesses. Thus, it is important to formulate a regulatory system that can cope with the new types of risk that would be encountered by commercial banks and to promote their new risk-management skills.

Since this paper focuses on debt instruments, the issues regarding the relationship between equity and corporate bond markets will also be explored in future research. The so-called “pecking order” theory of financing points out that firms first rely on retained earnings, then issue riskless debt, and last, issue new equity (Myers [1984] and Myers and Majluf [1984]). To promote further understanding on the nature of the corporate bond market and to derive more concrete policy recommendations, an examination of the similarities and differences between corporate bond and equity finance is required.⁸ Future research should respond to essential questions, such as how equity market development is related to corporate bond market development and why equity markets generally emerge at an earlier stage of financial development than corporate bond markets. Furthermore, it is important to examine why relatively little new capital is raised through equity finance even in countries with seemingly developed capital markets and few countries have stock markets with diversified share ownership, despite that equity markets do a better job of risk sharing than do bond markets or loans (Stiglitz, 2000).⁹

⁸ For example, the economic life of a bond is limited while that of equity is unlimited. Second, equity contains a tacit agreement between investors and managers on equity-holders’ right to dismiss managers regardless of their performance and the lack of a prespecified expiration date on equity (Fluck, 1998). Third, equity is able to spread risk over time when cash flows are volatile, while bonds concentrate risk over the payback period (Friend and Hasbrouck [1988], Friend and Lang [1988] and Titman and Wessels [1988]). Fourth, bond claims promise a repayment of principal and interest while equity claims promise a payment of a share of profits and convey a proportionate vote in important corporate governance matters (Herring and Chatusripitak, 2000). And fifth, the price of a bond reflects a risk-free rate, opportunity costs and various risk premiums, whereas the price of an equity reflects expected earnings, a discount rate and risk premiums.

⁹ Stiglitz (2000) has explained that in economies where companies’ books cannot be well-audited, the costly state verification model provides a convincing explanation for the limited use of equity. When insiders in a firm have more information than outsiders, insiders’ willingness to issue equity may convey a (noisy) signal that on

The paper consists of five sections. Section II takes an overview of the financial market structure in selected Asian countries as supporting evidence for posing the two fundamental questions. In particular, this section shows that Asian countries have been heavily dependent on bank loans while their corporate bond markets have been largely underdeveloped.

Sections III and IV examine the fundamental differences between corporate bonds and bank loans. In particular, Section III sheds light on the commercial banking system in an attempt to respond to the first category of questions. This section discusses *raison d'être*, functions, and main benefits of the banking system. Based on understanding of the nature of bank loans, this section then examines why Asian commercial banks did not perform as properly as those in some advanced countries and suggests the policies and regulatory systems that should be introduced to improve the function and effectiveness of banking systems.

Section IV shifts the focus to corporate bond markets as an alternative form of debt finance and considers the second category of fundamental questions, such as why and under what circumstances a bond market can emerge and how the bond market interacts with a commercial banking system. In addition, the unique functions of corporate bond finance compared with bank loans are extensively discussed. It then examines factors hindering the development of the corporate bond market and proposes policy recommendations.

Section V concludes. This paper stresses that bank finance and bond finance in Asian countries should be complementary to each other.

2. Features of the Financial Market Structure

2.1. *Importance of the Banking System*

Asian economies have relied heavily on bank loans and the size of the banking sector has expanded as their economies have grown. Chart 1 shows the relationships between the banking sector size (the size of deposits as a share of gross domestic product [GDP]) and real GDP per capita during the 1980s and 1990s in selected Asian countries. The chart shows that before the Asian crisis, the size of the banking sector expanded during the 1980s and the first half of the 1990s as the countries became richer. In particular, the size of the sector doubled in Indonesia; Taipei,China; and Thailand—especially, with that of Taipei,China achieving more than 100% growth. After the crisis, the banking sector expanded even further in a few countries such as People's Republic of China (PRC); Republic of Korea; Malaysia; Taipei,China; and Thailand.¹⁰

average the shares are overpriced. As a result, the market responds by lowering the price, which discourages firms from issuing new shares and encourage them to borrow. When the probability of bankruptcy increases and bankruptcy imposes a cost on shareholders or managers, firms will act in a risk-averse manner. A reverse effect is observed when firms buy back shares.

¹⁰ Levine and Zervos (1998) have shown that using data for 47 countries over the period of 1976-93, the level of banking development—as measured by bank loans to private enterprises divided by GDP—is highly correlated with the growth indicators (real per capita GDP growth, productivity growth, real per capita physical capital stock growth, and the ratio of private savings to GDP). They have found that even after controlling for many factors associated with growth, the initial level of banking development and stock market liquidity are both

As for the relative size of the banking sector in the financial system, the share of bank assets in total financial sector, provided by Hawkins and Turner (1999), amounted to 91% in Indonesia, 78% in Malaysia, and 77% in Thailand at the end of 1998—nearly comparable to the size of Germany reaching 77%. The size of the banking sector is smaller for the Republic of Korea, accounting for 38% in the same year—even smaller than that of Japan (48%) but larger than that of the United States (23%).

While bank loans remain important financing sources, the degree of dependence of each economy on bank finance varies across the countries (Table 1). According to the indicators based on the GDP ratio, economies in Indonesia and Thailand depend more heavily on bank finance than equity and corporate bond finance. In 1998, the share of outstanding bank loans to GDP reached 60% in Indonesia and 109% in Thailand—far beyond the share of the equity and corporate bond markets to GDP.

Table 1: Bank Loans, Corporate Bonds and Equities in Selected Asian Countries and the United States; End-1998 (Percent of GDP)

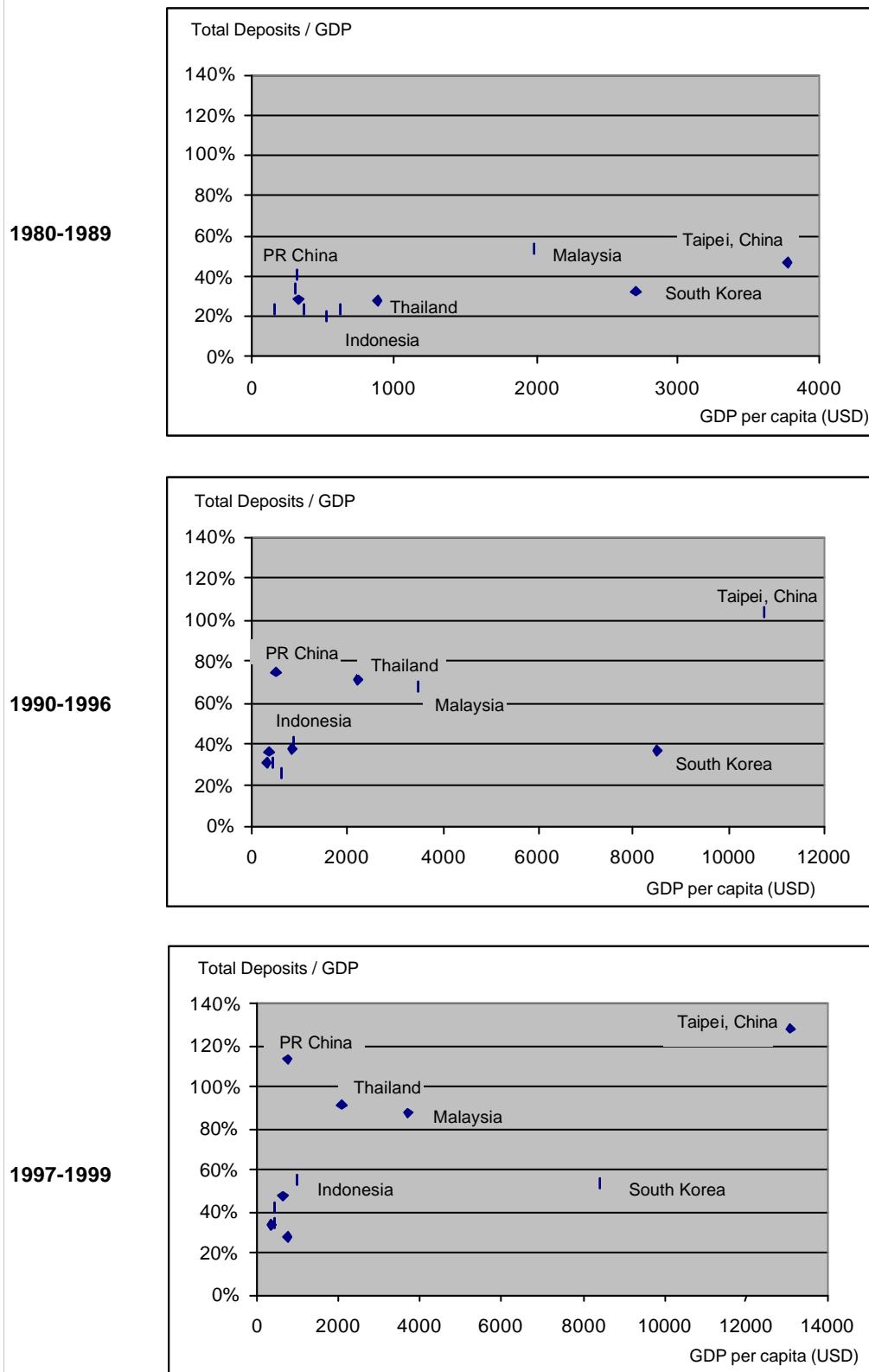
	Outstanding Bank Loans	Outstanding Corporate Bonds	Equity Market Capitalization
Indonesia	60.2	1.5	16.2
Korea, Rep.	43.5	27.3	30.7
Malaysia	148.4	16.4	134.4
Thailand	108.7	2.6	26.3
United States	38.8	43.2	158.1

Source: Table 2.1, Yun-Hwan Kim (2000); International Financial Statistics, IMF; Hamid (2000).

In the Republic of Korea, the banking sector remained prevalent and outstanding bank loans accounted for 44% of GDP in 1998, but the sizes of outstanding corporate bonds and equity market capitalization were also comparable to those of bank loans. A similar feature is observed in Malaysia, where bank loans recorded a surprisingly large share in terms of GDP—149% in 1998—functioning as a key instrument of development policy to fund designated sectors such as housing, agriculture-based industries and export-oriented sectors. Malaysian firms depend primarily on bank loans to finance their business operations. Nevertheless, the equity market has become the second main provider of financing, after bank loans, for the private sector in Malaysia. Table 1 shows that the share of equity market capitalization accounted for 134% of GDP in 1998, nearly comparable to bank loans.

positively and robustly correlated with contemporaneous and future rates of economic growth, capital accumulation, and productivity growth. These results suggest a causality running from financial development to growth. King and Levin (1993) have also demonstrated the same causality, by showing that the predetermined component of financial development is a good predictor of growth over the next 10 to 30 years. Rajan and Zingales (1998a) have pointed out some arguments against attributing causality, such as an omission of common variables and an impact of anticipated future growth. To examine the causality from financial development to economic growth and at the same time to correct for fixed country effects, Rajan and Zingales (1998a) have tested whether industrial sectors that are relatively more in need of external finance develop disproportionately faster in countries with more-developed financial markets. They have found this hypothesis true in a large sample of countries over the 1980s. Their results support the same direction of the causality.

Chart 1: Size of the Banking Sector and GDP per Capita



Sources : International Financial Statistics, IMF; Key Indicators of Developing Asian and Pacific Countries, ADB.

In Thailand, the share of (net) bank loans by private firms accounted for 40% of total financing in 1995-1996, suggesting the importance of the banking sector for firms' growth (Table 2a and Table 2b). The dependence on bank loans was more pronounced for small- and medium-sized enterprises (SMEs), accounting for 50% of total financing. In 1998-2000, the share of bank loans dropped substantially for private firms, whereas the share increased further for SMEs. In Indonesia, the share of bank loans by manufacturing firms accounted for 34% in 1996 and the ratio remained nearly constant in 1997-1998 (Table 3). Among Korean manufacturing firms, bank loans accounted for 25% of total financing in 1995-1996, but the ratio dropped sharply in 1998-1999 (Table 4).

Table 2a: Thailand, Sources of Funds for Private Firms: 1995-2000 (Percent)

Sources of Funds	Before Crisis	1997	After Crisis
	1995-1996 Average		1998-2000(H1) Average
Bank Loans	40.7	99.1	-74.1
Retained Earnings and Others	23.7	41.7	101.9
Loans from Other Financial Institutions	14.8	-51.9	-20.6
Bond	11.6	4.9	32.3
Equity	8.9	6.1	60.3
Total Investments	100.0	100.0	100.0

Source: Jantaraprapavech (2001).

Table 2b: Thailand, Sources of Funds for SMEs: 1995-2000 (Percent)

Sources of Funds	Before Crisis	1997	After Crisis
	1995-1996 Average		1998(H2) Average
Loans from Financial Institutions	49.7	56.6	55.6
Retained Earnings	35.3	17.2	16.2
Equity	1.2	2.7	4.3
Other Securities	1.9	1.0	0.2
Others	12.0	22.5	23.7
Total Investments	100.0	100.0	100.0

Source: Jantaraprapavech (2001).

Table 3: Indonesia, Sources of Funds for Manufacturing Firms: 1996-1998 (Percent)

Sources of Funds	1996	1997	1998
Bank Loans	33.6	30.4	31.0
Private/Owner's Fund	22.5	16.7	20.2
Placement			
Foreign Borrowing	15.0	22.8	18.9
Retained Earnings	12.4	11.1	16.3
Equity and Bond	7.1	8.3	5.2
Foreign Investment	4.7	6.8	5.8
Government Investment	3.3	2.6	1.5
Commercial Paper and others	1.1	0.9	0.9
Total	100.0	100.0	100.0

Source: Shidiq and Suprodjo (2001).

Table 4: Korea, Sources of Funds for Manufacturing Firms: 1995-1999 (Percent)

Source of Funds	Before Crises (1995-1996) Average	1997	After Crises (1998-1999) Average
Bonds	27.5	25.0	-
Bank Loans	24.5	59.0	-
Retained Earnings	21.0	-	-
Equity	18.0	16.0	77.0
Others	-	-	11.5
Total Investments	100.0	100.0	100.0

Source: Shin (2001).

2.2. *Growing Share of Corporate Bond Finance*

The share of corporate bond finance has increased in recent years (Table 5). Several Asian countries began to issue bonds when financial sector and capital account liberalization took place in the 1980s. In addition, state enterprises have been corporatized and/or privatized and in the process, some of these firms chose to meet financing needs by issuing corporate bonds. Also, the issuance of bonds reflects in part firms' intention to retain more control over their companies. Furthermore, the financial difficulties caused by the Asian crisis and the recent enforcement of capital adequacy requirements have made it more and more difficult for commercial banks to continue or increase lending to firms; consequently, firms—particularly, large reputable firms—have turned to bond issuance.

Table 5: Outstanding Corporate Bond Issues in Selected Asian Countries and the United States (Percent of GDP)

	Dec-96	Dec-97	Dec-98
Indonesia	1.9	2.5	1.5
Korea, Rep.	18.2	21.4	27.3
Malaysia	13.2	16.5	16.4
Thailand	2.8	2.8	2.6
United States	37.1	39.6	43.2

Source: Table 2.2, Yun-Hwan Kim (2000); International Financial Statistics, IMF; Hamid (2000).

The share of corporate bond finance in GDP was relatively large in the Republic of Korea (Table 1). A similar pattern is observed according to the indicators based on non-financial firms' sources of financing for new investment. The size of bond finance exceeded that of bank loans in 1995-1996, accounting for 28% of total financing. However, the share dropped substantially in 1998-1999 (Table 4).

By contrast, the shares of corporate bond finance in GDP were very small in Indonesia and Thailand (Table 1). With respect to non-financial firms' sources of financing new investment, bond finance accounted for only 12% in Thailand in 1995-1996, but rose to 32% in 1998-2000 (Table 2). In Indonesia, the combined data of equity and bond finance accounted for mere 7% in 1996, rose to 8% in 1997 and then declined to 5% in 1998 (Table 3).

2.3. Nevertheless, Largely Underdeveloped Corporate Bond Markets

In spite of the growing trend, corporate bond markets are largely underdeveloped in Asia because of the small size of issues, relatively shorter maturities, and illiquidity in the secondary markets. This reflects that there are few large, reputable firms as well as individual investors; institutional investors are underdeveloped; and, the information, legal, and institutional infrastructures are inadequate. Further, even though the size of bond issues was relatively large in the Republic of Korea, corporate bonds were essentially equivalent to de-facto bank loans (Shin, 2001). This is because most corporate bonds—largely short-term—were guaranteed by banks and other financial institutions, and the Investment Trust Companies (ITCs), which were implicitly guaranteed by the government and were major buyers of corporate bonds, promised fixed payment to ultimate creditors (accepting de-facto deposits). Also, the market was largely illiquid. Similarly, in Malaysia, outstanding corporate bond issuance is relatively large, but the market is dominated by a single investor, the Employee Provident Fund, and is largely illiquid. The cases of the Republic of Korea and Malaysia suggest that the sizes of the corporate bond markets do not necessarily reflect the soundness and maturity of these markets.

Governments and State Enterprises as Major Issuers

Prior to the crisis, public institutions or state enterprises were the major issuers of bonds in Asia, except in Indonesia. After the crisis, the governments have become largest issuers in the bond market including corporate bonds, in order to finance projects to

restructure the financial sector and conduct expansionary fiscal policy. In the Republic of Korea, for example, official bonds—including outstanding government bonds, public bonds and monetary stabilization bonds—accounted for more than 35% of total outstanding bonds including corporate bonds throughout 1980-1999.¹¹ The share of official bonds increased from 38% in 1980 to 49% in 1990, and then dropped to 39% in 1995. However, the share increased again to 46% in 1999, reflecting the growing needs of financing expansionary government activities and the process of restructuring financial institutions in the post-crisis period (Shin, 2001). In particular, the proportion of treasury bonds increased rapidly, steadily growing from only 5% of total outstanding bonds when first introduced in 1994 to 56% in 1999.

A more distinctive trend is observed in Malaysia. The share of government bonds in total outstanding bond issues including corporate bonds remained dominant, although it dropped from more than 90% in the 1980s to about 70% in the first half of the 1990s, and further to about 50-60% in the second half of the decade. Since the onset of the Asian crisis, however, the government has become the largest single issuer of bonds to meet the needs of its expansionary fiscal policy to revive the economy and thus to finance the growing fiscal deficit. In particular, Danamodal and Danaharta Bonds emerged and together accounted for about 10% of total outstanding bonds in 1999 (Hamid and Abidin, 2001). Danamodal was established in 1998 as a special purpose agency to recapitalize, strengthen and restructure the banking institutions. Danaharta was established in the same year as a statutory company to purchase non-performing loans from financial institutions and manage them to maximize their recovery value.

In Thailand, the government ceased issuing new bonds in 1990 as it started running budget surpluses consecutively. Thus, the share of government bonds as of 1997 accounted for a mere 3% of all outstanding bond issues including corporate bonds. On the other hand, state enterprises increased their share of outstanding bond issues, accounting for about 55% in 1997 (Asian Development Bank, 1999b). These issuances were made through the Financial Institutions Development Fund and the Property Loan Management Organization, both of which were financial vehicles aimed at providing liquidity to ailing banks and finance companies. Most of the bonds were explicitly guaranteed by the government. Other issuers of state bonds included the Electricity Generating Authority of Thailand, Telephone Organization of Thailand, Expressway and Rapid Transit Authority and National Housing Authority. After the crisis, the government started issuing bonds from 1998 and became the largest issuer of bonds mainly to recapitalize financial institutions, accounting for 78% of total official bonds.

In Indonesia, the government did not issue bonds and the bond markets was hardly developed until after the Asian crisis. Since the eruption of the crisis, however, it has become a leading issuer of bonds in an effort to recapitalize ailing banks and helping them restructure their balance sheets.

¹¹ Monetary stabilization bonds are issued by the Bank of Korea (central bank) as an instrument for monetary policy operations.

Banks as Major Issuers of Corporate Bonds

Banks were major issuers of corporate bonds in Indonesia and Thailand before the crisis and have remained so. In Thailand, the banking sector accounted for 31% of total outstanding corporate bonds in 1995-1996, followed by the commerce and communication sectors, accounting for 20% and 15%, respectively (Table 6). The share of the banking sector rose to 49% in 1998-2000 since banks issued subordinated debenture to increase their tier-2 capital base. The large share of the banking sector is explained by the facts that commercial banks are the major financial institutions in Thailand, the banking sector is highly concentrated (the top five banks contributing about 70% of total bank loans), and their assets accounted for about 80% of total assets of financial institutions (Jantaraprapavech, 2001).

Table 6: Thailand, Corporate Bond Issuers by Industries: 1995-1999 (Percent)

	Before Crises (1995-1996) Average	1997	After Crises (1998-2000) Average
Banking	30.7	-	48.8
Commerce	20.0	11.0	1.3
Communication	15.0	15.9	9.0
Building & Furnishing	6.4	-	16.9
Materials			
Finance & Securities	5.0	-	3.1
Leasing	-	48.8	4.7
Others	22.9	24.3	16.2
Total	100.0	100.0	100.0
Total (billion of Bahts)	93,812	35,710	159,241

Source: Jantaraprapavech (2001).

Further, the limited supply of corporate bonds by nonbank issuers is attributable to a lack of large, reputable enterprises that are able to issue bonds at relatively low costs. SMEs are the predominant form of firms and their main sources of financing are bank loans and retained earnings. The limited supply of corporate bonds is also explained by the late entry of nonfinancial firms to corporate bond markets owing to government regulations set on the issuance of corporate bonds until 1991.

In Indonesia, commercial banks are the second biggest issuers after the property sector. In 1996, commercial banks were the biggest issuers, accounting for 27% of total outstanding corporate bond issues while the property sector accounted for 26.5% (Table 7). The share of commercial banks has dropped to about 20% of total issues in 1997-2000, while the wood-based and consumer goods sectors increased their shares. The relatively small share of nonbank issuers suggests that the number of large, reputable firms is limited. For example, out of 291 companies listed on the Jakarta Stock Exchange, only 30 firms have assets of about Rp5 trillion, while 120 firms have assets of below Rp500 billion (Shidiq and Suprodjo, 2001).

Table 7: Indonesia, Corporate Bond Issuers by Industries: 1995-1999 (Percent)

	Before Crises (1995-1996) Average	1997	After Crises (1998-2000) Average
Banking	27.3	19.3	19.5
Property	26.5	28.6	25.0
Wood-based and Agro Industries	9.3	9.2	13.2
Consumer Goods	-	2.4	6.3
Infrastructure	-	2.2	10.8
Financial	4.7	12.4	11.1
Others	32.2	26	14.1
Total	100.0	100.0	100.0
Total (billions of Rupiahs)	4,285	11,954	15,220

Source: Shidiq and Suprodjo (2001).

In Malaysia, Cagamas bonds used to be the most commonly-traded private bonds in the 1980s. In 1988, Bank Negara Malaysia (the central bank) established Camagas Berhad—a national mortgage corporation—alongside commercial banks, merchant banks, and financial companies. The main purposes were to provide liquidity assistance to commercial banks in exchange for bank mortgage loans, to develop the private bond market through securitization of these loans into Cagamas bonds that were then sold to investors, and to revitalize the sagging construction sector (Hamid, 2000). Cagamas bonds are exempted from submitting a prospectus and complying with guidelines on the issuance of corporate bonds. The success of Cagamas bonds has acted as a catalyst to encourage other firms to issue bonds. As a result, outstanding private debt bond issues have exceeded those of Cagamas bonds since the 1990s. The share of private debt bonds accounted for about 70% of total corporate bonds in 1995-1996 and increased further to 80% in 1998-1999. Major issuers are concentrated in the infrastructure and utilities and financial services sectors.

In the Republic of Korea, outstanding nonfinancial corporate bonds have exceeded bank debentures, accounting for more than 70% of total corporate bonds during 1995-1997 and 60% in 1998-1999 (Table 8). Corporate bonds were introduced in 1963 and their issuance increased rapidly after 1972, when the government introduced guaranteed corporate bonds to ease financial constraints on firms in the face of a severe downturn of the economy and turmoil in the financial markets. The relatively large supply of corporate bonds also reflects that there are relatively great numbers of large and reputable enterprises in the country. The share of the banking sector was small because only specialized banks were allowed to issue bonds before the crisis. Korean bank debentures included bonds issued by commercial banks specializing in long-term financing, such as the Korean Development Bank and the Korea Long-Term Credit Bank.

Table 8: Korea, Corporate Bond Issuers by Industry: 1995-1999 (Percent)

	Before Crises (1995-1996) Average	1997	After Crises (1998-1999) Average
Manufacturing	71.5	72.4	56.3
Construction	13.1	10.5	7.5
Wholesale & Retail Trade, Repair of Consumer Goods	6.5	9.9	16.7
Financial Intermediation	5.9	2.1	7.0
Others	3.2	4.9	12.6
Total	100.0	100.0	100.0
Total (billions of Won)	26,742	34,322	40,529

Source: Shin (2001).

Banks as Major Investors, Underwriters, or Guarantors of Corporate Bonds

In many Asian countries, commercial banks have been the major investors, underwriters, or guarantors in the bond market. For instance, in Thailand, commercial banks have been the leading buyers of corporate bonds. Although the number of nonbank institutional investors—such as mutual funds, provident funds, and life insurance companies—increased rapidly after the crisis, their sizes are limited. Further, commercial banks have also become the major underwriters after the crisis (Table 9). Meanwhile, about 90% of Thai corporate bonds were not guaranteed before the crisis, largely because they were offered through private placement (and thus were not required to be credit-rated). The share of nonguaranteed bonds dropped to 81% in 1997, but rose again to 93% in 1998-2000.

Table 9: Thailand, Lead Underwriters for Corporate Debt Securities in the Thai Bond Dealing Center in 1999-2000

Year		Value	%
		(Mil.Baht)	Registered Bonds
1995	Phatra Thanakit Public Co., Ltd.	3,595	30.9
	Thana One Finance & Securities Co., Ltd.	3,595	30.9
	First Bangkok City Finance Co., Ltd.	1,750	15.0
	Bangkok First Investment & Trust Public Co., Ltd.	500	4.3
	Siam Commercial Bank Plc.	500	4.3
2000	Siam Commercial Bank Plc.	11,955	21.0
	Citicorp Securities (Thailand) Ltd.	10,333	18.2
	Thai Military Bank Plc.	7,650	13.5
	ABN-AMRO Bank N.V.	6,500	11.4
	Jardine Fleming Thanakorn Securities Ltd.	3,650	6.4

Source: Jantaraprapavech (2001).

In Indonesia, commercial banks were the most influential investors in the corporate bond market during 1996-2000, holding more than 63% of total outstanding corporate bonds. By contrast, the shares held by mutual and pension funds were small and varied between 10% and 15% during the same period, while insurance firms held the smallest share—below 10%. On the other hand, banks are not allowed to underwrite securities.

In Malaysia, commercial banks were the major investors in corporate bonds in the 1980s before the Employee Provident Fund became the largest institutional investor in the 1990s. Commercial banks are still major investors in short-term notes with maturity of less than one year (called Notes Issuance Facility). These short-term notes are popular in Malaysia as a low-cost substitute for syndicated bank loans since their rates are linked to the Kuala Lumpur Interbank Offered Rates—not to the base lending rate, as is the case for bank loans (Hamid, 2000). Furthermore, commercial banks are among the major guarantors of corporate bonds.

In the Republic of Korea, the government passed the Capital Market Promotion Act in 1968, under which was established the Korean Investment Corporation—later transferred to the Korea Investment Trust Company in 1974—to engage in investment trust business as well as other market making roles (Shin, 2001). In addition, two other investment trust companies, Daehan and Kookmin, were established in 1977 and 1982, respectively. These three institutions became prominent institutional investors in corporate bond (and equity) markets in the 1980s.

ITCs officially promised to make a fixed payment to ultimate investors until 1990. Even after the official promise was terminated, however, the practice of guaranteeing certain payment continued. ITCs could be regarded as accepting de-facto deposits as if they were deposit-taking banks and then investing these proceeds in corporate bonds, which were guaranteed. Moreover, the government assumed de-facto managerial authority over ITCs, suggesting the presence of implicit protection. In this sense, corporate bonds were equivalent to bank loans. The holdings of corporate bonds by ITCs accounted for 35% of total corporate bonds in 1995-1996. After dropping to 29% in 1997, the share increased again to 38% in 1998-1999. Since commercial banks were allowed to engage in trust businesses in 1984, they have become the second largest group of bond investors after investment trust companies.

While banks are prohibited from underwriting, the banking sector was one major group of guarantors before the crisis. The government originally authorized the Korean Investment Corporation to guarantee corporate bonds, but later allowed banks to conduct guarantee businesses. Before the crisis, about 80% of corporate bonds were guaranteed in 1995-1997. However, the share plunged to 18% in 1998-1999, because a new regulation prohibited securities companies from providing guarantees and, at the same time, banks and other financial institutions have become cautious in conducting guaranteeing businesses (Shin, 2001).

Short- to Medium-Term Maturity

Fourth, corporate bonds were largely concentrated on the short- to medium-term maturities in Asia and this tendency has been enhanced in the post-crisis period owing to the loss of confidence in the viability of firms and the lack of adequate informational, legal, and

judiciary infrastructures. This reflects investors' preferences, arising from lack of experience and thus weak confidence in the corporate bond market. In addition, when commercial banks are major investors of bonds, they prefer short-term bonds to mitigate a maturity mismatch given that their liabilities comprise largely of short-term deposits. Also, issuing firms may prefer short-term bonds because of their relatively lower interest rates.

In Thailand, the maturity of corporate bonds issued during 1998-2000 ranged from one year to more than 10 years. Of these, the majority of corporate bonds concentrated on the maturity of five years and 10 years in 1995-1996, accounting for 29% and 49%, respectively (Table 10). After concentrating on the maturity of five years (49%) in 1997, corporate bonds spread in the range of one to eight years in 1998-1999.

Table 10: Thailand, Maturity Structure of Corporate Bonds (Percent)

	Before Crises (1995-1996)	1997	After Crises (1998-2000)
	Average		Average
1 year	0.0	0.0	3.9
2 years	0.3	0.0	12.3
3 years	6.8	11.0	22.1
4 years	2.2	0.0	2.0
5 years	29.2	48.8	16.7
6 years	0.0	0.0	7.6
7 years	2.1	0.0	28.2
8 years	0.0	0.0	1.5
9 years	0.0	0.0	0.0
10 years	48.7	24.3	2.7
10 years up	10.6	15.9	2.9
Total	100.0	100.0	100.0
Total Corporate Bonds (billion of Bhats)	91.1	35.7	123.1

Source: Jantaraprapavech (2001).

In the Republic of Korea, about 90% of corporate bonds have been of three-year maturity in 1995-1999 (Table 11). The illiquid secondary markets as a result of the buy-and-hold strategy by ITCs induced investors to purchase and guarantors to guarantee bonds with legally allowed shortest maturity, which was three year. In Indonesia, corporate bond maturities were in the range of four to five years, accounting for 70% of total outstanding corporate bonds in 1998-2000. Corporate bonds with maturities below three years accounted for only 2%. In Malaysia, the most common maturity was five years, accounting for about 55% of total issues in 1998. Issues with maturities exceeding 10 years accounted for only 13% of total issues.

Table 11: Korea, Maturity Structure of Corporate Bonds (Percent)

	Before Crises (1995-1996) Average	1997	After Crises (1998-1999) Average
Less than 4 years	95.1	97.2	96.6
4 years- less than 5 years	0.2	0.1	0.5
5 years and over	4.7	2.7	2.8
Total	100.0	100.0	100.0
Total (billions of Won)	267.6	343.3	433.4

Source: Shin (2001).

Illiquid Secondary Markets

Trading of corporate bonds in the secondary markets has remained modest in Asia throughout the period. This is because most investors tend to hold bonds until maturity. In Thailand, the trading value of corporate bonds was limited, although it has increased to some extent in recent years. For example, the trading value of corporate bonds has increased from B51 billion in 1995 to B91 billion in 1997. The turnover ratio also increased from 56% to 63% over the same period. However, after the Asian crisis, the trading value and the turnover ratio dropped sharply (Jantaraprapavech, 2001).

Similarly, in Indonesia, most investors hold corporate bonds until maturity date. Shidiq and Suprodjo (2001) have shown that liquidity, as measured by the percentage of the volume of transactions to the outstanding amount of bonds listed and traded, was low and scored in the range of 48% in 1997 to 35% in 1998-2000.

In Malaysia, Hamid (2000) has pointed out that the secondary market for private debt securities has been extremely illiquid and virtually non-existent. Many corporate bonds are bought and held to maturity by institutional investors owing to liquidity requirements, high yields, short supply and lack of market-making activities. In 1998, total traded volume of unlisted private debt securities was low, amounting to RM1.9 billion or only 4% of the total trading volume. This volume increased moderately in 1999, amounting to RM8.7 billion (6% of the trading activity). As for listed bonds, the traded volume was even smaller, recording RM540 million and accounting for only 1% of the total listed bonds in 1998. Although this volume rose to RM4.1 billion or 3% of total listed bonds in 1999—the secondary market remained illiquid.

In the Republic of Korea, corporate bonds were not actively traded in the secondary markets in the past since the prices of bonds were under government control. Until the early 1990s, issuing rates of corporate bonds used to be determined by the government. In 1991, the government liberalized this regulation for corporate bonds with maturities of less than two years and in 1993 for corporate bonds of all maturities. Nevertheless, the government routinely intervened in the corporate bond market to affect interest rates through quantity adjustment (Shin, 2000). Furthermore, ITCs chose not to engage in trading bonds in order to meet fixed payments to ultimate investors.

After the occurrence of the crisis, bond issuance by ITCs increased sharply in 1998, accounting for almost 80% of the total financing of non-financial firms and compensating for contraction in other financing channels. As a result, the turnover ratio rose rapidly from 97% in 1995-1996 to 92% in 1997, and further to 205% in 1998-1999. However, the corporate bond market has plunged since the middle of 1999, when the bankruptcy of Daewoo—the third largest conglomerate in the country—triggered a collapse of ITCs.

Households' Preference for Bank Deposits

Households are generally highly risk-averse and thus prefer highly liquid and short-term assets such as deposits, especially when per capita incomes and the level of wealth accumulation are low. They generally prefer investing the bulk of their savings in deposits. In Thailand, for example, households held about 75% of their total assets in deposits in 1993 and 95% in 1998 (see Table 12). The life insurance sector accounted for about 20% of total households' financial assets in 1993, but the share dropped to 1.4% in 1998 since a decline in income reduced demand for insurance (suggesting that insurance was regarded as luxury assets) and increased preference for bank deposits. In Indonesia, bank deposits accounted for about 90% of total households' financial assets in 1998-1999 (Table 13). Given households' strong preference for bank deposits, therefore, there are and would be a limited number of individual investors in Thailand and Indonesia. Furthermore, institutional investors are also not well developed in these countries owing to a relatively low level of asset accumulation and the relatively short history of the asset management industry.

Table 12: Thailand, Household Savings Pattern (Percent)

	1993	1998
Deposits	74.9	94.5
Life Insurance	18.9	1.4
Equity	1.3	0.3
Provident Funds	0.3	2.1
Others	4.7	1.7
Total	100.0	100.0

Source: Jantaraprapavech (2001).

Table 13: Indonesia, Household Savings Pattern (Percent)

	1998	1999
Bank Deposit	92.9	93.7
Securities	0.0	0.1
Insurance	1.1	0.4
Direct Investment	6.0	5.7
Total	100.0	100.0

Source: Shidiq and Suprodjo (2001).

In the Republic of Korea, households used to diversify asset portfolios by including trust, insurance and pensions and equity prior to the crisis. Bank deposits accounted for 46% of total financial assets held by households in 1991-96, but after the crisis, deposits rose to 65% in 1998 (Table 14).

Table 14: Korea, Household Savings Pattern (Percent)

	Before Crises 1991-1996 Average	1997	After Crises 1998-1999 Average
Deposits	45.8	35.1	65.0
Trust	22.0	25.1	2.3
Insurance & Pension	20.1	20.7	11.1
Equity	7.0	11.7	15.2
Others	5.2	7.4	6.6
Total	100.0	100.0	100.0

Source: Shin (2001).

3. Inherent Features of the Banking System

Large numbers of theoretical and empirical studies in the area of corporate finance have been accumulated since Modigliani and Miller published their famous and influential papers.¹² These studies provide ample theoretical support and empirical evidence on the banking system, which appears to be consistent with the behavior of many commercial banks operating in advanced countries.¹³ This suggests that “banks’ relationships” with their borrowers are theoretically justifiable and are not necessarily synonymous with “cronyism.” To make a clear distinction between relationships and cronyism, it is important to examine the inherent features of relationship-based commercial banks and then describe the factors that shifted banks from being relationship-based to cronyism in Asia.

¹² Modigliani and Miller (1958) have shown that in an idealized world without taxes, the value of a firm is independent of its debt-equity mix and dependent on cash flows it generates. Subsequently, Modigliani and Miller (1963) indicated that the value of a firm is an increasing function of leverage because of the tax deductibility of interest payments at the firm level, suggesting that a value-maximizing firm finances projects solely with debt. Since Modigliani and Miller have produced these famous papers, numerous research papers have focused on a trade-off that firms face in selecting financing sources with consideration to tax benefits, agency costs, asymmetric information, incomplete contracts, corporate control, etc. Although a consensus has not been reached so far on exact costs and benefits of leverage and the roles of these positive and negative factors in firms’ capital structure decisions, most financial economists accept some version of the trade-off theory (Berens and Cuny, 1995).

¹³ On empirical grounds, recent studies showed some evidence on the response of capital structure to changes in corporate taxes although earlier studies yielded mixed empirical results (Bradley, Jerell and Kim [1984] and Berens and Cuny [1995]). Nevertheless, empirical studies suggest that the debt ratios predicted by the trade-off theory are significantly higher than those observed in reality. Berens and Cuny (1995) have indicated that the average debt ratio of firms in the United States has typically been around 25-30% and this ratio appears too low relative to the level predicted by the trade-off theory. Myers (1984) has argued that the trade-off theory fails to predict a wide degree of cross-sectional and time variation of observed debt ratios.

Furthermore, understanding “information problems” is a crucial step in determining the emergence, functions, and *raison d’être* of the banking system. Discussions on information problems are centered on information asymmetry between ultimate borrowers and commercial banks, not between ultimate borrowers and depositors. This is justifiable as long as banks are direct risk bearers of bank loans executed to borrowing firms and depositors are protected under a deposit insurance system.

3.1 Information Problems in General

When there is a substantial degree of asymmetry in information between ultimate borrowers and ultimate creditors, any creditors may face difficulties called “agency problems.” Creditors often experience problems of asymmetric information owing to the lack of information about borrowers’ preference toward risk, creditworthiness, return streams, investment opportunities, and their diligence. In these circumstances, there are essentially three sources of agency problems.

The first source called “adverse selection.” This arises when creditors inadvertently invest in firms that offer to pay higher interest rates on loans because of their preference for risky projects. The problems of adverse selection emerge when creditors provide funds to firms before financial resources are actually transferred to borrowers, so “*ex-ante*” monitoring is important.

The second is called “moral hazard.” This happens when borrowers do not honor their commitments to investing in agreed and contracted projects and also perform poorly once they have received financing from creditors. Moral hazard problems emerge when transferred financial resources are being actually utilized by borrowers; so “*interim*” monitoring is required.

When adverse selection and moral hazard problems are present, raising lending rates does not necessarily solve the problems. A higher interest rate either attracts applications by riskier firms (an adverse selection effect) or influence borrowers to choose riskier investment projects (a moral hazard effect), as stressed by Stiglitz and Weiss (1981). If increasing the interest rate raises the average riskiness of borrowing firms, banks may optimally choose to ration the quantity of loans they offer rather than to raise the lending rate to clear the market.

The third source of agency problems occurs during liquidation or financial distress of borrowers. The problems arise when creditors are not able to distinguish between viable, but temporarily illiquid firms and nonviable firms. Such problems emerge after bank-financed investment projects have been executed and completed; so “*ex-post*” monitoring is required to distinguish between viable and nonviable firms when they fall into financial distress. If funds are not made available to viable firms under financial distress, these firms are forced to exit from the market. As a result, high liquidation costs are incurred with the cost exceeding the discounted present value of the firms.

Thus, it is important to mitigate these agency problems to avoid under-investment in good projects, to keep contract-based commitments properly honored, and to reduce unnecessarily expensive liquidation costs. However, it is difficult to solve such problems because information processing and monitoring costs (so-called “agency costs”) are too high

for individual creditors.¹⁴ Information processing costs include not only actual costs of collecting, evaluating, and producing information about borrowers, but also free-rider problems in the process of doing so.¹⁵ Free-rider problems arise when some creditors have an incentive to utilize information that other creditors collect, analyze and produce about borrowers by paying large cost. Consequently, no creditors may be willing to spend significant time and money for collecting and analyzing information about borrowers. This failure to produce adequate information will weaken creditors' incentives to invest in firms, resulting in under-investment and sluggish growth of firms.

Furthermore, monitoring costs involve not only actual costs associated with ex-ante, interim, and ex-post monitoring, but also the problems arising from incompleteness of contracts. Creditors often find it difficult to write perfect and complete contracts in advance of actual transfer of loans. If creditors had been able to write such perfect contracts, they would have discouraged borrowers from taking advantage of their advantageous positions arising from information asymmetry. In practice, however, it is difficult to foresee all the contingencies in advance. Borrowers' responsibilities for repayment of loans cannot be fully spelled out for many possible contingent situations and unpredictable outcomes. In many cases, contracts have to be tried out by actually going through all possible contingencies in real business transactions. Therefore, it is costly to attempt to write complex, explicit contracts ex-ante (Rajan, 1996 and 1997). Even if such contracts can be written, creditors may find it difficult to enforce them in the event of any violation without a well-established court system. High monitoring costs discourage creditors from extending new credit lines to firms.

3.2. Raison d'être of the Banking System

Commercial banks will emerge as effective financial intermediaries when they can mitigate these agency problems at relatively low costs—compared with the case in which ultimate creditors directly cope with these problems by themselves. If this happens, commercial banks can be regarded as having inherent reasons for their existence (Leland and Pyle [1977] and Diamond [1984]).

¹⁴ One of the classic assumptions of traditional economics was perfect capital markets. Stigler (1967) has suggested that many of the seeming imperfections in capital markets could be explained by transactions costs (including information costs) and once these costs were taken into account, there was no presumption that capital markets were inefficient. Modern information economics stresses that even small information costs can have large consequences, and many of the standard results—including the welfare theorems—do not hold even when there are small imperfections of information (Stiglitz, 2000). For example, efficient decentralization through the price system, without extensive government intervention, does not result in a constrained Pareto optimum, that is, even taking into account the cost of information.

¹⁵ In particular, investing in bonds issued by emerging market economies requires the costly collection of detailed information about the countries involved. Calvo and Mendoza (2000a) have shown that financial globalization may have reduced the incentives to pay fixed country-specific information costs. This arises from the facts that (1) limits on short positions prevent agents from taking full advantage of costly information and (2) since country returns are less than perfectly correlated, a diversified portfolio remains an attractive investment even without country-specific information. As the number of independent country-specific assets in which wealth can be invested grows, investors are more likely to hit short-selling constraints in exploiting country-specific information, while the variance of a portfolio diversified without this information still falls. As a result, the expected-utility gain of paying information costs declines. In such an environment, there will be a small number of informed specialists and a large number of uninformed investors who are clients of these specialists. The uninformed investors then mimic behavior of these specialists or trade blindly on the basis of the prior distributions of asset returns.

Reducing the Costs of Collecting, Analyzing, and Processing Information

The first inherent reason is that commercial banks are able to reduce the costs of collecting, analyzing and processing information—by obtaining inside information about borrowers through various ways (Table 15). First, commercial banks gain access to more information about their borrowers through performing repeated transactions (Sharpe [1990] and Diamond [1991]). Second, borrowers are more willing to reveal information about their activities to commercial banks than to bond or equity investors, especially when information contains confidential or proprietary elements. Third, commercial banks may be able to reduce the costs of collecting and evaluating information regarding creditworthiness of their borrowers through economies of scale. The economies of scale occur in the presence of the fixed cost of hiring professional staff with special expertise in loan evaluation. Fourth, commercial banks provide settlement and checking accounts and other financial services to their borrowers, which gives them an opportunity to grasp economic activities and cash flow movements of their borrowers (Chemmanur and Fulgheri, 1994). Fifth, commercial banks obtain more information from borrowers by gaining reputation as trustworthy financiers and thus building up trust.¹⁶

Table 15. Different Methods to Reduce Information Asymmetry

PARTICIPANTS	BANKING SYSTEM	BOND MARKET
1.Ultimate Creditors:	Depositors	Public Investors
2. Risk Bearers:	Commercial Banks	Public Investors
3. Intermediaries:	Commercial Banks	Investment Banks

Methods to Reduce Information Asymmetry and Risks of Providing Fund to Borrowers

BANKING SYSTEM	BOND MARKET
1. Inside information	1. Provision of timely, credible to public with laws and institutions
2. Repetitive transactions	2. Risk-rating agencies to evaluate credit risk and encourage flows of information
3. Monitoring with expertise and economies of scale	3. Investment banks to help bonds to be marketable and standardized
4. Collateral	4. Diversification of risk through increased number of public investors
5. Diversification of bank loans	

¹⁶ The economics of information recognizes that each piece of information is different from others and a piece of information cannot be purchased like a chair; otherwise, it is not new information (Stigliz, 2000). In this sense, markets for information are inherently characterized by imperfections of information concerning what is being purchased. In this circumstance, reputation plays a central role. Furthermore, the signaling literature has indicated that banks signal their trustworthiness by the size of their edifices (Stigliz, 2000).

A main bank system can be developed to solve the aforementioned free-rider problems in collecting and processing information by becoming major creditors and thus eliminating duplication of information collecting and processing efforts of other. A main bank can be delegated such a function as a delegated monitor in contrast to the case of corporate bonds (Diamond, 1984).¹⁷ A delegated monitor is able to economize the costs of intermediation (including costs of enforcement and coordination in the relationship between ultimate borrowers and ultimate creditors) by avoiding redundancy of screening and monitoring practices, as documented by Campbell and Kracraw (1980), Chan (1983), Ramakrishnan and Thakor (1984), Boyd and Prescott (1986), and Williamson (1986). This advantage is relevant especially when everyone agrees on what information needs to be collected and how it should be processed (Allen and Gale, 2000).

Through these various means, commercial banks are able to obtain inside information about borrowers such as their preferences concerning risk and creditworthiness, their return streams and investment opportunities. This information is highly idiosyncratic especially when the degree of severity of information asymmetry is high. Fama (1985) has called bank loans “inside” debts and distinguished them from “outside” debts. Such inside debts are to be regarded as contracts where banks get access to information that is not publicly available. In contrast, corporate bonds are outside debts since bondholders rely on publicly available information. Rajan (1992) has demonstrated a model in which borrowing firms’ choice between bank loans and corporate bonds depends on the informational advantage of banks over corporate bonds. Informed banks would control their borrowers’ decisions such that the project would be continued only if it has a positive net present value. Rajan assumes that banks have access to inside information while bond investors do not engage in monitoring due to high costs.

Furthermore, the degree of idiosyncrasy in information about borrowing firms is higher for SMEs, reflecting their greater sensitivity to various disturbances and highly volatile returns at the early or premature stage of diversification. In addition, their management and operational styles could be heavily influenced by owners or their families and thus are not fully modernized, adding to idiosyncrasy. In such circumstances, commercial banks have a comparative advantage in extending credit to borrowers of a highly idiosyncratic nature by effectively collecting information and evaluating their creditworthiness.

Reducing Monitoring Costs

The second inherent reason for the existence of commercial banks is that they are able to reduce monitoring costs and mitigate the three agency problems. First, commercial banks can reduce the problems of adverse selection by selecting borrowers based on previous lending practices (Table 15).¹⁸ In addition, they may reduce the costs of monitoring potential borrowers by exerting economies of scale by paying fixed costs of hiring and training

¹⁷ Stigliz (1985, 1993) has indicated that since well-developed (bond) markets quickly reveal information to all investors, the investors may be dissuaded from expanding financial resources to conduct research on firms. Thus, it is likely that free-rider problems are more severe in the bond market than in the banking system.

¹⁸ In general, commercial banks are reluctant to provide loans to newly-established, unknown firms. They usually extend loans to borrowers with credit records toward the middle of the spectrum or enjoying some reputation (Diamond, 1991).

professional loan monitors and evaluators, and purchasing necessary equipment such as communication tools. Thus, commercial banks can lower a premium associated with the problems of adverse selection and play a role as good project screeners (Diamond [1991], Besanko and Kanatas [1993] and Holmstrom and Tirole [1997]).

Second, repeated transactions and renegotiation using inside information give commercial banks some bargaining power and thus help reduce the problems of moral hazard by controlling possible misbehavior of borrowers. When threatened with the termination of loan contracts, borrowers wishing to maintain lines of credit may become disciplined and induced to avoid risk-taking behavior. Further, the right of commercial banks to liquidate their borrowers in the event of default ensures that the latter make regular payments (Hart and Moore [1989,1995]). Repeated transactions also allow commercial banks to reduce monitoring costs through the economies of scale mentioned above. As a result, they can monitor borrowers' performance and enforce contracts effectively.

Moral hazard or the inefficient use of firms' resources might be further mitigated through increasing debt. This may apply particularly to the case of firms where managers are also the owners. Jensen (1989) stresses that debt commits firms to pay out cash, which reduces the amount of free cash available to managers for spending on unproductive projects.

Third, commercial banks are able to mitigate ex-post problems of asymmetric information since commercial banks can distinguish viable borrowers from nonviable borrowers using inside information and thus extend lines of credit only to the former. In this way, commercial banks are able to reduce liquidation costs that arise from forcing viable, but temporarily illiquid, borrowers to go bankrupt and help to restructure such borrowers or prevent nonviable borrowers from prolonging their unprofitable businesses. Furthermore, commercial banks are able to lower transaction costs of bankruptcy by exercising the economies of scale (Herring and Chatusripitak, 2000).

Based on these advantages in reducing costs of collecting information and monitoring borrowers, commercial banks can effectively and efficiently perform intermediary functions between depositors and borrowers.

3.3. Inherent Uniqueness of Bank Financial Services¹⁹

There are two essential features of bank loans arising from the nature of their implicit contracts.

Flexible, Discretionary and Repetitive Loans

While all contracts of corporate bonds are explicit, there are many implicit contracts in bank loans. Banks loans are bilateral, non-public agreements between commercial banks and borrowers. Of course, any loan contracts entail enforcement by law. However, bank loans differ from corporate bonds in the following three aspects: (1) flexible, (2) discretionary and (3) repetitive.

For instance, once credit line is established, borrowers can decide for themselves the timing and the volume of actual borrowing. Though implicit in loan contracts, it is possible

¹⁹ Other features of the banking system are described in Appendix I.

for borrowers to obtain refinance or to return loans earlier than maturity with relatively small fees. Furthermore, if borrowers fall into financial distress, it is possible that commercial banks continue to supply loans or buy back bank loans that turn problematic (Gilson, John and Lang [1990] and Hoshi, Kashyap and Scharfstein [1990]). Also, banks may renegotiate with firms over lowering interest rates in order to prevent risk-taking behavior, as pointed out by Stiglitz and Weiss (1981).²⁰ Since most of these transactions cannot be written explicitly in loan contracts, these promises are regarded as implicit “insurance” that commercial banks provide to their borrowers.

In return, commercial banks may implicitly indicate their right to liquidate inefficient projects. Borrowers allow commercial banks to have access to their inside information and to monitor them. As a result, repeated transactions tend to emerge between a borrower on the one hand and a commercial bank as a delegated monitor on the other hand. Hence, commercial banks tend to maintain borrowers’ access to bank loans over the long run, whereby banks can save the costs associated with originating bank loans and executing them. Such characteristics unique to bank loans as flexible, discretionary, and repetitive can be summarized as banking relationship or relational banking (Allen and Gale, 2000).²¹ Aoki (2000) has defined relationship financing as a type of financing in which the original financier is expected to provide additional financing in a class of court-unverifiable future states in the expectation of their obtaining rents in the more distant future. As for types of financing that are not relationship financing, Aoki has referred to it as arm’s-length financing.

(1) Reputation

In the process of providing such implicit “insurance,” however, commercial banks need to foster mutual trust with their borrowers so that one party does not take undue advantage of the other at the time of contract renewals. On the one hand, banks may attempt to build up reputation as reliable financiers by honoring calls for financial support by their borrowers under financial distress. Such sustained financial support would help to stabilize the value of firms’ future businesses. Borrowers are willing to pay higher interest rates against loans extended by banks with greater reputations in exchange for flexibility in dealing with them during financial distress, as demonstrated by Chemmanur and Fulgheri (1994) in their model. Chemmanur and Fulgheri have also shown that banks’ longer-time horizon for lending (compared with bonds) and the associated desire to acquire a trustworthy reputation

²⁰ Gorton and Khan (2000) have stressed that banks can succeed in preempting firms’ risky behavior only in a moderately distressed environment by writing off some of the loans or lowering an interest rate. Renegotiated interest rates are not monotone in firms’ credit quality: the healthiest firms are left alone, moderately distressed firms are granted concessions, and the most distressed firms are forced to submit to harder terms of contracts.

²¹ Looking at conglomerates in the United States, Rajan and Zingales (1998a) stressed that conglomerates can be regarded as the ultimate relationship-based financial entities in the sense that different business units that make up an organization receive financing from an internal capital market. They have documented that conglomerates trade at substantial discounts relative to stand-alone firms and the size of this discount (about 14% of market value on average) is related to the extent of the conglomerates’ investments in relatively unprofitable segments. In addition, the extent of the discount and overinvestment increases as the diversity of investment opportunities within conglomerates increases.

On the issue of whether conglomerates perform better in less developed countries, Barr, Gerson and Kanator (1995) have emphasized that groups’ superior performance is attributable to the opportunities they provided for large South African investors under binding capital controls. Khanna and Palepu (1997) have documented that large diversified groups in India outperformed smaller unaffiliated firms in 1989-1995. Observing conglomerates in 35 countries, Fauver, Houston and Naranjo (1998) have found that a diversification premium existed in low-income countries while a significant diversification discount existed in high-income countries. They have also documented the dominance of conglomerates in Asia, Latin America, and most of Western Europe.

in negotiations would encourage them to devote more financial resources toward evaluating borrowers.

On the other hand, borrowers may make efforts to establish a reputation as reliable borrowers by producing good outcomes (e.g., sales, profits) and making regular repayments on debt (Eaton and Gersovitz [1981], Allen [1993] and Diamond [1989]). Borrowers wishing to borrow repeatedly from the same banks are likely to take into account the consequence of their current repayment behavior on future refinancing (Diamond, 1991). When there are severe problems of information asymmetry between new borrowers and ultimate creditors, the borrowers may attempt to build up their reputation by accumulating good track records of their creditworthiness with respect to the repayments of bank loans in order to be monitored.

Given that commercial banks and their borrowers want to build a good reputation, the spirit of agreements is more effectively honored. Therefore, both commercial banks and their borrowing firms can implicitly make commitments to each other that are not contractually written and consequently, enable a steady flow of future business transactions.

(2) Efficient Negotiations with Borrowers to Avoid Premature Liquidation

Commercial banks are able to renegotiate contracts with borrowers more efficiently than bond investors. On the other hand, in the bond market, investors are widely dispersed and thus, it is costly to undertake renegotiation efficiently with borrowers. Assuming that commercial banks as senior claimants have an incentive to liquidate projects too frequently, Gorton and Khan (2000) have devised a model that bank loans without a liquidation option are superior to corporate bonds since commercial banks are able to act unilaterally and have the ability to renegotiate with borrowers, thus leading to more efficient outcomes in some states.²² If a liquidation option is given owing to the assumed willingness to liquidate, banks may reduce incentives to renegotiate. Thus, when bank loans with a liquidation option are compared with those without the option, it is difficult to determine which one results in higher efficiency. This is because gains in efficiency depend on the trade-off between costs of excessive liquidation arising from calling in not only of bad projects but also good ones when the option is given on the one hand, and cost of excessive continuation arising from keeping up unprofitable projects when the option is not provided on the other hand. Furthermore, Berlin and Loeys (1988) have demonstrated a model in which the choice between bank loans and corporate bonds depends on the trade-off between the costs arising from liquidation problems in the bond market (that might arise if adequate public information is unavailable) and costs of collecting and processing information and monitoring borrowers under bank loan contracts.

²² Gorton and Khan (2000) have also pointed out that banks—despite the fact they are senior claimants—have a greater incentive to monitor borrowers than junior claimants. The reason is that in addition to their ability to act unilaterally, banks as senior claimants may have an incentive to force liquidation, possibly excessively so. If the likelihood of excessive liquidation can be reduced via prepayment options, then bank loans dominate other forms of debt because the prospect of relatively efficient liquidation raises the value of the firms ex-ante by lowering the cost of debt (Gorton and Khan, 2000). However, if senior creditors were decentralized, they would find it costly to engage in the efficiency-enhancing renegotiation process.

The presence of decentralized junior debt could make it more difficult for banks to preclude moral hazard through renegotiation, because banks would have to forgive more debt in order to counter the borrowers' incentive to add risk if there are junior debt holders, and some of the benefits would spill over to them. Moreover, free-rider problems may emerge among junior debt holders in the negotiating process of forgiving debt. In such a situation, Gorton and Khan (2000) have suggested that banks should indicate firms for which banks would forgive x% of the debt, provided firms can get junior claimants to do the same.

These features of bank loans are contrasted with those of corporate bonds, which would generally require firms and investors not to renegotiate their bond contracts.²³ It is likely that bank loans are renegotiated more often than bonds of equivalent maturity, as stressed by Chemmanur and Fulgheri (1994). This is because commercial banks devote more resources to evaluating firms in financial distress compared to bond investors. Chemmanur and Fulgheri have also demonstrated that firms that assess a relatively high probability of being in financial distress find it optimal to use bank loans despite the fact that commercial banks charge higher interest rates in equilibrium compared with bonds. While this approach may be debatable, they have used the size of firms as a proxy for the probability of financial distress and have determined that smaller firms use bank loans to fund their projects, while larger firms issue corporate bonds.

The advantage of bank loans over bonds can also be placed on the fact that banks tend to provide loans even to small-size firms. James (1987) has provided supporting evidence that the average firm size in bank loan samples was about 25% of that in samples of bonds. Gilson, John and Lang (1990) have also found that financially distressed firms that borrow primarily from commercial banks are more likely to be restructured efficiently without recourse to court action. Hoshi, Kashyap and Scharfstein (1990) have determined that Japanese firms with close ties to commercial banks are more likely to be restructured efficiently in the event of financial distress.

Staged Financing

(1) Financing for SMEs

Based on inside information and effective monitoring capacity, commercial banks provide two types of “staged financing”: one for SMEs and the other for small, start-up, technology-intensive firms. The first type of staged financing sees commercial banks playing a major role in providing funds to relatively unknown, small firms and charging a lending rate below the level determined in a competitive credit market.²⁴ As firms expand and become profitable, banks increase the amount of credit extended to these firms and increase the interest rate to recover losses generated earlier (Schmukler and Vesperoni [1999] and Stulz [2000]). This type of financing, therefore, assumes that banks maintain long-term relationships with their borrowers so that they can obtain a larger share of future profits from these firms.²⁵

In this dynamic process of firms’ expansion, interest rates charged by commercial banks can be repeatedly negotiated when rolling-over the existing loans. These interest rates

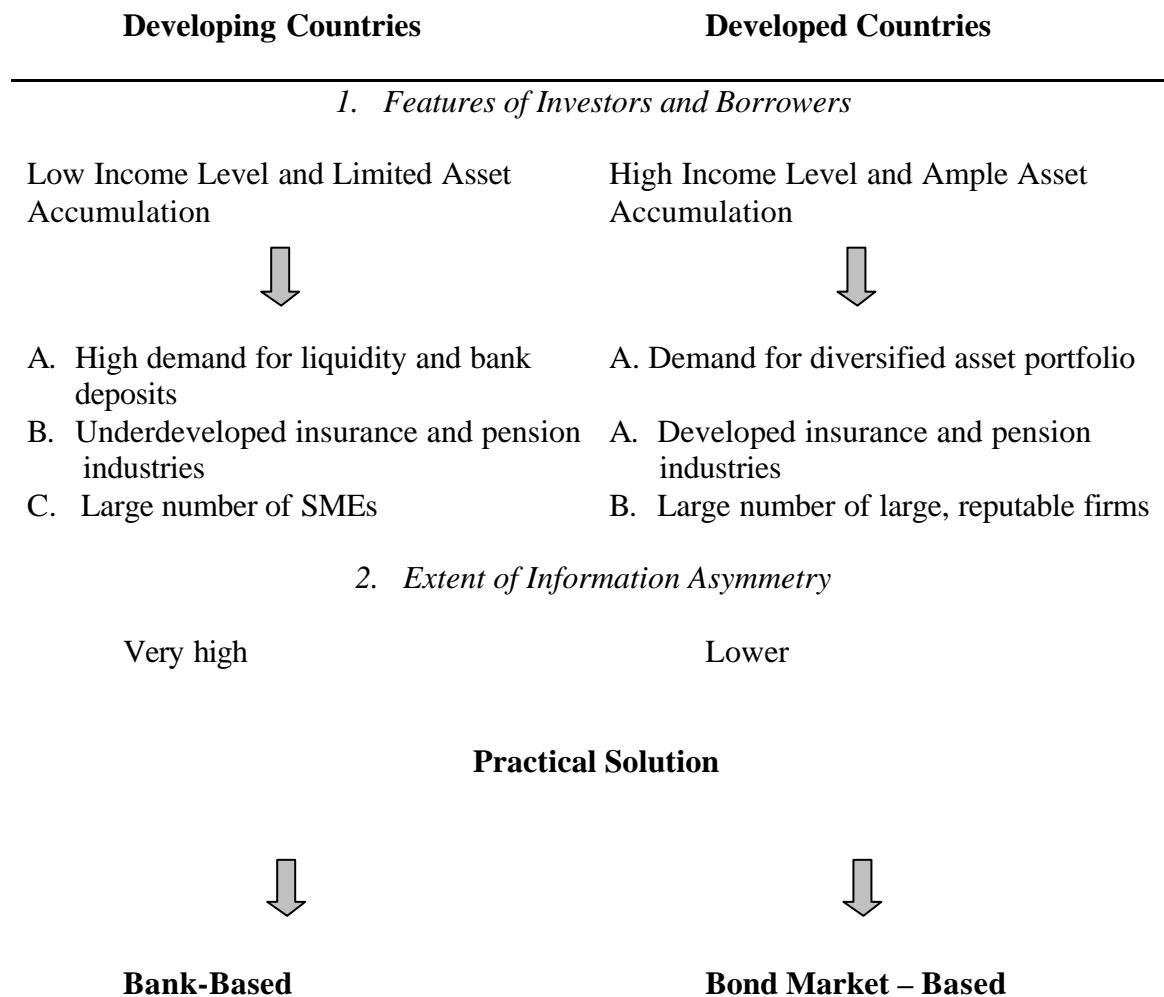
²³ In recent years, however, there have been intensive discussions on how to restructure bond contracts—particularly those of sovereign bonds—in the event of crises.

²⁴ However, banks may charge higher interest rates on newly established firms with no track records if there is little available information about their performance and creditworthiness. Once banks gain confidence about these firms through repeated transactions, they may lower interest rates and conduct staged financing to support the firm’s expansion. Alternatively, banks may charge lower interest rates from the beginning by obtaining more control over firms’ management (as venture capitalist). In practice, banks generally extend credit to family-controlled firms that have already been operating for some time, since some information about the firms is already available.

²⁵ Hoshi, Kashyap and Scharfstein (1990) have found that Japanese firms with close ties to banks—seen prominently in the late 1970s and mid-1980s—were less sensitive to cash flows generated from operations than firms with no close ties to banks. When cash flows decreased sharply, firms with no close ties to banks cut investment spending, whereas firms with close ties did not.

generally remain insensitive to true opportunity costs and default risk of their borrowers, and thus this may lead to an inefficient allocation of financial resources in a statistical sense. However, such a pricing can be justified if commercial banks provide more opportunities for firms to obtain funds and initiate or expand their businesses by charging them at below-market rates, later to recover these losses by charging above-market rates once firms earn profits. This phenomenon is also referred to as the “nondiversifiable intertemporal smoothening of risk” (Allen and Gale, 2000) or “intertemporal cross-subsidies” (Rajan and Zingales, 1998a). This type of banks’ roles is important particularly for developing countries since these countries are typically characterized by the existence of a large number of SMEs whose information is largely idiosyncratic and thus difficult to become transferrable to the market (Table 16).

Table 16. Stages of Economic Development and Corporate Formation



Petersen and Rajan (1994a) have supported this type of staged financing and have shown that multi-period state contingent contracts allow for more efficient contracting than single- or multi-period fixed payoff contracts. They have also found that backloaded state contingent interest payments (under staged financing) are less distortionary than frontloaded fixed interest payments (under market-based financing). They have also indicated that a provision of bargaining power to commercial banks can convert frontloaded payments into backloaded payments, since commercial banks in concentrated credit markets have an assurance of obtaining future surplus from their borrowers and thus are willing to accept lower returns initially.

Petersen and Rajan (1994b) have also provided evidence with respect to the advantage of bank finance particularly for SMEs. Based on US company data of 1988-1989, Petersen and Rajan have empirically shown that small firms tend to borrow from particular financial institutions and borrow a large proportion of their debt from financial institutions that provide informationally intensive financial services (e.g., depository services, cash management services, bankers' acceptances). Strong relationships were observed between financial institutions and small firms for the purpose of increasing the availability of financing. On the other hand, the impact of the relationships on interest rates charged by financial institutions was found weak, since the length of financial institutions with firms appear to have had little impact on interest rates. These results suggest that firms give priority to the availability of credit rather than with the availability of lower interest rates. Petersen and Rajan have suggested that the weak effect of relationships on interest rates may reflect the existence of information monopoly, which inhibits cost reduction passed onto firms. Petersen and Rajan (1994b) and Berger and Udell (1990) have documented that in the United States, small firms with close bank relationships gained credit more easily.

(2) Financing for Start-Up Enterprises

The second type of staged financing is for small, start-up firms with highly uncertain, innovative projects.²⁶ In general, venture capital companies use their own funds as general partners and, more importantly, pool funds from (largely institutional) investors including commercial banks through managing several capital funds. In this situation, banks play a role as indirect financiers for start-up firms, not direct intermediaries between ultimate creditors and start-up firms. Venture capital companies play the role of financial intermediaries between technology-intensive venture enterprises and these investors. In particular, they attempt to collect, process and provide information about venture enterprises at low costs. At this stage, the potential values of the proposed innovation projects are likely to be highly uncertain so that their financial decisions may be based on personal and intuitive judgement on the personal quality of the entrepreneurs as well as the nature of the projects (Aoki, 2000). Thus, public investors are unlikely to invest in such enterprises because they have to bear extremely high risks associated with their investment decisions.

Thus, venture capital companies need to obtain highly specialized knowledge in order to collect information about potential firms, select venture enterprises or sectors, and monitor

²⁶ The reason why venture capitalists tend to cluster together with entrepreneurial start-up firms in a particular locality, such as in Silicon Valley, is that they can gain the information necessary for selecting promising innovation projects through stage financing (Aoki, 2000).

closely the enterprises they have invested in. They achieve these goals first by managing and monitoring the governance of the enterprises by sending external directors to their board of managing directors. Second, they evaluate the performance of these venture enterprises at every stages of corporate formation and decide whether additional financing should be maintained so that these firms can enter into new stages of development.

The different financing stages for venture enterprises consist of: (1) finance for the initial research and development (R&D) to develop a new product prototype (seed); (2) finance for product development from prototype to initial production (start-up); (3) working capital finance to increase production and sales (expansion); (4) finance to prepare a company for listing (mezzanine); (5) finance to match management teams with companies (buy-out/ buy-in); and, (6) finance to restructure an unprofitable but potentially profitable company (turn-around).²⁷ In this process, refinancing in the court-unverifiable stage corresponds to the next staged financing contingent on the progress of development projects pursued by the entrepreneur.

In the early stage of venture corporate formation, venture capital companies may select enterprises to invest in based on their judgement about the quality of entrepreneurs, the credibility of their business plans and the estimates on risk-reward ratio. This selection process is particularly important because of the uncertainties surrounding new enterprises.

In the later stage of enterprise development, venture capital companies may continue to manage the same venture enterprises that are expanding or, alternatively, make new investment choices over other venture enterprises that are already in operation through the evaluation of their business market position and prospects, the types of technology used, and professionalism of their business plans. In this stage, the availability of business and management track records reduces some of the uncertainty and makes it easier for venture capital companies to judge the quality of a firm's performance. Knowledge accumulated up to, and used in succeeding, financing stages would become progressively articulated, although it would remain largely idiosyncratic (Aoki, 2000). Throughout this process, they provide the enterprises with guidance on how to manage their companies and also help them to standardize their management and operational systems.

In sum, venture capital finance provides intermediated external investment in SMEs that offers the prospect of above average earnings growth coupled with above average levels of investment risk (Aylward, 1996). The investment process consists of raising a fund; then screening, selecting, structuring, and monitoring investments. These investments would be eventually sold or listed in the equity market and the capital would be repaid to investors.

In the financing of venture enterprises, therefore, commercial banks play a limited partner role that provides funds to venture capital companies. Aylward (1996) has

²⁷ A unique feature of the Silicon Valley model does not lie solely in the ability of venture capitalists to supply risk capital (Aoki, 2000). It lies more in their ability to select evolutionarily, instead of by ex-ante design, promising projects that may eventually constitute innovative technological product systems, while rejecting financing and refinancing to technologically and commercially unpromising projects at an early stage. Thus, knowledge and judgement based on experience and highly specialized technical expertise are necessary for venture capital financing and governance. Their involvement in start-up firms end when they are acquired by other established firms or offered to the public.

documented that commercial banks contributed about 20% of venture capital funds in Asia in 1995—next to investment companies and subsidiaries or affiliates of industrial companies. In particular, banks were the leading investors in venture capital in Sri Lanka and Thailand, accounting for 70% and 40%, respectively.²⁸ By contrast, commercial banks accounted for about 10% in PRC, Indonesia and Malaysia.

So far, the volume and experience of venture capital finance has been limited in emerging market economies compared to industrial countries. Nevertheless, the amount of new venture capital financing has been rising in recent years in Asian countries such as PRC; Hong Kong,China; Republic of Korea; Singapore, and Taipei,China.

3.4. Failure of the Banking System

Emergence of Family Businesses

In Asia, firms generally form family businesses where owners, managers and creditors comprise of family (or related) members in the initial stage of expansion. At this stage, the size of a firm is relatively small and the amount of financial resources needed is limited. The firm's financing needs are met largely by private, internal, or informal funds or by retained earnings. When the financing needs are met fully by owners' funds or retained earnings, there are no conflicts of interest or asymmetries in information between enterprises and creditors because owner-managers and creditors are the same.

When some of the financing needs have to be met by relatives, friends or other informal sources, a modest degree of conflict of interest emerges between owners-managers and their creditors. However, family businesses can generally cope with these problems through two major internal self-controlling mechanisms (Herring and Chatusripitak, 2000). The first is that family ties or informal networks make it easier for these creditors to obtain information about borrowers. Information flows are smoother within networks of parties who know each other than within those of unrelated parties; thus, (good or bad) reputation is likely to be established more quickly in the former than in the latter. The other mechanism is that a loss of good reputation, threat of disinheritance, withholding of affection, and/or expulsion from the informal networks are able to function as enforcement instruments, encouraging borrowers to make greater efforts.²⁹

²⁸ Aylward (1996) has indicated that expansion investments accounted for 42% of the total venture capital funds in Asia, dominating as the venture capital financier. In India, start-up and expansion investments accounted for about 45% and 25%, respectively. By contrast, in Indonesia, the shares of expansion and start-up investments were 60% and 15% of total capital funds, respectively. In the case of Thailand, expansion and mezzanine investments accounted for about 50% and 30%, respectively. In Malaysia, start-up, expansion and mezzanine investments accounted for about 35%, 20% and 20%, respectively.

²⁹ When institutions are poorly defined or there are few formal institutions, economic activities are restricted to interpersonal exchanges (Aron, 2000). In such cases, repeated activities and kinship ties with cultural homogeneity facilitate self-enforcement. Transaction costs may be low in such an environment, but transformation costs are high because the economy operates at a very low level of specialization. Also, firms cannot engage in complex, long-term, and multiple-contract exchanges with effective enforcement in an environment of weak institutions. Thus, a basic structure of property rights that encourages long-term contracting appears essential for the creation of capital markets and economic growth.

Therefore, family businesses are able to survive in the absence of adequate financial, legal, and institutional infrastructures—such as accounting standards, disclosure requirements, bankruptcy laws, laws to protect creditors, prudential regulations, etc.—so long as they remain relatively small in scale and scope.³⁰ In other words, the governance structure of family businesses substitutes for market discipline, thus strengthening the rationale for the existence of this type of corporate structure particularly at the initial stage of economic development and corporate growth. In addition, the asymmetry of information between creditors and owner-managers on the one hand, and between owners and managers on the other hand, is not severe, especially when their businesses remain relatively small in scope and scale (Khan, 1999).

This may explain why family businesses are the predominant form of economic entities in Asia. Claessens, Djankov, Fan and Lang (1998, 1999) and Claessens, Djankov and Lang (1998, 1999b) have documented that families have management control over the majority of firms in Hong Kong, China; Indonesia; Malaysia; and Thailand. In a number of these Asian countries, their legal and regulatory systems are also underdeveloped.³¹

On the other hand, family-controlled firms in Hong Kong, China, for example, are abundant notwithstanding highly efficient legal systems, as pointed out by Khan (1999). Many of these firms continue to maintain family controls through substantial holdings of their firms' shares and their dependence on bank finance is relatively small. Nevertheless, these firms maintain efficiency and perform well under tough competition in a laissez faire environment and under an efficient legal system. In these circumstances, agency costs are relatively low and the problems of asymmetric information are not severe.

Separation between Owner-manager and External Creditors

When family businesses grow and expand further and thus require external financing in excess of funding available from the internal capital market, conflicts of interest emerge between owner-managers and external creditors. Family businesses may attempt to exert control over management through maintaining highly concentrated ownership by relying on external bank loans. Under such a new circumstance, unless outside creditors perform effective and efficient monitoring functions or alternatively, unless family businesses practice effective self-monitoring, they cannot produce good management performance or yield expansion, resulting in an inefficient resource allocation (Khan, 1999). Khan has pointed out that the effectiveness of self-monitoring of family businesses is high only at an earlier phase

³⁰ Nevertheless, Herring and Chatusripitak (2000) point out three shortcomings of family businesses. First, firms do not face the true opportunity cost of funds in the economy since lending costs are not market-determined. As a result, the scale of investment ends up too large or too small, deviating from the optimal level and causing inefficiency in resource allocation. Second, family businesses discourage the standardization of information about borrowers and its spread to public, which may sustain inefficient investment projects too long without market discipline. Third, high barriers to entry by unaffiliated firms and resultant lack of competition may increase the likelihood to reject more attractive investment opportunities.

³¹ Claessens, Djankov and Lang (1999b) have pointed out that legal and regulatory developments in Asia might have been impeded by the concentration of corporate wealth and extensive direct and indirect links between firms and governments. Khan (1999) has pointed out that relatively low-income countries, such as Indonesia, Philippines and Thailand, have relatively underdeveloped legal systems and uneven enforcement practices of laws, as compared with Hong Kong, China; Singapore; and Taipei, China.

of a firm's expansion. Self-monitoring incentives decline with a rise in agency costs or problems of information asymmetry. This is because with the increased separation between owner-managers and creditors, the cost of information collecting and processing about firms increase and thus creditors do not have proper incentives to monitor these firms at increasingly high costs.

In this situation, creditors may charge high lending rates to these firms in the face of a high degree of uncertainty about their prospects. This distorts firms' incentives toward undertaking risky activities and may ultimately reduce the availability of credit. In addition, creditors find it difficult to identify the appropriate opportunity cost of funds in the absence of an active secondary market for risk-free debt of a comparable maturity (Herring and Chatusripitak, 2000). Furthermore, weak financial legal infrastructures make it difficult for outside creditors to estimate the default probability of their borrowers and the expected recovery from the liquidation or sale of these firms in the event of default. Lack of credible accounting practices and good disclosure make it even more difficult for creditors to estimate the probability of default or an expected loss in the event of default.

Consequently, outside creditors are reluctant to provide funds to firms unless they can charge sufficiently high lending rates on them to compensate for the perceived risk (Stigliz and Weiss, 1981). However, such high rates are generally unaffordable to firms or invite excessively risky investment, leading to underinvestment or a shortage of sound investment projects.

Under such circumstances, a sound commercial banking system should emerge as an intermediary financial institution to mitigate agency problems and reduce agency costs, helping the sound growth of firms.

Failure of the Banking System

Nevertheless, the information gathering/processing and monitoring functions of the banking system failed in Asia. In the presence of massive capital inflows, banks became highly leveraged and concentrated their lending to a few projects or sectors, aggravating double mismatches. The failure of the banking system is attributable to the following five reasons:

First, strong government intervention in directing and guaranteeing bank credit adversely affected commercial banks' incentives to monitor borrowing firms by paying agency costs of collecting, analyzing and processing information about them. In order to encourage the expansion of particular industries or firms, for example, some Asian governments became heavily involved in directed financing of projects in industries that they selected for promotion. When the extension of external markets is limited and the capital markets are at a nascent stage, these governments may be able to coordinate private investment so as to induce their economies to take off. As the external markets expand and the industrial input-output nexus becomes complex, however, such government interventions are likely to fail.³²

³² In case of Japan's mainbank system, the government regulated the deposit rate to be at a level lower than the Walrasian rate. However, the government could maintain the positive real interest rate when combined with

In the Republic of Korea, for example, the government successfully adopted an export-led industrialization strategy through promoting large industrial conglomerates (“*chaebols*”) over the past three decades. A key instrument of the government’s industrial policy was directed lending of scarce financial resources, through “socialized” financial institutions, to heavy chemical industries managed by *chaebols* (Chan-Lee and Anh, 2000). While such an industrial strategy caused an inefficient resource allocation at the sacrifice of consumers and other industries, such negative aspect was more than offset by the remarkable economic success and relatively equitable income distribution. As savings and capital inflows accumulated, however, the government’s involvement in direct lending turned problematic, aggravating the problems of inefficient resource allocation and deterring private sector-driven initiatives.

Second, in order to achieve financial stability and minimize risks borne by commercial banks in the face of such failure, furthermore, these governments provided implicit guarantees to bank loans and bailed out borrowing firms regardless of their viability when they fell into financial distress. As a result, banks’ incentives to collect information and properly monitor their borrowers were considerably reduced, undermining the development of their internal risk management skills.

In the past, Asian governments protected commercial banks by setting the maximum rate of deposit rates (Rajan and Zingales, 1998b). When this policy became infeasible under deregulation and intensified competition, governments then protected banks by making explicit or implicit promises to bail them out in the event that an individual bank failed or the banking system was highly likely to collapse. However, such a guarantee generated moral hazard among banks in the sense that they engaged in reckless lending in the expectation that they would always be bailed out when financially distressed, regardless of their viability.

Third, the monetary authorities failed to improve prudential supervision and regulations and strengthen enforcement mechanisms when they began to deregulate their domestic financial sectors and liberalize their capital accounts in the 1980s and early 1990s (Chan-Lee and Anh, 2000). Shin (2001), for example, supports this view by pointing out that the problems of the Korean banking system before the crisis were caused by the failure of updating prudential regulations and supervision in consistent with environmental changes driven by liberalization trends.

To estimate the quality of regulatory environment and structural strength of banks, Chan-Lee and Anh (2000) used 16 microeconomic-based or institutional-related indicators, which can be categorized into the following four groups: First, the “regulatory environment” indicators include accounting standards; rules-based early-warning systems; prompt

stable macroeconomic policy. This generated rent opportunities for the banking sector. Also, the government limited the availability of bond issues by non-financial firms. This government intervention is sometimes called “financial restraint”—different from “financial repression”—since it created rent opportunities for the banking sector, the realization of which is contingent on the competitive efforts of individual banks to mobilize deposits. Such rents were conditional on banks’ compliance with government policy and preferences, since the monetary authority controlled branch licensing as an effective instrument with which to punish noncompliant banks (Aoki, 2000). Government preferences included banks’ lending to growing firms, monitoring of their client firms, and rescue of financially-distressed firms by their main banks to prevent economic and social instability. However, the government did not intervene directly to influence the financing decisions of banks.

corrective action programs; the maximum coverage guaranteed by deposit insurance systems relative to GDP per capita; and, harmonized prudential standards for all deposit-taking financial institutions. Second, the “structural” indicators for banks contain bank capitalization ratios; liquidity requirements; foreign currency exposure limit; maturity restrictions; and, prudential lending limits on single borrower bank exposure and related-lending to firms controlled by banks through third party loans or dummy accounts. Third, the indicators for the “quality of bank balance sheets and management” cover the share of non-performing loans in total loans; G10 or BIS guidelines on NPL classification; standard provisioning requirements; and, history of severe financial crises over the past five years (to partially offset the biases caused by the non-application of a “marketed-to-market” principal.) Fourth, the indicators for “banks’ structural strength” include the share of foreign-owned banks in total bank assets; the share of state-owned banks in total bank assets; international financial centers (for 10 largest OECD countries); and, OECD/BIS membership.

The summary indicator for the overall quality of the banking system combines the four groups of indicators mentioned above and scales the scores from 0 to ten (higher is better). The indicator shows that the United Kingdom, the United States, Switzerland, Canada, Australia, Hong Kong, China, and Singapore (by order) scored highest, suggesting that their banking systems are relatively sound. In contrast, the Republic of China, Indonesia, Pakistan, India, Sri Lanka, and Russia scaled lowest. It should be noted that Chile, Peru and Colombia scaled higher than Malaysia, Philippines, the Republic of Korea, Thailand, Taipei, China, and Japan. Compared between 1985 and 1995, the overall quality of the banking system in Malaysia and Thailand dropped from 6.7 to 5.6 and from 4.2 to 3.4, respectively. Between 1995 and 1998, their scores remained largely the same, suggesting no distinct direct impact by the Asian crisis. On the other hand, the Republic of Korea scored 3.7 in 1985 and 1995, but improved to 4.2 owing to strengthening of prudential regulations and supervision and promotion of the entry of foreign firms in 1998. Indonesia’s scores barely changed through the period at around 1.0. The indicator suggests that the legal and structural environment surrounding the banking sector was not very sound in Indonesia, Republic of Korea, Malaysia, and Thailand, as compared with advanced countries, Hong Kong, China, and Singapore.

Chan-Lee and Anh (2000) stressed that Asian countries did not draw the crucial policy lessons from earlier, very costly banking crises in Latin America and elsewhere and the regulatory authorities were either complacent or ignorant of how capital account liberalization had undermined systemic financial stability. Thus, the accounting, auditing and disclosure standards imposed on banks, which are necessary ingredients of prudential regulations, were opaque and inadequate. In the absence of regulatory measures to limit banks’ excessive risk-taking behavior, banks’ incentives to conduct proper functions were weakened.

Fourth, commercial banks excessively depended on collateral-based financing without conducting appropriate monitoring of their borrowers. Collateral refers to specific assets pledged as security for a loan. Taking collateral is necessary for the extension of bank credits because it imposes strong discipline on borrowers to pay back loans and hence reduces banks’ risks (Table 15). Moreover, collateral may signal borrowers’ credit quality (Besanko and Thakor, 1987). In theory, the value of collateralized assets should be equivalent to the liquidation value of the assets.

There are other advantages of collateral-based loans. First, collateral helps to reduce bank losses if borrowers become bankrupt. Second, if the value of collateral is hardly affected by the actions that borrowers undertake once banks provide loans, the provision of security by collateral would reduce the need for investigating the firms (Rajan and Winton, 1994). Rajan and Winton have stressed that fully collateralized creditors are immunized from firms' performance and thus have no incentive to monitor them. Third, secured creditors have a greater incentive to liquidate failing firms, which might improve overall efficiency. Fourth, collateral limits the extent to which other creditors can share in assets promised to particular banks, mitigating the extent to which prior creditors share in new projects and reducing under-investment problems (Stulz and Johnson, 1985). And fifth, the inspection of collateral gives creditors additional information about borrowing firms (Picker, 1992).

While collateral-based lending is quite common for the banking sector, the heavy dependence on particular types of collateral (such as real estate) enhances the fragility of the banking system since banks become more vulnerable to the boom-bust cycle of asset prices. The evaluation of the future value of collateral is even more difficult than that of bank credit, especially when the market for collateralized assets (e.g., real estate) is prone to herd behavior and market expectation. Therefore, taking collateral cannot substitute for banks' roles to collect, analyze and process information about borrowers and monitoring their performance. In addition, heavy reliance on collateral may reduce incentives to conduct adequate monitoring to avoid the adverse selection and moral hazard problems, especially when the prices of assets are rising.

A related issue is that bank loans generally take the form of collateral-based lending in Asia, but property rights are not well-defined and protected (Rajan and Zingales, 1998a). Without well-defined property rights, assets that can be used truly as collateral would be limited and consequently, borrowers' commitment to repay would be reduced. This problem is prevalent in Asia and governments have not taken definite steps to strengthen property rights and titles and supplement them with efficient and autonomous judicial systems.

Fifth, commercial banks are often owned by family businesses under the family-controlled conglomerates, as evidenced in Indonesia, the Republic of Korea, and Thailand. The ownership of East Asian firms is highly concentrated through family controls and group affiliations, generating a divergence between cash-flow rights and control rights. Even if control rights of each firm based on the share of stock holding is small, ownership based on voting rights, not cash-flow rights, can be concentrated through several mechanisms, such as multiple classes of voting rights, pyramid structures and cross holdings (Claessens, Djankov and Lang, 1999b). Multiple classes of voting rights reflect a deviation from the one-share-one vote rule and are moderately utilized in many East Asian countries. Pyramid structures—most pervasive in East Asia—are defined as owning a majority of the stock of one firm that holds a majority of the stock of another and this process can be repeated several times. Cross-holdings—although less pervasive than pyramid structures—refer to the case where a company holds shares in another company in its chain of control.

Exploitation is more likely when control rights are high and cash-flow rights are low because the controlling owners gain private benefits but suffer few of the consequences of the

reduction in the firms' value. Claessens, Djankov and Lang (1999b) have indicated that positive diversification effect of the conglomeration may be present in normal times, but it may have hidden costs arising from lower incentives for monitoring that only become apparent during economic downturns in developing countries. Furthermore, poor lending decisions and undue concentration of lending in certain sectors or projects (e.g., real estate, stocks) often reflect self-lending or lending to entities associated with commercial banks' shareholders or managers (Honohan, 1997). This problem is particularly severe if commercial banks are part of wider financial-industrial groups.

Reflecting these five factors, the relationship-based banking system was transformed into "crony capitalism." This is evidenced by the fact that banks loans were often kept from being written off for long periods regardless of their viability (Hakansson, 1998). These distortionary effects of government involvement became more pronounced when Asian countries experienced massive capital inflows from abroad. Thus, it should be stressed that crony capitalism—not relationship-based banks—aggravated double mismatches and caused the Asian crisis.

3.5. Appropriate Regulatory System under the Bank-based Economy

There are essentially two implications for the banking regulatory system.

Implications for the Regulatory System

First, commercial banks bear various risks with respect to their investment decisions. They also bear risks in the process of providing flexible, discretionary and repetitive loans as well as staged financing. Thus, it should be stressed that the direct risk bearers are commercial banks—not depositors, which are protected under the deposit insurance system (Table 15). The regulatory system generally protects creditors' rights in any types of financial transactions. Protecting external creditors increases the availability of funds by reducing uncertainty. Nevertheless, the emphasis varies depending on the types of financial system. In a bank-based economy, the emphasis is placed on protecting commercial banks.³³ Furthermore, the focus of the regulatory system under a bank-based economy should be placed on how to limit excessive risk-taking activities by commercial banks and thereby prevent systemic banking crises (Table 17).

And second, the fact that commercial banks collect, analyze and process inside information about borrowers by forming relationships suggests that they may be able to survive as a dominant institutional form even if disclosure, auditing and accounting requirements are loosely or inadequately implemented against borrowers in the absence of sophisticated legal and judiciary infrastructures. Since information about borrowers is largely idiosyncratic, banks do not have to provide depositors with such inside information on credit worthiness of borrowers in order to attract depositors. This suggests that the information infrastructure required in the bank-based economy can be different from and less stringent than that of the corporate bond markets. This is because banks loans are largely idiosyncratic and non-transferable and thus cannot and/or need not be standardized, whereas

³³ La Porta *et al.* (1998) have stressed that a legal environment that would make commercial banks confident about their claims is likely to encourage the development of an active banking sector.

standardization is necessary for corporate bonds.³⁴ The importance of commercial banks depends to a large extent on the nature of the informational, legal, and judiciary environment.

This may explain why firms in the United States, for example, heavily depended on bank finance at the early stage of economic development, and increasingly relied on market-based financing sources as the contractual system became more effective and price signals from the market became more informative. Also, the fact that many developing countries are at an early stage of the process toward mature legal and informational infrastructures may explain why bank finance has become the dominant form of corporate finance in these countries, as documented by Rajan and Zingales (1998a).

Further, Rajan and Zingales (1998a) have pointed out that in countries where corporate governance is inadequate and bankruptcy laws are virtually non-existent, the specific expertise of commercial banks—which know how to exercise power over borrowers even when explicit protections for the banks are inadequate—is necessary when extending loans to firms. They have also demonstrated the existence of a negative correlation between accounting standards and the size of the banking sector. Such illustrations appear too simplistic, since bankruptcy laws, for example, are necessary to protect commercial banks even in the banking system. Nonetheless, they highlight the essential points raised above.

Three Measures to be Applied to Asian Countries

There are three measures that should be undertaken to strengthen the banking industry in the context of Asian countries. The first measure is to remove government intervention that resulted in distorting the incentives of commercial banks to conduct effective information processing and monitoring functions. Therefore, the first step is to remove such government policies and cronyism from the banking industry and to reintroduce sound relationships-based bank financing for well-monitored corporate growth.

The second measure is to limit the ownership of banks by non-financial firms or maintain a legal separation between banks and non-financial firms. The affiliations between commercial banks and non-financial firms are likely to cause more serious problems than the affiliations between commercial banks and other financial institutions, by linking financial intermediaries with ultimate end-users of bank loans. The problems include misallocation of credit, extensive anti-competitive practices, exposure of the safety net established for banking to a broad range of risks emanating from non-financial sectors, and overburdening the supervisory resources of the banking regulators.

The third measure is to strengthen disclosure, accounting and auditing requirements on commercial banks. Such requirements should be imposed on commercial banks in order to enhance prudential supervision and thus contain systemic risks in the banking system (Table 17).

³⁴ For example, disclosure requirements in Germany do not exist to the same extent as in Anglo-American stock-market-based economies (Gorton and Schmid, 2000).

Table 17. Features of Informational, Legal and Judiciary Infrastructures

BANK LOANS	BOND FINANCE
<i>1. Main Objectives</i>	
How to limit excessive risk-taking behavior by banks and contain systemic banking crises	How to ensure public confidence in the bond market based on credible information about issuers
<i>2. Main Instruments</i>	
C. Enforceable Banking Laws <i>Setting the scope/ types of services granted to banks, and entry criteria</i>	A. Enforceable Securities Laws <i>Requiring full disclosure of information on issuers, penalizing accountants, auditors, investment banks for disseminating false information and prohibiting insider trading and market manipulation</i>
B. Prudential Regulations Imposed on Banks <i>Capital adequacy requirements, credit limits, foreign currency exposure requirements, accounting, auditing, disclosure requirements</i>	B. Proper Accounting, Auditing, Disclosure Rules Imposed on Issuers
C. Supervisory Authorities <i>Monitoring compliance by banks with prudential regulations</i>	C. Securities Exchange Committee <i>Monitor compliance by issuers with the laws, licensing issuers, due-diligence process of particular issues</i>
D. Deposit Insurance System	D. Risk-Rating Agencies
E. Lender of Last Resort	E. Advanced Judicial and Court System <i>Enforcement actions against the violations of laws</i>
F. Collateral <i>Registration, evaluation, collection</i>	
G. Insolvency Laws	

Measures to Strengthen the Banking System

After removing distortionary government intervention and imposing accounting, auditing and disclosure requirements on commercial banks, a series of prudential regulatory measures should be adopted to strengthen the banking system (Table 17). First of all, banking laws that define the scope and types of financial services granted to banks and entry criteria are necessary. In addition, there are at least five areas that should be carefully considered by regulators in order to establish an appropriate prudential regulatory framework. Those are (1) adoption of capital adequacy requirements, (2) limit on credit concentration and foreign currency exposure, (3) smoothening of the debt restructuring process, (4) adoption of deposit insurance system, and (5) control of excessive competition.

(1) Adoption of the Capital Adequacy Requirement

Imposing minimum capital adequacy requirements may promote prudent management of commercial banks. A higher capital adequacy requirement limits the ability to extend additional loans and thus contains inter-bank competition, which would increase the financial cushion of commercial banks to cope with a volatile economic environment (Eichengreen, 1999). The capital adequacy requirement also helps banks to reduce reckless lending, thereby mitigating the potential fragility of the banking system.

The capital adequacy requirement is also important to lower the credit risk premium, although at the same time, the lower leverage raises the banking operation costs. A decline in the capital-asset ratio is likely to raise commercial banks' cost of funds and thus add to the cost of funds to borrowers. As a result of higher lending rates, a decline in the capital-asset ratio may impair banks' ability to extract repayment from borrowers, leading to a lower recovery rate in default and a higher credit risk premium (Diamond and Rajan, 1999). Using firm-level data in the United States during 1987-1992, Hubbard, Kuttner and Palia (1999) have found evidence that even after controlling for the proxies for borrowers' risk and information costs, the cost of borrowing from low-capital banks was higher than the cost of borrowing from well-capitalized banks. In particular, smaller firms or firms with no bond ratings faced a higher borrowing cost when their relationship banks had a lower capital-asset ratio. In addition, the impact of capital-asset ratios on banks' interest rates was found to be larger during periods of aggregate contractions in bank lending, although the impact was quantitatively important only for borrowers with a high degree of information problems.

So far, more than 100 countries have adopted the 1988 Accord (BIS, 2001). To increase its effectiveness, the capital adequacy requirement should reflect the degree of risk associated with each bank's assets in order to reduce discrepancies between the private and social costs arising from risk-taking activities of commercial banks. Social costs include the threat to systemic stability. This risk-weighted mechanism in effect requires higher capital in booms than in recessions. Since loans to the private sector carries a 100% risk weight (while government bonds had a 0% risk weight) and the loans/total asset ratio tends to rise in booms, the measure of weighted risk assets tends to rise and so require more capital in booms (Turner, 1999). Conversely, less capital is required in recessions.

One of the difficulties to implement the capital adequacy requirement is that bank behavior tends to be procyclical independently of the regulations in place and the need for

such tightening usually becomes manifest only when recession or some other adverse shock reveals the consequences of poor banking practices (Turner, 1999). During booms, growth and rising asset prices can disguise fundamental underlying problems. Furthermore, economic expansion and bank credit growth tend to be self-reinforcing, since an improvement of real investment opportunities and a rise in asset prices encourage firms to borrow more and banks to lend more owing to a rise in the value of the collateral. Bank credit growth fuels the expansion, contributing to intense asset price booms. Banks also take more risks and accept greater exposure in the early stages of a boom, partly because banks' officers whose bonuses are tied to loans made, not loans repaid. Thus, a speculative bubble in asset prices becomes almost inevitable and the warnings of supervisors and banks' own credit risk departments fall on deaf ears. When the bubble bursts and the value of property collateral held by banks fall, the pressure to sell intensifies, reinforcing downward pressure on prices that may in turn induce further forced sales and driving property prices below their long-run equilibrium values.

Given the procyclicality of bank behavior, an important question arises: should bank regulations be tightened during a recession or a boom? Turner (1999) has exhibited two contradictory views: on one hand, tightening of the requirement may lead to a curtailment of bank credit that depresses asset prices and deepens the recession. This forces banks to retrench further and depress asset prices. On the other hand, sustainable growth is unlikely to resume until confidence has been restored in the banking system—especially in countries with inadequate standards and supervision.

One rationale for tightening the capital adequacy requirement arises from the procyclicality of the regulatory ratio.³⁵ To mitigate procyclicality of regulations, regulators could tighten the minimum requirement in normal times so that some margins or capital cushions are created for bond times. Furthermore, regulators may allow well-capitalized banks (meeting the risk-weighted capital ratio in excess of 10%) to undertake a wider range of activities and increase supervisory surveillance well before a bank's capital ratio falls to the 8% minimum, as practiced in the United States. In Chile, supervisors can act if capital will become inadequate within six months. In addition, regulators may apply forward-looking provisioning to cover normal cyclical risks and/or places emphasis on tier-1 capital.

Nevertheless, there are a few problems with designing cyclically-adjusted capital requirements. First, it may be difficult to distinguish cycle from trend, delaying adjustment to banking sector difficulties. Second, even if a "correct" cyclically-adjusted requirement can be calculated for the economy, it may be difficult to translate it to cyclically-adjusted ratios for individual banks because banks lend to various sectors and have different exposure to cyclical conditions. Third, the lags at the stage of recognition, decision, and implementation

³⁵ There are two possible channels for procyclical effects (Turner, 1999). First, loan losses tend to rise in recessions, and to the extent that those are not covered by loan provisions, such losses will lead to capital write-offs (reducing tier-1 capital). Then banks may have to raise new capital or reduce assets with high-risk weights to meet the minimum requirement, which may induce banks to cut lending. Second, the Basle Accord allows banks to count 45% of unrealized capital gains as tier-2 capital, and declines in equity prices reduce tier-2 capital. Furthermore, if banks sell securities to transfer capital gains from tier-2 to tier-1, the realization of gains will deplete tier-2 capital, for example, because of capital gain taxes of 50% in Japan. If banks become net sellers of equities, equity prices are pushed down further and procyclicality emerges.

would make it difficult to operate regulatory ratios in a countercyclical way. Taking into account these problems, this paper takes a cautious view that an increase in the capital adequacy requirement should not be implemented until all pros and cons are thoroughly examined.

In recent years, in order to improve the risk assessment on bank loans to the private sector, the Basel Committee on Banking Supervision has proposed an inclusion of an additional risk weight (50%) for rated corporate exposures (BIS, 2001).³⁶ The Committee has also clarified that the 100% risk weight for banks' exposures to unrated corporate represents a floor. A risk weight of 150% or higher may be applied to exposures in which the volatility of losses arising from credit risk is significantly higher than that for exposures receiving a lower risk weight—including bank loans to venture capital and private equity investments.

As for whether the capital adequacy requirement should be tightened in developing countries, Benston and Kaufman (1988) and Sachs and Woo (1999) have argued for an increase in the capital adequacy ratio as a way to deter banks' excessive risk-taking behavior in emerging market economies. In addition, Benston and Kaufman have proposed that countries with little supervisory capacity and pressure for regulatory forbearance should rely even more heavily on regulations requiring commercial banks to issue subordinated debt. The issuance of subordinated debt creates a situation in which the holder of the debt is not likely to be bailed out, enhancing the debt holders' incentives to monitor banks and thereby contributing to a reduction in excessive credit creation.³⁷

However, this paper views that the mere implementation of an increase in the capital adequacy requirement may not improve the soundness of the banking sector, since bank capital is rarely written down in developing countries for political or social reasons, as pointed out by Eichengreen (1999). The capital adequacy requirement works only if there is a realistic prospect that bank capital should be written down on insolvent commercial banks. If there is political pressure for the authority to recapitalize otherwise insolvent commercial banks on concessionary terms, the capital adequacy requirement will be ineffective. In addition, if governments establish a special public facility that takes non-performing loans off the commercial banks' books in return for government bonds in excess of these loans' marking-to-market value, the capital adequacy requirement does not help improve commercial banks' management. This suggests that by simply applying capital adequacy requirements to the source of commercial banks' funding, excessive risk-taking of commercial banks may not necessarily be mitigated. In addition, the capital adequacy requirement is not appropriate when accounting standards are inadequate.

³⁶ The increased reliance on the assessment of credit rating agencies may enhance the procyclicality (Turner, 1999). The performance of credit rating agencies during the Asian crisis suggests a marked cyclical: while they did not downgrade Asian countries during the pre-crisis period, their downgrades in the midst of the crisis made the crisis worse.

³⁷ Argentina required banks to acquire an external rating and issue subordinated bonds. This policy reflects a view that when a bank becomes weaker, the price of its bonds will decline and induce depositors and investors to shift to stronger banks. This reallocation from weak to strong banks causes no impact on the banking system. During recessions, however, the prices of subordinated bonds issued by all banks are likely to decline, swamping the differences among individual banks and enhancing procyclicality (Turner, 1999).

(2) Limit on Credit Concentration and Foreign Currency Exposure

Measures to strengthen the banking system would include a limit on large exposures to a single borrower; a limit on credit concentration in particular industries; a foreign currency exposure limit for loans; and incorporating various elements of cross border risks in loan classification and loan-loss provisioning requirements. Those risks include foreign exchange risk (arising from adverse changes in exchange rates), settlement risk (in the settlement of foreign exchange operations due to time zone differences, the existence of different currencies or different settlement systems), and country risk (associated with the economic, social and political environment of the borrower's country). Furman and Stiglitz (1998) have emphasized the use of speed limits and direct restrictions on lending to real estate. It is also crucial to monitor commercial banks' foreign-currency-denominated or indexed loans extended to domestic borrowers.

(3) Smoothening Debt Restructuring

The laws and regulations to protect creditors are generally associated with bankruptcy and reorganization procedures. In particular, these cover measures to enable creditors to repossess collateral, to protect their seniority, and to make it harder for firms to promptly seek court protection under reorganization. Bankruptcy laws contain reorganization and liquidation proceedings that facilitate debt restructuring and thus contribute to an increased availability of commercial bank loans—by lowering the degree of uncertainty in the event of borrowers' failure. The reorganization proceedings would allow borrowers to submit restructuring plans and, if accepted by creditors, give them an opportunity for a new start. Under bankruptcy laws, borrowers must submit all their assets to the control of the bankruptcy courts and thus cannot use collateral of secured creditors without their approval or a court order. In addition, borrowers are not allowed to engage in transactions outside the ordinary course of business and sell property without a court order.

In some countries with inadequate legal systems, the enforcement of private contracts through the court system can be costly. In such a case, judicially-enforced laws or government-enforced regulations may be more efficient. Furthermore, penalizing bad managers and ensuring that bank owners bear some costs before recapitalization are desirable to mitigate managers' expropriation (Williamson, 2000).

(4) Adoption of the Deposit Insurance System

Systemic risk adversely affects a whole country through chain reactions of payment crises and bank runs. For example, a failure of one commercial bank makes it difficult for firms with close ties to that bank to raise funds, since other commercial banks do not have relationships with the firms or specific knowledge to initiate new credit to them. As a result, these firms may be forced to go illiquid or even bankrupt, which lead to illiquidity and bankruptcy of other firms that conduct transactions with the bankrupt firms. This may adversely affect other commercial banks that form relationships with the indirectly affected and bankrupt firms. A failure of one commercial bank may also induce depositors of other commercial banks to withdraw their deposits for fear that their banks may also fail. Bank runs are the result.

One way to cope with this kind of systemic risk and at the same time protect ultimate creditors (i.e. depositors) is to introduce a deposit insurance system. A deposit insurance system provides assurances to savers, which can be a source of financial sector stability by reducing the risk of bank runs and the disruptive breakdown of essential banking activities that accompanies such runs (Cull [1998] and Financial Stability Forum [2000]). Such a system also contributes to smoother functioning of the payments system and credit flow mechanisms. The system may also increase depositors' confidence about the banking system by alleviating uncertainty and thus may spur capital mobilization.

On the other hand, a poorly-designed deposit insurance system may hamper the soundness of the banking system. If the system guarantees all creditors and depositors regardless of their size, for example, it may provide commercial banks with an incentive to engage in risky projects since their liabilities are fully protected. If the system makes runs unlikely, owners and managers of the insured banks may take on additional risk in their asset portfolios and reduce the amount of capital and liquid reserves they hold to enable them to weather shocks (Garcia, 1999). This problem may be more pronounced for commercial banks that are on the verge of insolvency. Moreover, Calomiris (1990) and Kane and Hendershott (1996) have found that when prudential supervision is soundly and adequately conducted, it is likely that the deposit insurance system remains solvent. This may be a reflection of the fact that the sound prudential supervision tends to reduce the likelihood of the banking failure and thus minimize the need to utilize the system.

Furthermore, when the deposit insurance system provides insurance and charges premiums that are not adjusted for the risk that commercial banks place on the guarantee fund, the most sound banks are likely to remain outside the system or withdraw from it. As for the remaining banks, underpricing of risk provides their managers with an incentive to hold excessively risky portfolios (Cull, 1998).³⁸ As a result, when some commercial banks fail due to their own risky lending, other surviving banks in the system have to pay higher premiums in order to cover the costs of paying depositors of the failed banks. The increase in premiums, however, may induce sound banks to withdraw from the system. This situation continues until only the weakest banks remain in the system. Under these circumstances, the deposit insurance system becomes unsustainable (Garcia, 1999).

Thus, it is crucial to design a deposit insurance system that encourages all parties directly or indirectly affected by the system to keep the financial system sound. To achieve this, Garcia (1999) points out certain conditions are necessary. First, the system should be explicitly and clearly defined by laws and regulations. Second, the authority should promptly deal with problematic commercial banks to restore their health. If the soundness of these banks continues to deteriorate, the authority should close or merge them, or resolve the difficulties. Also, it is impractical to establish a deposit insurance system without effective prudential supervision and regulations.

³⁸ In the United States, for example, increasing competition in banking services and underpriced deposit insurance led to riskier banking portfolios without commensurate increases in bank capital (Cull, 1998). Furthermore, Demirguc-Kunt and Detragiache (1997) have reported a positive association between explicit deposit insurance and systemic bank insolvencies. Cull (1998) has also stressed that such a system may have a negative effect on financial sector development.

Third, the structure of the deposit insurance system should be more incentive-compatible if membership is compulsory. A compulsory system helps mitigate the problems of adverse selection, where only unsound commercial banks are left in the system. Also, banks' risk-taking behavior may be mitigated if the coverage is narrow, with only small depositors being protected. A coverage limit encourages uncovered large depositors and sophisticated creditors to discipline their banks. On the other hand, the coverage should not be too narrow or it may not prevent bank runs in the event of financial troubles. Therefore, there needs to be a balance between uncovered large depositors generating a disciplinary effect and protection against bank runs and associated costs caused by uncovered depositors (Financial Stability Forum, 2000). Furthermore, the problems of adverse selection can be mitigated if insurance premiums are risk-adjusted for individual banks. As discussed earlier, however, the idiosyncratic nature of information about individual borrowers of bank loans makes extremely difficult to estimate insurance premiums for individual banks by taking into account the skewed distribution of bank credit risks. The same difficulty applies to the estimation of risk-adjusted capital-asset ratios that are appropriate for individual banks.

Lastly, the system should be well-funded, preferably by its member commercial banks. An under-funded system may induce staff to avoid the early recognition of bank failures, conflicting with the needs for a prompt resolution. A privately-funded system may also encourage bankers to keep their banks sound. Nevertheless, governments often intervene in the system and make provisions to assist a depleted fund with loans, since an under-funded system becomes an obstacle to closing failed banks.

Furthermore, a provision of a lender of last resort facility is also important to limit costly bank runs. However, the prospect of such protection tends to undermine market discipline by making depositors careless as to where they place their money. Thus, regulators need to constrain risk-taking behavior by banks with other measures listed in this section.

(5) Avoidance of Excessive Competition among Banks

When regulators determine entry criteria, they need to ensure that commercial banks have an incentive to establish relationships with their borrowers. To do so, regulators need to balance between allowing banks to maintain profitability (or earn economic rents that offset risks borne by banks in the process of providing various financial services) and preventing them from extracting excessive rents.³⁹ Without sufficient rents, banks may have no choice but to engage in risk-taking activities because they need to fight for their market shares or profit margins. As a result, such risk-taking behavior would reduce the value of banks' future earnings and associated incentives to avoid bankruptcy (Allen and Gale, 2000). To maintain sufficient profitability in the banking process, therefore, excessive competition among banks needs to be avoided through granting a relatively small number of them the privilege of offering demand deposits and payment services (Rajan, 1997).

³⁹ Aoki (2000) defines four types of rents: (1) monopoly rent that a financier can extract from the borrowing firm through its advantageous position; (2) policy-induced rent that a financier can extract through some kind of government intervention in the domain in exchange for its implicit obligation to relationship financing; (3) reputation rent that a financier can extract by building a reputation for commitment to relational contingent governance; and (4) information rents that a financier can gain from the borrowed firm through the production of economically valuable knowledge that is not immediately available to others.

Limiting competition among commercial banks is also crucial for strengthening implicit contracts. Commercial banks need to collect rents over time by charging lower-than-market lending rates when their borrowing firms are relatively small and unprofitable, and charging higher lending rates once the firms expand and earn profits. Increased competition may limit the opportunity for banks to extract these rents by making it easier for firms to switch to other banks that offer more attractive interest rates. Consequently, banks become reluctant to offer staged financing or credit lines to financially-distressed borrowers. Thus, regulators need to ensure that banks are willing to finance relatively young and distressed firms by maintaining profitability in the banking sector.

The study by Petersen and Rajan (1994a) supports this view. They have demonstrated in their model that credit market competition imposes constraints on the ability of borrowers and commercial banks to intertemporally share firms' surplus when uncertainty about firms' prospects is high. When the banking sector is competitive and banks cannot hold equity claims, they cannot expect to share the future surplus of their borrowers. In this case, banks are constrained to break even on a period by period basis since they would be driven away from competitive market if they charged interest rates above the competitive level. And such high interest rates may distort firms' incentives and at the same time lower the credit availability. Thus, competition makes lending relationships less valuable to borrowers because they cannot expect financial support from commercial banks when most needed. On the other hand, a monopolistic bank is able to share borrowers' future surplus through extracting future rents. This enables the bank to receive delayed interest payments from borrowers over time and encourages it to provide more credit than the amount available in a competitive credit market.

Based on data of small firms in the United States during 1988-1989, Petersen and Rajan (1994b) have proved the validity of their theoretical model. They have presented evidence that 66% of firms in the most concentrated credit market have institutional debt (where commercial banks are major creditors) compared with 55% in the most competitive market. Furthermore, the difference in institutional financing is more extreme among firms that are four years old or less. It was found that 65% of firms in the most concentrated credit market have institutional debt (largely bank loans), whereas 48% of firms in the most competitive credit market have institutional debt. As firms grew older, Petersen and Rajan have found that the difference in the fraction of firms being financed in the two markets vanished; for example, 61% of firms that were older than 10 years had institutional debt regardless of the degree of credit concentration.

While attempting to maintain adequate rents for banks, nevertheless, regulators need to introduce measures to prevent banks from giving rise to excessively high risk-taking behavior and extract rents from their borrowers that are more than justified by risks that they bear. This discourages borrowers from undertaking innovative, profitable ventures, thereby achieving slower economic growth (Rajan, 1992). Thus, regulators need to carefully consider the extent of competition in the banking sector by taking into account of the trade-off and supplement this policy with other policies that contribute to limiting banks' excessive risk-taking behavior, such as capital adequacy requirements.

4. Inherent Features of Corporate Bond Markets

This section examines the second category of questions raised in Section I. This section attempts to respond to these questions by first examining the advantages of corporate bond finance and preconditions for developing corporate bond markets. Then, factors deterring the development of corporate bond markets as well as necessary policies are discussed.

4.1. Advantages of Corporate Bond Finance

There are five main advantages to corporate bond finance: (1) mitigating double mismatches, (2) reducing borrowing costs, (3) achieving efficient resource allocation, (4) promoting derivatives market development, and (5) improving the availability of potential bond finance even in the face of financial difficulties.⁴⁰

Mitigating Double Mismatches

Generally, a large number of public investors are involved in purchasing new corporate bonds, and thus, the burden of risks can be spread among them. In this way, the corporate bond market can assume and diversify more risks than bank finance whereby long-term finance for high-risk projects becomes possible.

If this happens, developing corporate bonds may be able to mitigate double mismatches and thus to lower the likelihood of facing another capital account crisis. The issuance of corporate bonds increases the amount of debt raised in domestic markets, thereby reducing the currency mismatch. In addition, the issuance of longer-term bonds lengthens the maturity of liabilities of non-financial firms, shrinking the maturity mismatch. If commercial banks issue long-term debentures, such corporate bonds also contribute to mitigating a maturity mismatch of the banking sector.

Lowering the Cost of Borrowing

Corporate bond finance can be cheaper than bank loans—particularly for reputable, profitable, or large-sized firms. Interest rates charged in the corporate bond market usually take into account risk-free interest rates, systemic or market-wide risk, firms' specific risk (e.g., credit risk, default risk, and liquidity risk), and the premium for information asymmetry. In general, established firms of good reputation are able to borrow funds at lower interest rates from the corporate bond market than from the banking sector. Since these firms have a good reputation and the public is familiar with their activities and management styles, their risk premiums are relatively low. Diamond (1991) has stressed that firms' credit records acquired when they were monitored by banks serve to predict future actions of these firms once monitoring stops. Also, default risk of these firms is relatively low since they are generally large, profitable and diversified. Since developed countries are characterized by the presence of a large number of reputable firms, many firms have access to the corporate bond market at reasonable costs (Table 16).

⁴⁰ The trade off is that lengthening debt maturity generally increases debt-servicing costs (Calvo and Mendoza, 2000b).

This also suggests that the development of the corporate bond market reduces the role of intermediation and thus provides the best terms to borrowers by reducing costs of intermediation (Allen and Gale [2000], Bolton and Freixas [1997] and Cantillo and Wright [2000]). In the corporate bond market, investment banks play a role as market intermediaries (e.g., underwriters, brokers, dealers). They design the terms of conditions of corporate bonds and disseminate information about issuing firms to public investors, thereby smoothing the operations and efficiency of the market. Nevertheless, provided that competition among investment banks exist and information is standardized, their roles of intermediation are small compared with commercial banks, which must directly bear risks of financing borrowing firms and therefore have to spend more time and money to reduce information processing and monitoring costs. As a result, their intermediation costs become higher than those of investment banks.

Firms with a lower probability of financial distress are likely to issue corporate bonds in order to take advantage of the lower equilibrium yield on bonds, as demonstrated by Chemmanur and Fulghieri (1994) in their model. Compared with riskier companies, these firms care less about efficiency liquidation (benefits of reducing liquidation costs) that might be realized under bank finance because of a lower probability of falling into financial distress. They choose to issue bonds so as not to pool with riskier firms, thereby borrowing at lower equilibrium interest rates than would be possible if they were to choose bank loans. As for the types of issuers, Cantillo and Wright (2000) have shown that large firms with abundant cash tap the capital markets directly using the cross-section firm-level data of 1992. This suggests that the size and cash flows are the most important attributes as predictors of firms' choice of lenders. They also showed that capital markets cater to safe and profitable industries and are most active when commercial banks' earnings (defined as commercial banks' undistributed profits over total assets) are low. With respect to the impact of commercial banks' earnings on firms' capital choice, a decline in these earnings generates more friction with depositors and thus raises commercial banks' opportunity cost of capital, which makes bond issuance more attractive. In equilibrium, these rents disappear as bondholders cut rates faster than commercial banks and thus gain new customers.⁴¹

Using panel data for 1985-1992, Cantillo and Wright (2000) have derived the same conclusion that the size, cash flows of borrowing firms and commercial banks' earnings are important determinants of firms' choice of lenders. Also, the flight to quality story by ultimate borrowers was supported: corporate attributes have a stronger impact on firms' capital choice during recessions than in booms.

Anderson and Makhija (1999) have pointed out that in Japan, firms shifted from heavy dependence on bank loans to bonds in the 1980s when liberalization took place, since some firms found that securities issues became cheaper and less burdensome than bank loans under deregulations over eligibility and relaxed approval standards for corporate bond issuers.

⁴¹ The above findings hold regardless of firms' age or the maturity of their obligation. While commercial papers and bonds stand at opposite extremes of the maturity spectrum, the corporate attributes have the same effect on lenders' choice. The weak impact of firms' age is consistent with the findings of Petersen and Rajan (1994b) that the impact of age on lenders' choice is most important when firms are young and that marginal increases in firms' age are unimportant by their 30th year.

Until 1979, Japanese firms were prohibited from issuing unsecured bonds and in addition, regulations were heavily biased against secured issues as well. Furthermore, firms wishing to issue bonds in international markets were subject to stringent approval criteria prior to the early 1980s. As a result, bond issues were limited to those of government entities, government-backed utility corporations, and large, reputable firms.

Efficient Allocation of Financial Resources

The corporate bond market promotes the use of price signals of capital and contributes to an efficient resource allocation. For this, however, the secondary market should be deeply developed. When capital is scarce in the economy, this benefit may be surpassed by the benefits offered by commercial banks. Since commercial banks have private information through relationships, they can determine firms or projects that have positive net present values and thus to effectively allocate scarce resources. When capital becomes abundant relative to investment needs, however, banks may find it difficult to engage in effective information processing and monitoring functions. As a result, they may end up concentrating capital on specific borrowers, sectors or projects, amplifying the boom-bust cycle of assets. In this circumstance, price signals are likely to become important in matching the supply and demand of capital. With the help of price signals, large numbers of investors are guided to make the right investment decisions and avoid the problems that banks often face—the value of investment diverging from the level prevailing in markets (Rajan and Zingales, 1998a).⁴²

Developing Derivatives Markets

Given limited issues of government bonds which can be used as benchmark assets, the corporate bond market with various maturities and ample issue sizes may develop a market-determined term structure of interest rates that accurately reflects the opportunity cost of funds at each maturity. Developing a term structure of interest rates helps countries to establish efficient derivatives markets, such as forward markets, futures markets, swap markets and option markets. These markets would enable economic agents to hedge financial risk at low costs and thus promote economic transactions. Herring and Chatusripitak (2000) have stressed that forward markets—where the forward price is linked to the current price by the interest cost of holding the asset until the maturity of the forward contract—cannot increase market depth and liquidity unless there are market-determined domestic interest rates. Otherwise, market makers find it difficult to hedge their positions using bonds.

⁴² Hoshi, Kashyap and Scharfstein (1990) indicate that price signals given by poor cash flows were ignored under the Japanese banking system. Thus, despite firms' continuous access to lines of credit from their relationship banks, their Tobin's q was lower than that of firms with no close ties. Weinstein and Yafeh (1998) have supported this outcome and have stressed Japanese firms with close ties to banks did not generate higher profits or growth rates than those without such ties. Peek and Rosengren (1998) have shown that relationships may distort the allocation of funds. They have pointed out that Japanese banks increased their lending to commercial real estate-related projects in the United States in the early 1990s, but then reduced their lending even though real estate prices and lending by other banks were rising. Instead of reducing losses incurred in Japan as a result of a sharp decline in real estate prices, Japanese banks shifted their financial resources from the booming market in the United States to the plummeting market in Japan to exert relationships.

A similar argument is applied to futures markets, where a key link between spot and futures prices is the interest rate corresponding to the maturity of the contract as well. Futures markets differ from forward markets in the sense that changes in the value of a futures contract are settled daily over the term of the contract, whereas forward markets settle a contract at the pre-determined maturity date. Also, swap markets—where swap contracts can be decomposed into a portfolio of forward contracts in which at each settlement date throughout the term of the swap contract part of the change in value is transferred between the counterparties—require spot and future interest rates. Last, option markets, where owners of an option contract have the right but not the obligation to perform as specified in the contract, can be regarded as one type of forward contracts and thus require interest rates for executing contracts.

In theory, these derivatives markets may be able to exist without the term structure of interest rates since these contracts can be tailored for each client. However, such transactions are costly relative to viable derivatives markets, thus discouraging active hedging. This explains why derivatives markets are not active in many emerging market economies and developing countries and why domestic entities do not use derivatives for hedging various risks.

Availability of Credit Even in the Face of Financial Difficulties

In the case of the corporate bond market, public investors may be able to distinguish between viable and nonviable firms based on publicly available information. Thus, it has been argued that public investors would extend funding only to viable firms, increasing the likelihood that these firms would be unaffected even under various exogenous disturbances, thereby avoiding downward chain reactions and hence preventing serious economic downturn or financial crisis.

By contrast, in the case of bank finance, firms are likely to suffer from a shortage of funds when commercial banks with which they have relationships fall into trouble. Bank loans are formed based on non-transferable inside information and thus, relationship commercial banks know more than other commercial banks about these firms' true credit risk. Since other commercial banks face the risk of getting only "lemons," they are unwilling to extend credit to these firms, consequently forcing them to become financially distressed even though they are viable. This explains why bank loans are essentially illiquid assets that are not justified for sale (Rajan, 1996). Also, the financial distress of these firms gives rise to chain reactions of settlement failures among commercial banks and hence overall financial panic. This problem appears to have become pronounced in recent years, since large numbers of commercial banks have suffered in the Asian crisis.

This benefit from corporate bonds, however, should not be overstated. The reason is that bond prices are sensitive to changes in market conditions and sentiment, which would be easily reflected in risk premiums. This is true especially when the whole economy and the financial system suffer from aggregate shock. A hint of financial distress becomes self-fulfilling and all financial markets simultaneously close off to issuing firms. In this situation, interest rates become prohibitively high so that the issuance of bonds is discouraged.

4.2. Appropriate Regulatory System for Corporate Bond Markets

Corporate bond markets can soundly develop only when information asymmetry between ultimate creditors and ultimate borrowers can be systemically reduced. And, the ways these markets reduce information asymmetry and related agency costs are inherently different from those of the banking industry.

Given the severe information asymmetry, there are essentially two prerequisites for the development of sound corporate securities markets: (1) public availability of correct and credible information about the value of issuers' businesses, and (2) public confidence in investing and trading corporate securities at fair prices without being cheated (Table 15).

Making credible information available to investors is not easy. This is because corporate insiders have an incentive to exaggerate issuers' past performance and future prospects, and investors cannot directly verify the information that these issuers provide. If investors are suspicious of the credibility of the provided information, they will discount the prices they will offer even to honest corporate issuers who actually report truthful information to public investors. As a result, these honest issuers cannot receive the fair value of their corporate securities and therefore may turn to other forms of financing. In contrast, dishonest issuers who do not report correct information may still attract public investors by offering low, discounted prices (i.e. high coupon rates). This points to the problems of adverse selection in the corporate securities market, where high-quality corporate issuers are forced to leave the market because they cannot obtain fair price for their securities, and low-quality issuers attempt to utilize the market.

If this is so, how can we solve the severe problems of information asymmetry? They can be mitigated only through a complex set of laws and judiciary infrastructure that give public investors reasonable assurance that corporate issuers are truthful and that the information they obtain from issuers is credible. Without such laws and enforceable institutional arrangements, false and misleading corporate information—particularly about small corporate issuers—tend to be disclosed to the public, resulting in the adverse selection problems or inflation in the prices of securities.

Informational asymmetry in the corporate bond market is reduced by ensuring that the public gets timely, precise, and standardized information about bond issuers.⁴³ Standardized information explicitly embodies information about issuing firms in terms of coupon rates, risk premiums, length of maturity, etc. They would fulfil this objective by imposing disclosure, accounting and auditing requirements and supplementing them with risk rating agencies and other information-related agencies (Table 17). The corporate bond market also

⁴³ Berlin and Bulter (1996) have shown in their model that an improvement in information dissemination about competing firms would promote implicit coordination among firms and thus produce better outcomes (confidentiality effect). By communicating information, firm 1 implicitly induces firm 2 to decrease output in states where firm 1's marginal return to higher output is the greatest and to increase output in states where firm 1's marginal return to higher output is the smallest. Such a communication is more valuable when the difference in marginal costs between high and low cost states is higher. Bank loans are chosen when the probability of low cost states is low, whereas bonds are chosen when the probability of low cost states is high. In addition, for sufficiently low agency costs, bond finance dominates bank loans owing to the confidentiality advantage enjoyed under the corporate bond market.

attempts to mitigate information asymmetry by improving transparency and strengthening the informational, legal, and judiciary infrastructures.

Accounting, Auditing and Disclosure Requirements

The application of appropriate (and standardized) accounting and auditing rules is an indispensable basic condition for promoting credible disclosure and standardization of information about issuing firms. Concerning the corporate bond market, accounting and auditing standards should be imposed on issuing firms with respect to their earnings performance and debt service capacity for the recent past and the foreseeable future and must be rigorously interpreted and applied. The availability of information to a wide range of (potential) public investors is necessary so that investors can make their own investment decisions. Regulators should require issuing firms to release properly audited financial statements covering the last few years and a qualified and quantified business outlook for the coming few years.⁴⁴

Fluck (1998) has pointed out that publicly traded securities are more suitable when issuers' books are frequently audited and their performance is frequently scrutinized by analysts, whereas bank loans are more suitable for cases in which such verification is costly to public investors and underwriters. Demirguc-Kunt and Levine (1999) have provided empirical support that countries with strong accounting standards tend to be market-based and are unlikely to have underdeveloped financial system. However, it should be noted that the basic objectives of laws and institutional requirements reflect the fundamental differences between the two types of financing sources.

Guidelines on prospectus requirements for international borrowers compiled by the International Organization of Securities Commissions (IOSCO) and criteria similar to those applied by international credit rating agencies might serve as models for eligibility criteria. To ensure that corporate bonds maintain their quality during their whole life, original issuers have to demonstrate their eligibility on a current basis via disclosure of appropriate company information at regular intervals. If issuers fail to comply, regulators should punish those investors by disqualifying their bonds and prohibiting their official trading.

Also, data on bond prices and quantities should be available on a real-time basis through a modern computerized information system prior to the completion of any bond transaction. Without real-time information, the system might become inefficient and intransparent. To facilitate trading activity, it may be desirable to adopt centralized bond information system, since it enables coverage of information with respect to transactions on the stock exchange and over-the-counter (OTC) markets. For example, Emery (1997) has

⁴⁴ Endo (2000) has pointed out that disclosure requirements are most stringent for publicly offered equity by new comers (initial public offerings), whereas those for privately placed bonds by repeaters are the simplest. Listing of issuers' stock is a continuing disclosure mechanism not only for the listed stock itself but also for issuers' corporate bonds, regardless of whether bonds themselves are listed or not. Through the initial public offering process, firms disclose their operations, financial statements and other required information to the public. Generally under the listing agreement, the listed firms are committed to making regular and periodic disclosures on their performance and business strategies. This information practically forms the basis for the information required for investments in bonds. Thus, Endo has stressed that the development of equity markets is a prerequisite to that of corporate bond markets.

pointed out that in some Asian countries, there were no daily published prices on bond transactions in the OTC market and thus it was not possible to track an issue to evaluate if it would be a desirable investment. Investors in the OTC market found it difficult to value their bond portfolios as there was no published last done price.

Disclosure and reporting requirements as well as accounting and auditing rules are likely to improve transparency and strengthen discipline of issuing firms (Hakansson, 1998). Since limited power is granted to individual investors, enhancing transparency through these requirements would help investors since it may function as an enhanced guarantee to protect them. Otherwise, decentralized investors find it difficult to detect all the abuses prevailing in the bond market (Rajan and Zingales, 1998a).

Moreover, improving transparency would contribute to enhanced efficiency in the corporate bond market. Broker (1993) has pointed out that efficiency refers not only to allocative efficiency and cost efficiency, but also to the availability and quality of financial services and to the convenience with which investors and market players can benefit from such services. An efficient market is likely to adapt itself promptly and flexibly to a rapidly changing market environment. Also, the maintenance of a highly competitive and flexible financial system can be the best guarantee for sustaining market confidence in the system.

Securities and Related Laws

The prompt and unbiased enforcement of contracts is a pre-condition for the viability of a bond market (Rajan and Zingales, 1998a). Regulators should develop a system to protect a large number of public investors against losses and other damages that may arise from false or misleading information, fraud, or other malpractices. When insiders have better information about firms than outsiders, furthermore, public information does not contain all information necessary for investors to make correct investment decisions and thus markets become ineffective devices for exerting corporate control (Myers and Majluf, 1984).⁴⁵ Therefore, the contractual system should be improved to reduce the problems of information asymmetry and avoid such malpractices since contracts and associated prices determine bond transactions. Failure to achieve these goals may threaten counterparty performance, result in large losses to investors, and damage other market participants (World Bank, 1995).

Furthermore, regulators should establish securities laws to enforce extensive financial disclosure, including independent audits of companies' financial statements. Securities laws should impose on accountants sufficient risk of incurring liability to investors for having endorsed false or misleading financial statements. The laws should also impose investment bankers sufficient risk of incurring liability to public investors for securities they underwrite. The laws should accompany reliable enforcement mechanisms. In this light, securities regulators with well-trained, highly-skilled staff and sufficient budget are needed in order to pursue legal cases. The establishment of enforceable securities laws is likely to attract a wide range of investors by forcing issuers to reveal information about the usage of the funds and to put in place standardized accounting and auditing systems. Since it is difficult to protect investors' rights solely with contracts, laws are necessary to enforce the contracts. Other important areas that should be covered by laws include insider trading, market manipulations,

⁴⁵ When the problems of asymmetric information are severe, the potential effectiveness of corporate control by takeovers declines. This is because ill-informed outsiders are unlikely to outbid relatively well-informed insiders for control of firms unless they pay too much (Levine, 2000).

violations in connection with securities offerings, and financial disclosure with a reporting system (Table 17).

Demirguc-Kunt and Levine (1999) have pointed out that countries with a Common Law tradition stress protection of investor rights, good accounting regulations, contract enforcement, and low levels of corruption; in addition, many countries with this tradition have no explicit deposit insurance. Because of these features, they stress, such countries tend to be more market-based than those without this tradition. To the extent that corruption reflects poor enforcement practices of legal codes, countries with poorly operating legal systems tend to have less well-developed financial markets.⁴⁶

La Porta *et al.* (1998) have classified legal traditions into four major groups: English Common Law, French Civil Law, German Civil Law, and Scandinavian Civil Law and have suggested that the origin of legal system affects the development of a domestic capital market and the degree of sophistication with respect to the accounting system. They stress that Common Law is more conducive to market-based financial systems than other legal systems, since it emphasizes the rights of investors and minority shareholders and the importance of enforcement with beneficial implications for securities market development (La Porta *et al.*, 1997). Levine (1998 and 1999) has pointed out that legal systems that stress investors' rights in debt contracts tend to generate beneficial repercussions for financial intermediary development (Levine, 1998 and 1999). In contrast, countries with a French legal tradition tend to have comparatively poor accounting standards and inefficient contract enforcement systems and suffer from higher levels of corruption with negative repercussions for financial sector performance (La Porta *et al.*, 1998). Furthermore, countries with a German legal foundation rarely stress the rights of investors compared with other countries and instead stress creditor rights.⁴⁷

While these studies illustrates interesting points, this paper stresses that it may be desirable to carefully examine how firms' choices or liability mix over bank loans and bond finance are associated with three factors: (1) extent of severity of information asymmetry between ultimate creditors and ultimate borrowers; (2) stages of economic development; and (3) the degree of sophistication with respect to the informational, legal and judiciary infrastructures—instead of arguing how different types of legal traditions have unilaterally affected the stage of financial market development and economic growth.

The above studies suggest that causality runs dominantly from legal systems to economic development. However, causality can also run from an opposite direction since the stage of economic development is often associated with lack of eligible issuers and

⁴⁶ Using the data of equity markets as proxy for market-related financial institutions, Demirguc-Kunt and Levine (1999) have demonstrated that countries with market-based financial systems are much more likely to have a Common Law origin than countries with bank-based system. They have also shown that countries with underdeveloped financial markets are much more likely to have low levels of contract enforcement, by indicating the existence of a stronger negative connection between an index of enforcement and degree of overall financial sector development after controlling GDP per capita. Furthermore, it was found that countries with underdeveloped financial systems are much more likely to have high levels of corruption in government.

⁴⁷ According to the legal traditions, India, Pakistan, Hong Kong, Malaysia, Singapore, and Thailand adopted the British-origin legal system. Japan, the Republic of Korea, and Taipei, China adopted the German-origin legal system. Philippines introduced the Spanish-origin system while Indonesia established the French-origin system (Chan-Lee and Anh, 2000.)

institutional and individual investors. Furthermore, financial market development is affected by the development stages of informational, legal, and judiciary infrastructures. The prevalence of unenforceable contracts, unreliable rule of law, and lack of formal rules make it difficult to develop sound and viable financial markets. Weak enforcement of contracts and the proliferation of corruption and cronyism are commonly observed in many developing countries regardless of the types of legal traditions and often constitute deterrents to developing the sound banking system as well as the viable corporate bond market. This argument can be supported by the fact that financial markets in the United States, France and Germany are advanced and developed to a relatively similar scale regardless of different legal systems.

Factors affecting firms' choice of financing—the extent of information asymmetry, the existence of developed institutional and individual investors with good appetite for diversified asset portfolio, and the development of a stringent contractual, legal and court system—are closely associated with the stages of economic development (Table 16). Also, the fact that many developing countries are at an early stage of the process toward mature informational, legal, and judiciary infrastructures may explain why bank finance has become the dominant form of corporate finance in developing countries (Rajan and Zingales, 1998a).

Bankruptcy Laws and Debt Restructuring

The establishment of bankruptcy laws is necessary particularly for corporate bonds, since non-government bonds may default. Such laws should clearly define the limit of public investors' legal ability to force bankrupt issuers to repay their obligations and the procedures for going to that limit (Endo, 2000). As a result, public investors are able to rationally assess the risk of investing in bonds and the likelihood of a partial restoration in cash or securities with little delay.

Furthermore, it should be noted that debt restructuring is more difficult for corporate bonds than for bank loans. This is because public investors in the corporate bond market are dispersed and diversified and thus, they may have little power to influence management of issuers in which they have invested. Decentralized public investors make it difficult to coordinate among themselves in restructuring debt contracts or negotiating over default on bonds, since individual investors have a tendency to free-ride. As a result, issuers may indulge themselves since such behavior is unlikely to trigger intervention by investors. To avoid such problems, it may be important to include (1) collective representation of creditors; (2) majority action to alter the payment terms of the contract; and (3) sharing of payments among creditors.⁴⁸ The collective representation clause is expected to advance debt restructuring more quickly and smoothly. The majority action clause aims to facilitate debtholders' decision-making and to accelerate the process of debt restructuring. The sharing clause may discourage dissident creditors from engaging in disruptive action, such as pursuing litigation or preferential settlements, and thereby promote an orderly workout.

⁴⁸ The collective representation clause provides mechanisms for coordinating action among holders of a bond issue, facilitating coordination and communication between holders of bonds and sovereign debtors and also facilitating communication between holders of bonds and other creditors. The majority action clause allows a qualified majority of creditors to alter the payment terms of a debt contract without the unanimous consent of debt holders. The sharing clause encourages creditors to agree to share proportionally with all other creditors payments received from debtors, including proceeds of set-offs, litigation and other preferential payments.

The importance of this approach has been recognized in recent years especially in the context of sovereign bonds when the likelihood of default on them has risen in some developing countries. It is true that adequate bankruptcy laws with efficient enforcement mechanisms invalidate such a modification in the case of corporate bond contracts, while the modification is always necessary for sovereign bonds in the absence of bankruptcy laws. However, the private sector debt restructuring process has not produced satisfactory outcomes so far in Asian countries in spite of the adoption of such laws and legal systems. Thus, this approach should be viewed and seriously considered as a supplement to the bankruptcy laws even in the case of corporate bonds.

Information Service Professions⁴⁹

While the rules for accounting, auditing, and disclosure as well as securities and bankruptcy laws are important, the more difficult task is to develop institutions—especially reputable accountants, investment banks and securities lawyers, credit rating agencies and other information producing agencies, and courts—that can enforce and implement the rules and laws. Sophisticated professional accountants with adequate skills and experiences are needed to detect false and misleading information. A judicial system should be advanced enough to handle complex financial disclosure cases. Securities lawyers should be sophisticated enough to ensure that a company's documents comply with disclosure requirements. The process of developing institutions cannot be carried out quickly. Even in the United States, this process has taken a long time and is still continuing.

Investment banks should be competent enough to investigate the issuers of corporate securities they underwrite. Investment banks play a crucial role as market intermediaries in the bond market to standardize and disseminate information about issuing firms. Their role is to design the terms of conditions of corporate bonds in such a way that ultimate public investors can purchase newly issued bonds with confidence, prepare prospectus of the issuing firms, and to promote the sale of the issues.

Developing the corporate bond market also requires rating agencies, which would assist public investors by assigning firms and new issues a grade according to a predetermined and well-known scale (Hakansson, 1998). Their reports provide a clear objective basis for determining the fair interest rate for a given bond issue. Thus, rating agencies are a key ingredient for the healthy functioning of the corporate bond market (Endo, 2000).

Credit rating agencies aim to measure relative risk of rated bonds and provide objective and independent opinions on them by evaluating issuers' ability and willingness to

⁴⁹ The corporate bond market may stimulate the acquisition and dissemination processes of information about issuers. While Stigliz (1985, 1993) has stressed free-rider problems in collecting information and evaluating firms' performance under a market-based economy, such problems do not necessarily occur. This is because if investment banks emerge, they may find it profitable to obtain underwriting fees and thus spend financial resources in researching issuing firms and getting information. This kind of incentive strengthens as the size of the market becomes larger and more liquid (Kyle [1984] and Holmstrom and Tirole [1993]). As a result of these financial intermediaries, a wider class of investors may be attracted owing to the existence of more transferable and widespread information. Also, investors are now able to make their own investment decisions and assess the cost of investing in firms with public information.

make full and timely payments of principal and interest over the lifetime of the rated bonds. These agencies apply a lower rating when issuers are viewed to have higher credit risk. The rating system is conducive to the efficient allocation of financial resources and affords bond issuers an incentive to make financial improvements. The system also encourages greater transparency, increases information flows, and augments the quality and quantity of information on issuers.

Credit rating agencies should be required to make public their rating methodology and sources of data, to publish individual ratings and their rationales in a timely manner, and to disclaim any liabilities arising from ratings (Endo, 2000). In addition, they should be subject to regular audits and publish the results. These measures would ensure the efficiency, competence, fairness and transparency of credit rating agencies. Also, Emery (1997) has suggested that the ownership of credit rating agencies should be broad-based to avoid possible conflicts of interest.

In recent years, the development of computer and communications technology has increased the availability of public information on borrowers. The development of technology enables public investors to have quick access to information such as creditworthiness of firms from credit rating agencies, which contribute to mitigating agency problems. The ability to communicate information to a wide spectrum of the public by improving information processing capacity is a necessary condition for democratizing the availability of information (Rajan, 1997). In the United States, for example, the proliferation of a variety of information producing bodies—rating agencies (such as Moody's and Standard & Poor's), data gatherers (such as Datastream and Lexis/Nexis) and data disseminators (such as Reuters and Bloomberg)—has contributed to the development of the corporate bond market.

Furthermore, an improvement in the information, legal, and judiciary infrastructures enables economies to become more transparent and thus attract more capital from investors without generating a sudden disruptive loss of market confidence, with its adverse impact on the stability of the financing system and economy. This is because even if public investors and issuers are equally informed, investors may need to pay potentially high costs associated with establishing their cases against poor management of issuers in court (Hart and Moore, 1989, 1994 and 1995). Without a legal mechanism to enforce issuers to pay the promised interest payments, therefore, public investors are unlikely to hold long-term bonds. Instead, these investors would show an increased preference toward short-term bonds (Fluck, 1998). While short-term bonds provide discipline for issuers, they may be more likely to default when realized cash flows are too low and they cannot make interest payments because of the short life of the bonds. In addition, the issuance of short-term bonds does not mitigate a maturity mismatch.

4.3. Factors Hindering Corporate Bond Market Development

After having analyzed the various benefits of the corporate bond market in comparison with bank finance and the required laws and judiciary infrastructures for the bond market development, this paper now asks why bond markets are underdeveloped in Asia, as pointed out in Section II. This subsection points out five factors that are viewed as having hindered the development of viable corporate bond markets in Asia.

Lack of Benchmark Bonds used for Pricing

Historically, the issuance of government bonds has been limited in Asia, reflecting a lack of financing need. Since the government bond market can provide benchmark risk-free rates at critical maturities, it is difficult to develop the viable corporate bond market without government bonds or highly qualified corporate bonds (that are issued regularly on a large scale with a wide range of maturities). As a result, there are inadequate benchmark yields that can be used as reference for fixing new corporate issue terms. The absence of a risk-free term structure of interest rates makes it difficult to price credit risks by comparing with a risk-free asset (Herring and Chatusripitak, 2000).

Interest Rate Regulations and Captive Market

Some countries impose lower-than-market interest rates on government bonds in order to reduce the burden of interest rate payments. As a result, buyers of governments tend to hold bonds until maturity for fear of capital losses that might be incurred if they are sold in secondary markets. Such an interest rate policy discourages the development of the secondary market and benchmark interest rates become less reliable. In addition, some countries adopt such an interest rate policy on corporate bonds as well, as was the case of the Republic of Korea. This policy deterred the development of the corporate bond market in the country, despite a relatively good number of reputable and large enterprises that could be potential corporate bond issuers.

In addition, governments often require financial institutions to hold a large volume of government bonds for prudential reasons. As a result, financial institutions tend to purchase bonds up to the amount needed to comply with the regulations and hold them until maturity, resulting in an inactive secondary market. For example, government-sponsored pension funds (e.g., the Employee Provident Fund in Malaysia and Central Provident Fund in Singapore) absorb a large share of government securities as part of their reserve or liquid asset requirements. These regulations gave rise to captive markets for government bonds, thus discouraging investors' demand for corporate bonds and deterring the development of both primary and secondary corporate bond markets.

Taxes and Lengthy Administrative Process

Some countries impose stamp duties or taxes on bond transactions, which deter the development of liquid secondary markets. In the Philippines, for example, Emery (1997) has pointed out that the stamp tax has hindered bond trading in the secondary market. Taipei, China also imposes a securities transaction tax, contributing to the thinness of the secondary market.

Regulatory hurdles such as time consuming and complicated issuing processes discourage the issuance of corporate bonds. It is desirable to establish a single regulatory body that serves as a one-stop agency for the approval of bond issues. This agency should be self-funded to attract and retain qualified staff and, at the same time, to maintain independence from the government (Emery, 1997).

Limited Supply and Demand of Bonds

There is a limited supply of quality bond issues in Asia. This reflects in part the poor credit standing of issuing firms and a limited number of large, reputable firms. It also reflects that too strict eligibility criteria or a certain minimum issue size is being applied for the issuance and availability of relatively low-cost bond financing. This problem applies to a large number of Asian countries, the Republic of Korea being an exception. For example, Hamid (2000) has pointed out that the lack of supply of good quality securities may explain why the corporate bond market has been relatively underdeveloped in Malaysia, although there are institutional investors, such as the Employee Provident Fund, insurance companies and unit trusts, that are willing to invest in bonds (Table 16).

Furthermore, institutional investors are largely underdeveloped and not diversified reflecting low per capital income and a low level of asset accumulation. Also, many individual investors have preference to short-term liquid assets, such as deposits. These facts suggest that the number of potential investors in the corporate bond market is limited.

Inadequate Informational, Legal, and Judiciary Infrastructures

In Asia, many countries suffer from lack of real-time trading information. Since most bonds are traded in the OTC markets, precise and timely pricing information is not available. This makes it difficult for public investors and dealers to assess changes in market sentiment and conditions. Inadequate accounting, auditing, and disclosure requirements and their implementation also add to the deficiencies of the informational, legal, and judiciary infrastructures. Also, many bonds—including government bonds—are not issued regularly on a large scale and their interest payment arrangements differ substantially. In this sense, the issuing process of bonds is not standardized.

4.4. Policies to Develop Corporate Bond Markets

There are six policies that should be considered in Asia in order to develop corporate bond markets.

Removing Distortionary Regulations

Countries should make efforts to increase competition and develop an environment where market forces work in the corporate bond market. To this end, it is essential to remove or reduce government policies (e.g., interest rate policies, taxes, and liquidity requirements) that discourage active transactions of corporate bonds.

Developing the Government Bond Market

Developing the government bond market is crucial in order to provide a benchmark that would function as guidance in pricing corporate bond issues. The introduction of market-determined interest rates for government bonds is a crucial step in order to foster a viable corporate bond market. Emery (1997) has suggested that governments, or central banks, should establish a system of tender or auction of government bonds—similar to that in Hong Kong, China—that incorporates a sufficiently large group of authorized bond dealers

and a smaller group of market makers. The bond dealers should be completely free to bid whatever prices they choose while governments would provide an adequate supply of bonds regularly with a wide range of maturities. Market makers should be required to quote at any time and offer prices for the bonds but in return should be given access to funds to finance their inventory of bonds through Repo markets. In particular, providing adequate financing for market players is essential for a well-functioning bond market. The Repo market may promote bond market transactions by providing a relatively inexpensive source of funding for dealers' inventories.

Adopting a Market-Based Pricing System

In primary markets, a bid price auction may be appropriate to market new corporate bond issues when commercial banks are likely to be major buyers, as is the case for many Asian countries (Broker, 1993). A bid price auction allows each bidder or commercial bank to pay the price it bids and is suitable especially when bidders consist mostly of professional investors. Meanwhile, a uniform price auction is suitable when bidders consist largely of inexperienced investors. In this situation, household investors may meet demand for new issues by submitting non-competitive bids honored by the average bid price. While bidders should be completely free to bid prices, regulators should be cautious about the danger of collusion among bidders in determining issue terms in case that there are only few participating commercial banks.

If issuers are new-comers to corporate bond markets and are not clear whether the intended volume of bonds can be sold and at the same time banks are dominant financial institutions, it may be desirable to use a banking consortium approach. This approach is suitable for selling bonds at a fixed price during a relatively short public subscription period. Commercial banks perform this business either on a commission basis or with a firm placement (or underwriting) guarantee. The latter case refers to a situation where consortium member banks take up on their own books all bonds that they were unable to place in the market during the subscription period. In order to prevent consortia from charging excessive commissions, regulators should allow issuers to freely choose their lead managers, who in turn make a free choice of their consortium member banks.

To foster secondary markets, interest rates should be allowed to move freely, to reflect market conditions. There are essentially two ways to price bonds in secondary markets. The first method is the order match system based on an auction principle. Under this system, a distinction may be made further between a price fixing procedure according to which one price is established for each security during each trading session, and a procedure according to which two or more prices for a security are established during each trading session (Broker, 1993). In a low volume market, it may be desirable to establish one price per security in each trading session. In an initial stage when the volume of turnover is low, it is also desirable to collect buying and selling orders over several days before a price match could be established in order to generate a high concentration of orders.

The second approach is a market marker system based on a quotation principle. Under this system, a distinction may be made further between systems based on non-competing market makers of two-way markets in a relatively small number of designated securities, with each market dealing in different securities; and systems based on competing

multiple market makers with several market makers in the same securities. This approach is suitable for markets with high volumes of transactions.

Encouraging Market Players and Information-Generating Agencies

In order to promote the availability of information, governments may encourage information-generating agencies to proliferate through deregulation. Information generators consist of evaluators of credit risk of bonds, information collectors, and information disseminators. Such information promotes competition by disseminating information about firms to competitors. The promotion of timely, precise, and detailed information about firms' return streams and the quick dissemination of relevant news also make it easier for investors to make investment decisions, contributing to a rise in the volume of transactions and improving firms' access to the corporate bond market.

Increasing the Number of Public Investors and Market Intermediaries

One way to broaden the base of public investors is to establish a pension system or transform an existing pension system from a redistribution principle (the “Pays-As-You-Go” system) to a fully-funded system. Pension funds should be set up as separately incorporated entities, which could be made subject to special investment regulations.

In addition, countries should make efforts to encourage the development of a new type of market intermediary under a market-based economy by promoting deregulation. Evaluation of a complex security, a portfolio, or a strategy requires more than just knowing the facts about firms' balance sheets. It requires financial expertise that ordinary investors do not possess. Market intermediaries assume the role of advisers, bridging the gap between investors' lack of knowledge and expertise required to get the most out of sophisticated markets (Allen and Gale, 2000). Thus, market intermediaries play a role in allowing firms and investors to participate in capital markets and at the same time ensure that capital markets have enough depth to survive. In other words, capital markets and market intermediaries have a relationship that relies on each other. Without market intermediaries, information barriers to individual investors and the resultant high cost of information acquisition might prevent them from actively investing in the securities market. The presence of institutional investors whose funds are managed by professionals may help to mitigate the problems associated with the low information content of market signals.⁵⁰

Also, promotion of competition among market intermediaries is important in order to reduce transaction costs. In Asia, the trading of bonds rarely takes place at stock exchanges even though the bonds are often listed there. Most of the trading occurs (although the volume of transactions is still limited) at the OTC market because of the absence of brokers' commissions and fees, investor anonymity, the absence of minimum trading amounts and longer trading hours. Thus, improving exchanges through an increase in the number of issuers and market intermediaries as well as competition is important in order to promote more active transactions.

⁵⁰ Nevertheless, even in this case, agency problems may occur, since individual investors often delegate portfolio management to managers, who do not always optimize an investor's portfolio unless investors properly convey their preferences. Thus, informational problems for investors may not be small.

Improving the Clearing and Settlement System

Countries should improve their clearing and settlement system to prevent systemic risk and improve the soundness and safety of the financial system. The International Society of Securities Administrators (ISSA) and the Group of Thirty issued standards that have been agreed by most countries with developed securities markets to be implemented within a few years. Their recommendations include the establishment of a centralized depository system for securities operating on the book entry system and the adoption of a principle of delivery against payment in a checking and settlement process. The checking and settlement process should be executed on a multilateral basis rather than on a bilateral basis so that a central checking and settlement organization would function as the counterparty in each transaction and thus bilateral credit and counterparty risk could be reduced.⁵¹

5. Conclusions

After the Asian crisis, strong and increasingly prevalent views have emerged that banks are no more functional and that economic development should rely on capital markets. These views claim that an important source of the crisis was the heavy dependence of firms' investment on bank loans and that commercial banks did not function as properly as those observed in some advanced countries. These views conclude that policies should place less emphasis on bank loans and more on developing domestic corporate bond markets as alternative sources of debt financing.

This paper has examined whether the policy implications derived from these popular views are justifiable by examining the fundamental differences between bank loans and corporate bonds. The paper has stressed that firms' choices or liability mix of financial structure depend crucially on three factors: (1) extent of severity of information asymmetry between ultimate creditors and ultimate borrowers, (2) stages of economic development, reflected in a number of large, reputable firms and institutional and individual investors, and (3) development of the informational, legal, and judiciary infrastructures.

The first factor affecting firms' choices is associated with the problems of information asymmetry. The main difference between bank loans and bond finance lies in the approach each debt financing system takes to mitigate the problems of information asymmetry between ultimate borrowers and ultimate creditors (depositors in the case of the banking system and public investors in the case of the bond market). When the degree of information asymmetry is severe, financial markets often face "agency problems," in which creditors suffer lack of

⁵¹ There are several risks associated with securities trading. A replacement cost risk refers to the risk that a counterparty may default prior to settlement, denying the non-defaulting party an unrealized gain on the unsettled contract (BIS, 1992). A principal risk is that the seller of a security could deliver but not receive payment or that the buyer of a security could make payment but not receive delivery. A liquidity risk is defined as the risk that a counterparty will not settle an obligation for full value when due, but on some unspecified date thereafter. This includes the risk that the seller of a security that does not receive payment when due may have to borrow or liquidate assets to complete other payments and the risk that the buyer of the security does not receive delivery when due and may have to borrow the security in order to complete its own delivery obligation. A delivery versus payment system eliminates the principal risk (and contributes to the reduction of liquidity risk). However, it does not eliminate a replacement cost risk or a liquidity risk. Thus, regulators should also provide some protection against these risks, for example provision of access to central bank financing.

information about borrowers' preference toward risk, creditworthiness, return streams, investment opportunities, and their diligence. In these circumstances, essentially three sources of agency problems emerge: (a) adverse selection (which requires "ex-ante" monitoring), (b) moral hazard (which requires "interim" monitoring), and (c) liquidation problems (which require "ex-post" monitoring to distinguish between viable and nonviable firms during financial distress). As a result of these agency problems, economies may experience under-investment in good projects, poor performance of borrowers, and expensive liquidation costs. Nevertheless, it is difficult to solve such problems because information collecting and monitoring costs ("agency costs") are too high for individual creditors to meet.

In the presence of such information asymmetry, therefore, commercial banks attempt to mitigate agency problems by acting as market intermediaries and reducing the information asymmetry between borrowing firms and commercial banks—not between borrowing firms and depositors (ultimate creditors). Commercial banks achieve this by obtaining inside information from borrowing firms and carefully monitoring them via repeated transactions and the formation of "relationships." Commercial banks bear risks associated with lending to borrowing firms, since inside information obtained by commercial banks is highly idiosyncratic and firm-specific and, thus, not transferable through the market. For this reason, banks do not have to provide depositors with such inside information. Instead, depositors in general expect their commercial banks to provide banking services, liquidity, and, if possible, high interest rates on deposits. In addition, commercial banks generally take collateral and diversify loan portfolios to reduce credit risks.

In the case of the corporate bond market, on the other hand, the bond market attempts to mitigate agency problems by ensuring that public investors (ultimate creditors) get timely, credible information about issuing firms, since it is public investors who bear the risks associated with their investment decisions. Since public investors are numerous, diversified, and dispersed, information about issuing firms needs to be standardized and transferable so that individuals can easily grasp the characteristics of the firms based on coupon rates, risk premiums, and the length of maturity. In addition, investment banks play a crucial role as market intermediaries in bond markets and contribute to mitigating the problems of information asymmetry between issuing firms and public investors. They do so by designing the terms of conditions of corporate bonds in such a way that ultimate public investors can purchase newly issued bonds with confidence—through underwriting new issues, preparing issuing firms' prospectus, and promoting the sales of the issues. Since many investors are involved, the burden of risks can be spread among them and hence long-term finance for risky projects becomes possible.

These fundamental differences suggest that commercial banks tend to form long-term relationships with their borrowers, compared to bond issuers, who form short-term or less intimate relationships with their bondholders. Furthermore, banks loans are largely short-term at the initial period of corporate formation, because of (a) the need to monitor their borrowing firms through refinancing, (b) the highly variable nature of information about borrowing firms, and (c) individuals' preference for liquidity and short-term deposits. Moreover, bank loan contracts—those characterized as providing flexible, discretionary, and repetitive loans—are likely to be largely implicit, while bond contracts—providing standardized, inflexible loans—are explicit.

The second factor affecting the availability of bond finance as compared with bank

finance is closely associated with the stages of economic development. In developing countries whose incomes and the level of asset accumulation are low, there are (a) many individuals who prefer liquid and short-term bank deposits, (b) underdeveloped pension and insurance industries (and hence underdeveloped institutional investors), and (c) a large number of SMEs. Bank loans are generally available not only for large firms but also for SMEs, whereas bond finance is available essentially for large, reputable firms. This suggests that the banking system is likely to dominate the financial system at the early stage of development because of a limited number of large, reputable firms that can issue bonds at reasonable costs. Also, a lack of demand for corporate bonds adds to the continuation of the dominant banking sector. Further, the extent of the information asymmetry between ultimate creditors and ultimate borrowing firms is generally high in developing countries since information about borrowing firms is largely non-transferable due to extremely firm-specific and idiosyncratic characteristics of the abundant SMEs.

On the other hand, bond markets can develop more easily in high-income developed countries where assets have accumulated to a substantial degree. This is because there are many individual investors who hold ample savings and thus demand corporate bonds to diversify their asset portfolios as well as developed institutional investors, such as insurance and pension industries. Further, there are relatively large numbers of sizable, reputable firms that can issue bonds regularly on a large scale. Alternatively, eligible firms, whose issue sizes do not meet a certain minimum level, are likely to issue bonds from time to time with relatively large issues rather than issuing smaller amounts at short intervals. In addition, the extent of information asymmetry between ultimate creditors and ultimate borrowing firms can be low, because of the availability of transferable, standardized information on a large number of big, reputable firms and because of developed informational, legal, and judiciary infrastructures. Therefore, the corporate bond market can be more developed in advanced countries.

The third factor determining whether a firm resorts to corporate bonds or bank loans is closely associated with the differences in the informational, legal, and regulatory infrastructures. The main objective of the banking regulatory system is to limit excessive risk-taking by banks, thereby to contain systemic banking crises. To achieve this, regulators establish enforceable banking laws that define the scope and types of businesses allowed to commercial banks and set entry criteria. In addition, regulators impose prudential regulations on commercial banks—including capital adequate requirements; foreign currency exposure limits; limits on credit concentration; and accounting, auditing, and disclosure rules. Furthermore, the well-designed deposit insurance system is intended to limit the chances of a systemic banking crisis and protect depositors, while minimizing moral hazard problems.

On the other hand, the main objective of the securities regulatory system is to ensure public confidence in the bond market by promoting the availability of credible information about issuing firms to public investors. This can be achieved by adopting enforceable and stringent securities laws that require disclosure of reliable information; assure investors of debt repayments; penalize accountants, auditors, and investment banks for disseminating false information; and prohibit insider trading and market manipulations. Proper accounting, auditing, and disclosure rules should be imposed on issuing firms. In addition, risk-rating agencies and other information generating agencies are needed. Investor confidence is, thus, gained if the information is credible and public investors are protected by laws and a judiciary system that seriously penalizes issuers and underwriters for malpractices, through a strong enforcement mechanism.

On the other hand, commercial banks may survive in an environment where accounting, auditing, and disclosure requirements imposed on commercial banks are inadequate, as long as banks have appropriate incentives to process information and monitor their borrowers and provided that creditors' rights concerning commercial banks are explicitly defined and enforced. In such a case, commercial banks become delegated monitors on behalf of depositors (ultimate creditors) and other banks.

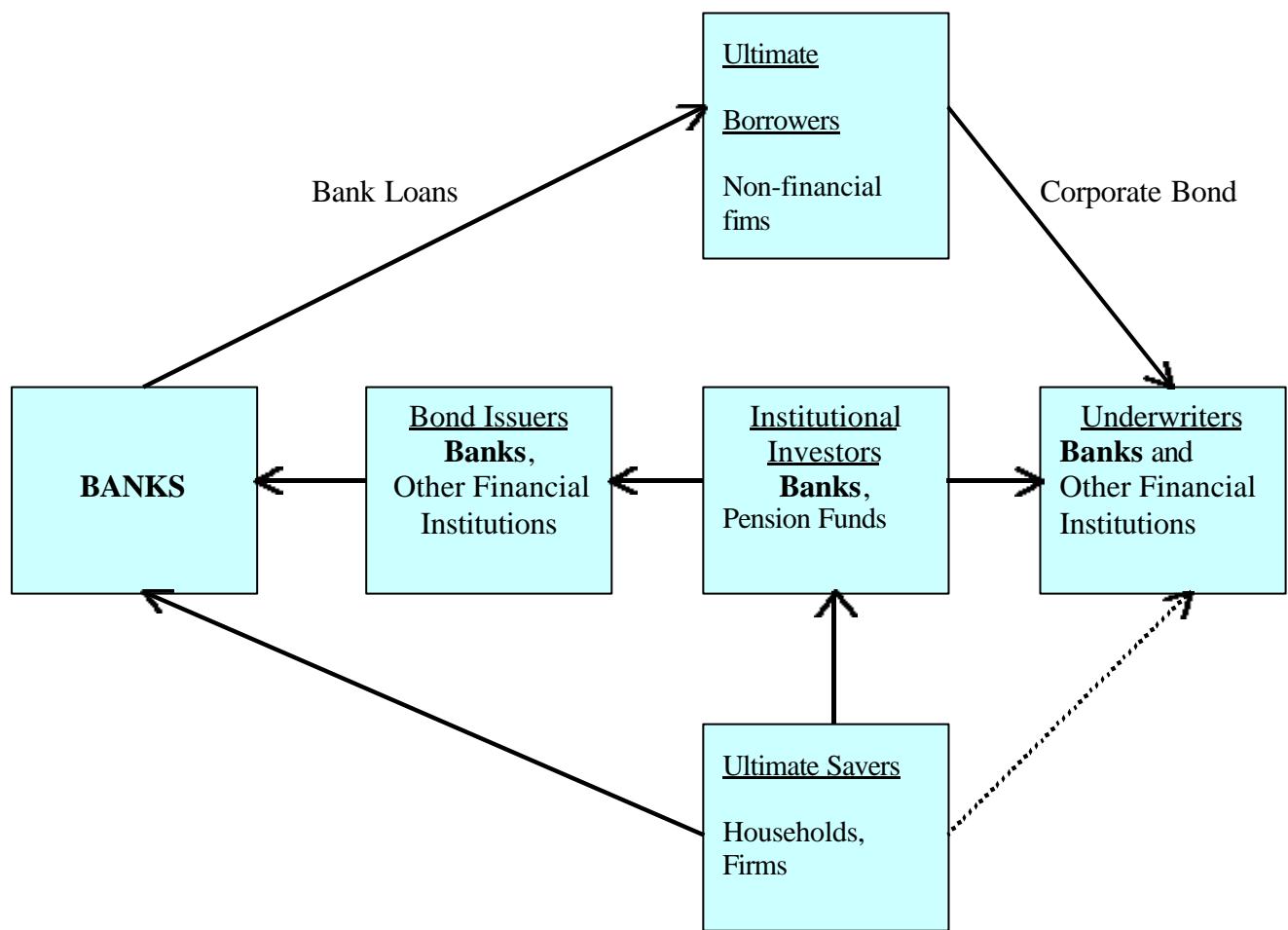
Based on these observations, this paper has concluded that the policy implications derived from the popular views outlined above may be too simplistic and unrealistic for Asia's developing countries, while the basic message is highly understandable. One serious weakness on these views lies in the fact that the banking system is expected to remain dominant in Asia and cannot be substituted by a sound capital market within a short time span.

According to the existing theories and empirical studies, domestic commercial banks in Asian countries could have engaged in sound long-term "relationships" with their borrowers—a phenomenon commonly observed in developed countries. However, commercial banks did not properly perform information collecting and monitoring functions in Asia. Strong government intervention directed a large portion of bank credit to the projects or industries selected by governments and bailed out virtually all financial institutions in distress regardless of their viability. Such government intervention undermined effective information processing and monitoring functions that are expected under the relationship-based banking system. Furthermore, banks are largely owned by family businesses under the family-controlled conglomerates and this ownership structure undermines banks' incentives to monitor borrowers. In addition, collateral-based financing without appropriate monitoring aggravated the crisis of the banking system in Asia.

Under such circumstances, banks were induced to engage in cronyism instead of developing a sound relationship-based banking system, resulting in aggravated double mismatches. Thus, a more proper understanding of the concept of "relationship-based" bank finance is a key step toward revitalizing the banking industry in Asia.

But a serious policy question arises: if banks remain dominant and sound capital markets remain underdeveloped in the medium term, what policies can mitigate double mismatches and resolve existing problems in Asia's financial system? This paper proposes that Asian countries should place priority on strengthening the banking system in the short- to medium-term, while at the same time initiating to develop a domestic corporate bond market. Given the dominance of commercial banking in Asia, the banking system and the corporate bond market could become complementary to each other (Chart 2). For instance, commercial banks are likely to play a major role as underwriters, investors, issuers, and guarantors of bonds while they continue to provide traditional banking services. In this dynamic process, commercial banks would gradually reduce the relative importance of traditional banking businesses and enter into new businesses such as underwriting, dealing, and investing in new types of assets. Thus, it is important to formulate a regulatory system that can cope with the new types of risk that would be encountered by commercial banks and to promote new risk-management skills.

Chart 2: Financial Market Structure in Asia



Appendices

Appendix I. Other Benefits of the Banking System

Appendix I describes three other benefits associated with the banking system. They are (1) smoothening of the payment system, (2) reduction in the fluctuations of the value of direct claims and (3) stable prices of bank deposits.

Smoothening of the Payment System

Commercial banks may be able to smoothen the payment system by pooling individual investors' funds and maintaining a certain amount of excess cash reserves as a cushion against uncertainty or the risk that commercial banks' assets would be forced to sell to obtain liquid assets at low prices (Rajan, 1996). The reason is that the average demand for cashing in by investors as a whole is more predictable since individual needs tend to be uniform over all investors, while individual investors' demands are highly uncertain and fluctuate substantially (Diamond, 1984). In other words, commercial banks can net parties that make deposits against parties that withdraw their deposits instead of transacting on behalf of each party involved; and this enables these banks to reduce precautionary cash reserves and the volume of transactions. For example, those who sell goods deposit cash while those who purchase them draw down their deposit. This phenomenon is referred to as "diversification across liquidity demands" or natural smoothing out of liquidity demand. This capacity is not possible for financial institutions that either solely make deposits or solely offer loans.

Reduction of Fluctuations in the Value of Direct Claims

Herring and Chatusripitak (2000) have pointed out that commercial banks have a relative advantage in reducing and hedging risk. Commercial banks may purchase a number of direct claims on different borrowers whose prospects are less than perfectly correlated. As a result, they are able to reduce fluctuations in the value of the portfolio of direct claims, given the expected return, relative to holdings of any one of the direct claims with the same expected return. Diversification reduces banks' net exposure to a variety of risks and thus reduces the cost of hedging.

Stable Prices of Bank Deposits

From the viewpoints of ultimate creditors, bank deposits are relatively stable assets in addition to providing a high degree of liquidity. In contrast, the prices of corporate bonds or equity are often volatile because they are prone to changes in market sentiment. Investors' and traders' demands are also subject to idiosyncratic liquidity shocks, which in turn are incorporated into the equilibrium asset (bond and equity) prices (Pagano, 1989). And these asset prices can be more volatile than the prices predicted by asset returns. If, however, liquidity shocks are independent across agents and the number of agents is large, the law of large numbers ensures that the aggregate effect would be small relative to the aggregate demand for assets and thus, the price of assets would be rendered less volatile. So asset price volatility attributable to liquidity shocks reduces and liquidity increases when there is a large number of traders active in the markets.

While this suggests a causality running from the depth of asset markets to the degree of volatility, the direction can be reversed (Allen and Gale, 2000). High volatile asset prices would discourage investors from holding those assets, deterring the development process of corporate bond markets. Allen and Gale (1994) have presented a model of multiple equilibria. If the market is expected to be illiquid and thus the asset price is highly volatile, only traders with a low liquidity preference will enter the market. If a liquid market is expected, investors with a high liquidity preference will participate in the market and hold a larger fraction of their wealth, making assets markets more liquid.

References

Allen, Franklin, 1990, "Markets for Information and the Origin of Financial Intermediation," *Journal of Financial Intermediation*, Vol. 1, pp.3-30.

Allen, Franklin, 1993, "Stock Markets and Resource Allocation," in C. Mayer and X. Vives (eds.), *Capital Markets and Financial Intermediation*, Cambridge University Press, Cambridge.

Allen, Franklin, 2000, "Financial Structure and Financial Crisis," mimeo.

Allen, Franklin, and Douglas Gale, 1994, "Liquidity Preference, Market Participation and Asset Price Volatility," *American Economic Review*, Vol. 84, pp.933-955.

Allen, Franklin, and Douglas Gale, 2000, *Comparing Financial Systems*, The MIT Press.

Altinkihc Oya, and Robert S. Hansen, 2000, "Are There Economies of Scale in Underwriting Fees? Evidence of Rising External Financing Costs," *Review of Financial Studies*, Vol. 13. No. 1, pp.191-218.

Anderson, Christopher W., and Anil K. Makhija, 1999, "Deregulation, Disintermediation, and Agency Costs of Debt: Evidence from Japan," *Journal of Financial Economics*, Vol. 51, pp. 309-339.

Aoki, Masahiko, 2000, Toward A Comparative Institutional Analysis, mimeo, July 30.

Aron, Janine, 2000, "Growth and Institutions: A Review of the Evidence," *World Bank Research Observer*, Vol. 15 , No.1, pp.99-135.

Asian Development Bank, 1999a, *Rising to the Challenge in Asia: A Study of Financial Markets; Republic of Korea*, Volume 7.

Asian Development Bank, 1999b, *Rising to the Challenge in Asia: A Study of Financial Markets; Thailand*, Volume 11.

Asian Policy Forum and Asian Development Bank Institute, 2000, Policy Recommendations for Preventing Another Capital Account Crisis.

Atje, Raymond, and Boyan Javanovic, 1992, *Stock Markets and Developments*, New York University.

Aylward, Anthony, 1996, "Trends in Venture Capital Finance in Developing Countries," IFC Discussion Paper No. 36, The World Bank.

Bank for International Settlements, 1992, "Delivery Versus Payment in Securities Settlement Systems," Report prepared by the Committee on Payment and Settlement Systems of the Central Banks of the Group of Ten countries.

Bank for International Settlements, 2001, "Consultative Document: Overview of the New Basel Capital Accord: Issued for Comment by 31 May 2001," January.

Barr, Graham, Jos Gerson, and Brian Kantor, 1995, "Shareholders as Agents and Principals: The Case for South Africa's Corporate Ownership Structure," *Journal of Applied Corporate Finance*, Vol.8, No. 1.

Beck, Thorsten, Ross Levine, and Norman Loayza, 1999, "Finance and the Sources of Growth," mimeo.

Benston, George, and George Kaufman, 1988, "Regulating Bank Safety and Performance," in *Restructuring Banking and Financial Services in America*, (ed.) by William S. Haaraf and Rose Marie Kushmeider, Washington: American Enterprise Institute.

Berens, James L., and Charles J. Cuny, 1995, "The Capital Structure Puzzle Revisited," *The Review of Financial Studies*, Vol. 8, No. 4, pp.1185-1208.

Berlin, Mitchell, 2000, "Why Don't Banks Take Stocks?," *Business Review*, May/June 2000, Federal Reserve Bank of Philadelphia, pp. 2-15.

Berlin, Mitchell, and Alexander W. Bulter, 1996, "Public Versus Private Debt: Confidentiality, Control, and Product Markets," Federal Reserve Bank of Philadelphia, Working Paper No. 96-17.

Berlin, Mitchell, and Loretta J. Mester, 1999, "Financial Contracts and the Legal Treatment of Informed Investors," Working Paper No. 99-8, Federal Reserve Bank of Philadelphia.

Berlin, Mitchell, and Jan Loeys, 1988, "Bond Covenants and Delegated Monitoring," *Journal of Finance*, Vol. 43, pp.397-412.

Berger, Allen N., and Gregory Udell, 1990, "Collateral, Loan Quality, and Bank Risk," *Journal of Monetary Economics*, Vol. 25, pp.21-42.

Besanko, David and Anjan Thakor, 1987, "Collateral and Rationing: Sorting Equilibria in Monopolistic and Competitive Credit Markets," *International Economic Review*, Vol. 28, pp.671-689.

Besanko, David and George Kanatas, 1993, "Credit Market Equilibrium with Bank Monitoring and Moral Hazard," *Review of Financial Studies*, Vol. 6, pp.213-232.

Bhattacharya, Sudipto, 1993, "Contemporary Banking Theory," *Journal of Financial Intermediation*, Vol. 3, pp.2-50.

Bradley, Michael Gregg, A. Jerell, and Han Kim, 1984, "On the Existence of an Optimal Capital Structure: Theory and Evidence," *Journal of Finance*, Vol. 39, pp.857-878.

Bolton, Patrick, and Xavier Freixas, 1997, "A Dilution Cost Approach to Financial Intermediation and Securities Markets," mimeo.

Bolton, Patrick, and David Sharfstein, 1996, "Optimal Debt Structure and the Number of Creditors," *Journal of Political Economy*, Vol. 104, pp.1-25.

Boot, Arnound, and Anjan V. Thakor, 1997, "Financial System Architecture," *The Review of Financial Studies*, Vol. 10, No.3, pp.693-733.

Borraez, Clemente, Del Valle Borraez, Mueen Batlay and Eriko Togo, 1998, "Overview of Fixed-Income Securities in Emerging Economies," mimeo, The World Bank.

Bossone, Biagio, 2000, "What Makes Banks Special? A Study on Banking, Finance, and Economic Development," mimeo., The World Bank.

Boyd, John H, and Edward C. Prescott, 1986, "Financial Intermediary Coalitions," *Journal of Economic Theory*, Vol. 38, pp.211-232.

Boyd, John H., and Bruce D. Smith, 1998, "The Evolution of Debt and Equity Markets in Economic Development," *Economic Theory*, Vol.12, pp.519-560.

Broker, Gunther, 1993, "Strategies for the Development of A Viable and Efficient National Bond Market," in *Emerging Bond Markets in the Dynamic Asian Economies*, Organization for Economic Co-Operation and Development.

Calomiris, Charles W., 1990, "Is Deposit Insurance Necessary? A Historical Perspective," *Journal of Economic History*, Vol. L., No.2.

Calomiris, Charles W., and Carlos Rammirez, 1996, "The Role of Financial Relationships in the History of American Corporate Finance," *Journal of Applied Corporate Finance*, Vol. 9, No.2, pp.52-74.

Calomiris, Charles W., Charles P. Himmelberg, and Paul Wachtel, 1994, "Commercial Paper, Corporate Finance, and the Business Cycles: A Microeconomic Perspectives," NBER Working Paper No. 48.

Calvo, Guillermo A. and Enrique G. Mendoza, 2000a, "Capital-Markets Crises and Economic Collapse in Emerging Markets: An Informational-Frictions Approach," *AEA Papers and Proceedings*, Vol. 90, No. 2, pp.59-64.

Calvo, Guillermo A. and Enrique G. Mendoza, 2000b, "Rational Contagion and the Globalization of Securities Markets," *Journal of International Economics*.

Campbell, Tim S., and William A. Kracaw, 1980, "Information Production, Market Signaling, and the Theory of Intermediation," *Journal of Finance*, Vol. 35, pp.863-882.

Cantillo, Miguel, and Julian Wright, 2000, "How Do Firms Choose Their Lenders?: An Empirical Investigation," *The Review of Financial Studies*, Vol. 13., No.1 pp.155-189.

Carey, Mark, 1995, "Some Evidence on the Nature of Information Problems in Debt Contracting and Financial Intermediation," mimeo.

Carey, Mark, Mitch Post, and Steven A. Sharpe, 1996, "Does Corporate Lending by Banks and Finance Companies Differ? Evidence on Specialization in Private Debt Contracting," mimeo, Federal Reserve Board.

Chan-Lee, James and Sanghoon Anh, 2000, "The Relation between the Information Quality of Financial Systems and Economic Development: an Indicators Approach for Asia," mimeo, the ADBI.

Chan, Yuk-Shee, 1983, "On the Positive Role of Financial Intermediaries in the Allocation of Venture Capital in a Market with Imperfect Information," *Journal of Finance*, Vol. 38, pp.1,543-1,569.

Chemmanur, Thomas J., and Paolo Fulgheri, 1994, "Reputation, Renegotiation, and the Choice between Bank Loans and Publicly Traded Debt," *The Review of Financial Studies*, Vol. 7, No.3 pp. 475-506.

Claessens, Stijn, Simeon Djankov, and Larry H. P. Lang, 1998, "East Asian Corporates: Growth, Financing and Risk over the Last Decade," mimeo., The World Bank.

Claessens, Stijn, Simeon Djankov, and Larry H.P. Lang, 1999a, "East Asian Corporations: Heroes or Villains?", World Bank Discussion Paper No. 409, The World Bank.

Claessens, Stijn, Simeon Djankov, and Larry H.P. Lang, 1999b, "Who Controls East Asian Corporations?", mimeo., The World Bank.

Claessens, Stijn, Simeon Djankov, Joseph P. H. Fan and Larry H.P. Lang, 1998, "Ownership Structure and Corporate Performance in East Asia," mimeo., The World Bank.

Claessens, Stijn, Simeon Djankov, Joseph P. H. Fan and Larry H.P. Lang, 1999, "Expropriation of Minority Shareholders: Evidence from East Asia," mimeo., The World Bank.

Cull, Robert, 1998, "The Effect of Deposit Insurance on Financial Depth: A Cross-Country Analysis," mimeo.

Dale, Richard, 1996, *Risk and Regulation in Global Securities Market*, John Wiley & Son: England.

Demirguc-Kunt, Asli, and Enrica Detragiache, 1997 "The Determinants of Banking Crises: Evidence from Industrial and Developing Countries," Policy Research Working Paper No.1929, The World Bank.

Demirguc-Kunt, Asli, and Ross Levine, 1993, "Stock Market Development and Financial Intermediary Growth: A Research Agenda," mimeo.

Demirguc-Kunt, Asli and Ross Levine, 1999, "Bank-Based and Market-Based Financial Systems: Cross-Country Comparisons," mimeo.

Diamond, Douglas W., 1984, "Financial Intermediation and Delegated Monitoring," *Review of Economic Studies*, Vol. 51, pp.393-414.

Diamond, Douglas, 1989, "Reputation Acquisition in Debt Markets," *Journal of Political Economy*, Vol. 97, pp.828-862.

Diamond, Douglas W., 1991, "Monitoring and Reputation: The Choice Between Bank Loans and Directly Placed Debt," *Journal of Political Economy*, Vol. 99., No.4., pp. 689-721.

Diamond, Douglas W., and Philip H. Dybvig, 1983, "Bank Runs, Deposit Insurance, and Liquidity," *Journal of Political Economy*, Vol. 91, pp.410-419.

Diamond, Douglas W., and Raghuram G. Rajan, 1999, "A Theory of Bank Capital," mimeo.

Diamond, Douglas W., and Raghuram G. Rajan, 2000, "Banks, Short-Term Debt and Financial Crisis: Theory, Policy Implications and Applications," mimeo.

Eaton, Jonathan, and Mark Gersovitz, 1981, "Debt with Potential Repudiation: Theoretical and Empirical Analysis," *Review of Economic Studies*, Vol. 48., pp.289-309.

Eichengreen, Barry, 1999, *Toward a New International Financial Architecture: A Practical Post-Asia Agenda*, Washington, DC: Institute for International Economics.

Emery, Robert F., 1997, *The Bond Markets of Developing East Asia*, Westview Press.

Endo, Tadashi, 2000, "Corporate Bond Markets Development," a paper presented at the Round Table on Capital Market Reforms in Asia, ADB Institute, 11-12 April.

Fama, Eugene, 1985, "What's Different about Banks?" *Journal of Monetary Economics*, Vol. 15, pp.29-36.

Fama, Eugene, and Merton H. Miller, 1972, *The Theory of Finance*, Holt, Rinehart, and Winston: New York.

Fauver, Larry, Joel Houston and Andy Naranjo, 1998, "Capital Market Development, Legal Systems, and the Value of Corporate Diversification: A Cross Country Analysis," mimeo.

Financial Stability Forum, 2000, "International Guidance on Deposit Insurance-A Consultative Process," June.

Fluck, Zsuzsanna, 1998 "Optimal Financial Contracting: Debt versus Outside Equity," *Review of Financial Studies*, Vol. 11, No. 2, pp.383-418.

Friend, Irwin, and Joel Hasbrouck, 1988, "Determinants of Capital Structure," in Andy Chen (ed.) *Research in Finance*, Vol. 7, JAI Press Inc., New York, pp.1-19.

Friend, Irwin, and Larry H. P. Lang, 1988, "An Empirical Test of the Impact of Managerial Self Interest on Corporate Capital Structure," *Journal of Finance*, Vol. 46, pp.271-281.

Furman, Jason and Joseph E. Stiglitz, 1998, "Economic Crises: Evidence and Insights from East Asia," *Brookings Papers on Economic Activity*, 1998:2 , pp.1-136.

Gale, Douglas, 1992, "Standard Securities," *Review of Economic Studies*, Vol. 59, pp.731-755.

Garcia, Gillian G. H., 1999, "Deposit Insurance: A Survey of Actual and Best Practices," IMF Working Paper WP/99/54.

Gart, Alan, 1993, *Regulation, Deregulation, Reregulation: the Future of the banking, Insurance, and Securities Industries*, John Wiley & Sons: the United States.

Gilson, Stuart, Kose John and Larry Lang, 1990, "Troubled Debt Restructurings: An Empirical Study of Private Reorganization of Firms in Default," *Journal of Financial Economics*, Vol. 27, pp.315-353.

Glen, Jack, and Brian Pinto, 1994, "Debt or Equity? How Firms in Developing Countries Choose," International Finance Corporation Discussion Paper No. 22.

Gorton, Gary, and James Khan, 2000, "The Design of Bank Loan Contracts," *The Review of Financial Studies*, Vol. 13, No.2, pp.331-364.

Gorton, Gary, and Frank A. Schmid, 2000, "Universal Banking and the Performance of German Firms," *Journal of Financial Economics*, Vol. 58, pp.29-80.

Hakansson, Nils H., 1998, "The Role of a Corporate Bond Market in an Economy—and in Avoiding Crises," mimeo.

Hamid, Norashikin Abdul, 2000, *Guide to the Malaysian Bond Market*, Rating Agency Malaysia Berhad.

Hamid, Norashikin Abdul, and Mahani Zainal Abidin, 2001, "Country Studies: Ringgit Bond Market: Development and Challenges," a paper presented at the Second Brainstorming Workshop on Developing Corporate Bond Markets in Asia, ADB Institute, 20 November.

Harris, Milton, and Autur Raviv, 1991, "The Theory of Capital Structure," *Journal of Finance*, Vol.XLVI, No.1, pp.297-355.

Hart, Oliver, and John Moore, 1989, "Default and Renegotiation: A Dynamic Model of Debt," mimeo.

Hart, Oliver, and John Moore, 1994, "A Theory of Debt Based on the Inalienability of Human Capital," *Quarterly Journal of Economics*, Vol. 109, pp.841-880.

Hart, Oliver, and John Moore, 1995, "Debt and Seniority: An Analysis of Hard Claims in Constraining Management," *American Economic Review*, Vol. 85, pp.567-585.

Hawkins, John, and Philip Turner, 1999, "Bank Restructuring in Practice: Overview," BIS

Policy Papers No.6, August, Bank for International Settlements.

Herring, Richard J., and Nathporn Chatusripitak, 2000, "The Case of the Missing Market: The Bond Market and Why it Matters for Financial Development," ADB Institute Working Paper No. 11, July.

Holmstrom, Bengt and Jean Tirole, 1993, "Market Liquidity and Performance Monitoring," *Journal of Political Economy*, Vol. 101, pp.678-709.

Holmstrom, Bengt, and Jean Tirole, 1997, "Financial Intermediation, Loanable Funds and the Real Sector," *Quarterly Journal of Economics*, Vol. 1,112, pp.663-692.

Honohan, Patrick, 1997, "Banking System Failures In Developing and Transition Countries: Diagnosis and Prediction," BIS Working Paper Series No.39, Bank for International Settlements.

Hoshi, Takeo, Anil Kashyap, and David Scharfstein, 1990, "The Role of Banks in Reducing the Costs of Financial Distress in Japan," *Journal of Financial Economics*, Vol. 27, pp.67-88.

Hubbard, R. Glenn, Kenneth N. Kuttner, and Darius N. Palia, 1999, "Are There "Bank Effects" in Borrowers' Costs of Funds?: Evidence from a Matched Sample of Borrowers and Banks," mimeo

James, Christopher, 1987, "Some Evidence on the Uniqueness of Bank Loans," *Journal of Financial Economics*, Vol. 19, pp.217-235.

James, Christopher, 1995, "When Do Banks Take Equity? An Analysis of Bank Loan Restructurings and the Role of Public Debt," *The Review of Financial Studies*, Vol. 8, pp.1,209-1,234.

Jantaraprapavech, Sureeporn, 2001, "The Bond Market in Thailand," paper presented at the Second Brainstorming Workshop on Developing Corporate Bond Market, ADB Institute, 20 November.

Jensen, Michael, 1989, "Eclipse of the Public Corporation," *Harvard Business Review*, pp.61-74.

Jensen, Michael, and Kevin J. Murphy, 1990, "Performance Pay and Top-Management Incentives," *Journal of Political Economy*, Vol. 98, No. 2, pp.225-264.

Jensen, Michael, and William Meckling, 1976, "Theory of the Firm: Managerial Behavior, Agency Costs and Capital Structure," *Journal of Financial Economics*, Vol. 3, pp.305-360.

Kane, Edward J., and Robert Hendershott, 1996, "The Federal Deposit Insurance Fund that Didn't Put a Bite on US Taxpayers," *Journal of Banking and Finance*, Vol. 10.

Khan, Haider A., 1999, "Corporate Governance of Family Businesses in Asia: What's Right and What's Wrong?" ADB Institute Working Paper No. 3.

Khanna, Arun, and Krishna Palepu, 1997, "Corporate Scope and Institutional Context: An Empirical Analysis of Diversified Indian Groups," Harvard Business School Working Paper.

Kim, Yun-Hwan, 2000, "Policy Agenda for Bond Market Development in Asia," a paper presented at the Round Table on Capital Market Reforms in Asia, ADB Institute, 11-12 April.

King, Robert G. and Ross Levine, 1993, "Finance and Growth: Schumpeter Might Be Right," *Quarterly Journal of Economics*, August, Vol. 108, No.3, pp. 713-737.

Kyle, Albert S., 1984, "Market Structure, Information, Futures Markets, and Price Formation," in *International Agricultural Trade: Advanced Readings in Price Formation, Market Structure, and Price Instability*, Gary G. Storey, Andrew Schmitz and Alexander H. Sarris (eds), Boulder, Co: Westview Press, pp.45-64.

Lamoreaux, Naomi, 1995, *Insider Lending: Banks, Personal Connections, and Economic Development in Industrial New England*, New York: Cambridge University Press.

La Porta, Rafael, Florencio, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1997, "The Legal Determinants of External Finance," *Journal of Finance*, Vol. 52.

La Porta, Rafael Florencio, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny, 1998, "Law and Finance," *Journal of Political Economy*, pp. 1113-1155.

Leland, Hayne, and David H. Pyle, 1977, "Information Asymmetries, Financial Structure and Financial Intermediaries," *Journal of Finance*, Vol. 32, pp.371-387.

Levine, Ross, 1998, "The Legal Environment, Banks and Long-Run Economic Growth," *Journal of Economic Literature*, Vol. 35, No. 2, pp.688-726

Levine, Ross, 1999, "Law, Finance, and Economic Growth," *Journal of Financial Intermediation*, online available at
<http://www.worldbank.org/research/growth/pdffiles/levin200.pdf>.

Levine, Ross, 2000, "Bank-Based or Market-Based Financial Systems: Which is Better?" mimeo.

Levine, Ross, and Sara Zervos, 1994, "Stock Markets and Banks: Reviving the Engines of Growth," mimeo.

Levine, Ross, and Sara Zervos, 1998, "Stock Markets, Banks, and Economic Growth," *American Economic Review*, Vol. 88, No.3, pp.537-557.

Livingston, Miles, 1999, *Bonds and Bond Derivatives*, Blackwell Publishers.

Lorenz, Tony, 1985, *Venture Capital Today*, Woodhead-Faulkner: NH, USA.

Lucas, Robert, Jr., 1972, "Expectations and the Neutrality of Money," *Journal of Economic Theory*, Vol. 4, pp.103-124.

Merton, Robert, C., and Zvi Bodie, 1995, "A Conceptual Framework for Analyzing the Financial Environment," in *The Global Financial System: A Functional Perspective*, Dwight B. Crane et. al. (eds.), Boston, MA: Harvard Business School Press, pp. 3-32.

Modigliani, Franco and Merton Miller, 1958, "The Cost of Capital, Corporation Finance, and the Theory of Investment," *American Economic Review*, June, pp.261-297.

Modigliani, Franco and Merton Miller, 1963, "Corporate Income Taxes and the Cost of Capital: A Correction," *American Economic Review*, Vol. 53.

Myers, Steward C., 1977, "Determinants of Corporate Borrowing," *Journal of Financial Economics*, Vol. 5, pp.147-175.

Myers, Steward C., 1984, "The Capital Structure Puzzle," *Journal of Finance*, Vol. 39, pp.575-592.

Myers, Steward C., and Nicholas S. Majluf, 1984, "Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have," *Journal of Financial Economics*, Vol. 13, No. 2, pp. 187-221.

OECD, 1993, Emerging Bond Markets in the Dynamic Asian Economies

Pagano, Marco, 1989, "Endogenous Market Thinness and Stock Price Volatility," *Review of Economic Studies*, Vol. 56, pp.269-288.

Pagano, Marco, Fabio Panetta, and Luigi Zingales, 1995, "Why Do Companies Go Public? An Empirical Analysis," NBER Working Paper No. W5367.

Peek, Joes and Eric Rosengren, 1998, "The International Transmission of Financial Shocks: The Case of Japan," *American Economic Review*, Vol. 87, pp.495-505.

Petersen, Mitchell A and Raghuram G. Rajan, 1994a, "The Effect of Credit Market Competition on Lending Relationships," mimeo.

Petersen, Mitchell A. and Raghuram G. Rajan, 1994b, "The Benefits of Lending Relationships; Evidence from Small Business Data," *Journal of Finance*, Vol. 49, pp.3-37.

Picker, Randall, 1992, "Security Interests, Misbehavior, and Common Pools," *University of Chicago Law Review*, Vol. 59.

Radner, Roy, 1979, "Rational Expectations Equilibrium: Generic Existence and the Information Revealed by Prices," *Econometrica*, Vol. 47, pp.655-678.

Rajan, Raghuram G., 1992, "Insiders and Outsiders: the Choice between Informed and Arm's-Length Debt," *Journal of Finance*, Vol. 47, 11.1367-1399.

Rajan, Raghuram G., 1996, "Is there a Future in Banking? Towards a New Theory of the Commercial Bank," mimeo.

Rajan, Raghuram G., 1997, "The Past and Future of Commercial Banking Viewed through an Incomplete Contract Lens," mimeo.

Rajan, Raghuram G., and Andrew Winton, 1994, "Covenants and Collateral as Incentives to Monitor," mimeo.

Rajan, Raghuram G., and Luigi Zingales, 1995, "What Do We Know about Capital Structure? Some Evidence from International Data," mimeo.

Rajan, Raghuram G., and Luigi Zingales, 1998a, "Financial Systems, Industrial Structure, and Growth," mimeo.

Rajan, Raghuram G. and Luigi Zingales, 1998b, "Which Capitalism? Lessons from the East Asian Crisis," *Journal of Applied Corporate Finance*, online available at <http://gsblgc.uchicago.edu/pspapers/whichcap.pdf>.

Rajan, Raghuram G. and Luigi Zingales, 1999, "Financial Development and Growth," *American Economic Review*, June, Vol. 88., No.3, pp.559-586..

Ramakrishnan, R., and A. Thakor, 1984, "Information Reliability and the Theory of Financial Intermediation," *Review of Economic Studies*, Vol. 51, pp.415-432.

Rhee, S. Ghon, 2000, "Regionalized Bond Markets: Are the Region's Markets Ready?," a paper presented at the First Brain Storming Workshop on Developing Corporate Bond Markets in Asia, ADB Institute, 11 September.

Rhee, S. Ghon, 2000, "Strengthening Regional Financial Architecture," a paper presented at the Asia Development Forum, "East Asia: From Crisis to Opportunity," 5-8 May, Singapore.

Rhee, S. Ghon, 2000, "Post-Crisis Capital Market Reforms in East Asian Economies," a paper prepared for the Seminar on International Finance, "Toward a Sound System of International Finance," organized by the ADB Institute, 9-13 October, Singapore.

Rogggenbuck, Harald E., 1994, "The German Banking System and its Impacts on Corporate Finance and Governance," Working Paper No. 94-13, Economic Development Institute of the World Bank.

Sachs, Jeffrey, 1998a, "Alternative Approaches to Financial Crises in Emerging Markets," in *Capital Flows and Financial Crises*, Miles Kahler (ed.), pp. 247-262.

Sachs, Jeffrey D. and Wing Thye Woo, 1999, "The Asian Financial Crisis: What Happened, and What is to be Done," mimeo.

Santos, Joao, A. C., 1998, "Commercial Banks in the Securities Business: A Review,"

Working Papers No. 56, Bank for International Settlement.

Scharfstein, David, 1988, "The Disciplinary Role of Takeovers," *Review of Economic Studies*, Vol. 55, No. 2, pp.185-199.

Schmukler, Sergio, and Esteban Vesperoni, 1999, "Globalization and Firms' Financing Choices: Evidence from Emerging Economies," mimeo., The World Bank.

Scott, Hal S. and Philip A. Wellons (ed.), 1996, *Financing Capital Market Intermediaries in East and Southeast Asia*, Kluwer Law International.

Sharpe, Steven A., 1990, "Asymmetric Information, Bank Lending and Implicit Contracts: A Stylized Model of Customer Relationships," *Journal of Finance*, Vol. 45, pp.1,069-1,087.

Sheard, Paul, 1989, "The Main Bank System and Corporate Monitoring and Control in Japan," *Journal of Economic Behavior and Organization*, Vol. 11, pp.399-422.

Shidiq, Akhmad Rizal, and Urip Suprodjo, 2001, "Country Studies: the Development of Indonesia Corporate Bonds Market," a paper presented at the Second Brainstorming Workshop on Developing Corporate Bond Markets in Asia, ADB Institute, 20 November.

Shin, Inseok, 2001, "The Korean Bond Market," a paper presented at the Second Brainstorming Workshop on Developing Corporate Bond Markets in Asia, the ADB Institute, 20 November.

Sim, Yeo Lian, 2000, "Country Note, Singapore," a paper presented at the Round Table on Capital Market Reforms in Asia, ADB Institute, 11-12 April.

Shirazi, Javad K., 1998, "The East Asian Crisis: Origins, Policy Challenges, and Prospects," Featured Presentation at the National Bureau of Asian Research and the Strategic Studies Institute's Conference "East Asian in Crisis," Seattle, June 10.

Sirri, Erik R., and Peter Tufano, 1995, "The Economics of Pooling," in *The Global Financial System: A Functional Approach*, Dwight B. Crane et. al. (eds.), Boston, MA: Harvard Business School Press, pp.81-128.

Stein, Jeremy C., 1988, "Takeover Threats and Managerial Myopia," *Journal of Political Economy*, Vol. 96, No. 1, pp.61-80.

Stigler, George, J., 1967, "Imperfections in the Capital Market," *Journal of Political Economy*, Vol. 96, No.1, pp.61-80

Stiglitz, Joseph, 1985, "Credit Markets and the Control of Capital," *Journal of Money, Credit and Banking*, Vol. 17, No. 2, pp.133-152.

Stiglitz, Joseph, 1993, "The Role of The State in Financial Markets," Proceedings of the World Bank Annual Conference on Development Economics, The World Bank, pp.19-52.

Stigliz, Joseph, 2000, "The Contributions of the Economics of Information to Twentieth Century Economics," *Quarterly Journal of Economics*, November, pp.1441-1478.

Stigliz, Joseph, and Andrew Weiss, 1981, "Credit Rationing in Market with Imperfect Information," *American Economic Review*, Vol. LXXI, pp.393-410.

Stone, Mark, 2000, "The Corporate Sector Dynamics of Systemic Financial Crises," IMF Working Paper WP/00/114.

Stulz, Rene M.2000, "Does Financial Structure Matter for Economic Growth? A Corporate Finance Perspective," mimeo., Ohio State University.

Stulz, Rene, and Herbert Johnson, 1985, "An Analysis of Secured Debt," *Journal of Financial Economics*, Vol. 14, pp.501-521.

Summers, Lawrence H., 2000, "International Financial Crises: Cases, Prevention, and Cures," AEA Papers and Proceedings, Vol. 90, No.2, pp.1-16.

Takagi, Shinji, 2000, "Capital Market Development in East Asia: Analytical Issues and Policy Implications," the ADB Institute.

Titman, S., and R. Wessels, 1988, "The Determinants of Capital Structure Choice," *Journal of Finance*, Vol. 43, pp.1-19.

Turner, Philip, 1999, "Can Bank Regulation Be Used to Prevent Systemic Financial Failure During Periods of Macroeconomic Stress?," a paper presented for the joint ADBI/JFST Seminar, "High-level Dialogue on Banking Regulation and Macroeconomic Management: Moving from Crisis Management to Crisis Prevention, June 30.

Weinstein, David, and Yishay Yafeh, 1998, "On the Costs of a Bank Centered Financial System: Evidence from the Changing Main Bank Relations in Japan," *Journal of Finance*, Vol. 53, pp. 635-672.

Williamson, Stephen D., 1986, "Costly Monitoring, Financial Intermediation, and Equilibrium Credit Rationing," *Journal of Monetary Economics*, Vol. 18, pp.159-179.

Williamson, John, 2000, "Development of the Financial System in Post-Crisis Asia," ADB Institute Working Paper No. 8.

World Bank, 1995, *The Emerging Asian Bond Market*.

Yoshitomi, Masaru, and Kenichi Ohno, 1999, "Capital Account Crisis and Credit Contraction," ADB Institute Working Paper No. 2.

Yoshitomi, Masaru and Sayuri Shirai, 2000, Technical Background Paper for Policy Recommendations for Preventing Another Capital Account Crisis, ADB Institute.

Zingales, Luigi, 2000, "In Search of New Foundations," NBER Working Paper Series No. W7706.

WORKING PAPER SERIES

- ***The Basic Characteristics of Skills and Organizational Capabilities in the Indian Software Industry***
February 2001 Code: 13-2001 by Ted Tschang
- ***Do Foreign Companies Conduct R&D in Developing Countries?
A New Approach to Analyzing the Level of R&D, with an Analysis of Singapore***
March 2001 Code: 14-2001 by Alice H. Amsden, Ted Tschang and Akira Goto
- ***Designing a Financial Market Structure in Post-Crisis Asia
-How to Develop Corporate Bond Markets-***
March 27, 2001 Code: 15-2001 by Dr. Masaru Yoshitomi and Dr. Sayuri Shirai

EXECUTIVE SUMMARY SERIES

- ***Pacific Public Management Executive Program (PPMEP)
Module 2: Managing Continuous Quality Improvement***
(No. S31/01)
- ***Poverty Reduction Issues***
(No. S32/01)
- ***Millennium Tax Conference***
(No. S33/01)
- ***Public-Private Partnerships in Health***
(No. S34/01)
- ***Skill Development for Industry***
(No. S35/01)
- ***High-Level Dialogue on Banking Regulation and Financial Market Development:
New Issues in the Post-Crisis Recovery Phase***
(No. S36/01)
- ***Banking Sector Reform***
(No. S37/01)

HOW TO CONTACT US?

Asian Development Bank Institute
Kasumigaseki Building 8F
3-2-5 Kasumigaseki, Chiyoda-ku,
Tokyo 100-6008 Japan

Tel: +81 (03) 3593-5500
Fax: +81 (03) 3593-5571
E-mail: publications@adbi.org
www.adbi.org

*Papers are also available online at the ADBI Internet site:
<http://www.adbi.org/publications/publicat.htm>*