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## **BOND MARKETS IN THE PACIFIC RIM: DEVELOPMENT, MARKET STRUCTURE, AND RELEVANT ISSUES OF FIXED-INCOME CAPITAL MARKETS**

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**Bond Markets in the Pacific Rim:  
Development, Market Structure and Relevant Issues  
in Fixed-income Capital Markets**

**Report to**

**Economic and Social Commission for Asia and the Pacific (ESCAP)**

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## **Executive Summary**

1. This paper reviews market development of fixed-income securities in the Pacific Rim economies following the onset of the Asian currency crisis 1997 through to the end of 2000. It provides a background for comparing the market structure in each of the respective capital markets within the region, and discusses the issues pertinent to capital market development.
2. In 2000, a policy paper was presented to the United Nation's Economic and Social Commission for Asia and the Pacific (ESCAP) as background to discussion on the Asia-Pacific capital markets in the high-level consultative meeting in Jakarta, Indonesia. This paper serves as an update of the Jakarta policy paper, and contains some pertinent issues concerning the development of bond markets in Asia Pacific economies in the future.
3. Through the period from 1997 to 2000, most of the Asia-Pacific economies have experienced a significant recovery from the currency crisis. In general, the rebound in local stock markets is consistent with overall economic recovery. However, the strong stock market performance is most significant for a handful of large corporations that maintain strong profitability and healthy balance sheets. Listed companies with small capitalization appear still to be suffering from stringent constraints in their ability to raise funds.
4. The limited scope of economic recovery is probably attributable to the region's poor financial infrastructure, lack of information transparency, and weak corporate governance for listed companies. While general economic conditions improve, many smaller companies are not enjoying an upturn in their business and profitability because of limitations in their financing ability.
5. The heavy reliance in external (foreign exchange) funding in some countries as a principal means of financing has also resulted in dampened economic development. Confidence from international investors remains weak. Furthermore, the lack of local capital markets with sufficient depth means that significant movements of capital into or out of certain countries will lead to distortions in the cost of capital, and this will affect long-term economic development.
6. Due to the heavy reliance on foreign exchange debts and the lack of transparency in their corporate sectors, Asian capital markets, and in particular debt bond markets, generally display significant systemic risk in the form of country risk. During the currency crisis, foreign funds fled from these markets and most corporations in these high systemic risk economies suffered from a lack of funding for their investment projects. Hence, consistent and effective regulation and transparency of disclosure are critical to the long-term development of active bond markets.

7. Another significant issue affecting economic recovery and the development of debt markets in the region is the problem of non-performing loans (NPLs). NPLs are generated and accumulated through lending to inefficient borrowing institutions and the significant decline in the value of collateral. This paper argues that possible policy options include structural reform, which can make use of the capital markets to speed up corporate restructure, and recapitalization of the banking sector. However, these measures have not been commonly adopted by Asia-Pacific economies.
8. There were wide fluctuations in securities prices during the last few years of the 20<sup>th</sup> century. Starting in 1995, technology related companies' stocks listed on the U.S. NASDAQ surged consistently and reached a peak in the first quarter of 2000. Subsequently, Internet stock prices declined significantly, and this decline led to a global decline in asset prices. The "Internet Bubble" meant that global uncertainties have increased from the level in the 1990s, and this factor applies strongly to the Asia-Pacific region.
9. There is also an imbalance in the institutional setup of financial markets in the region. In particular, corporations are traditionally dependent on bank financing as their major source of funds. Overall, debt markets in the Asia-Pacific are much smaller than equity markets.
10. In general, regional market operations and regulatory systems are fragmented. There is a need to build a consistent legal and regulatory framework, to improve investor protection, to encourage adequate disclosure of information, and to foster best practices of listed companies and financial intermediaries. Also, there is a need to further develop the trading and settlement mechanisms in terms of efficiency and effectiveness, so that the systematic risk of securities transactions is minimized.
11. The first step in the development process should be the promotion of a market infrastructure that effective bond pricing and enhancements to information disclosure of issuing firms encourages. Such measures include establishing a benchmark yield curve, encouraging high-quality issuers to issue bonds locally, and the establishment of credible credit agencies.
12. Despite the lack of infrastructure for active bond markets, this paper identifies positive factors for future bond market development. On the demand side, many Asian economies need long-term capital in both the government and the corporate sector. On the supply side, most Asian economies have high savings rate that could lead to a substantial supply of funds for the bond market. With the establishment of suitable institutional structures, there is significant potential for developing active bond markets in these economies.

## **A. Background and recent economic development**

### **A.1 General economic conditions**

1. Since the onset of the Asian currency crisis in 1997, economic indicators in the Asia-Pacific region have shown drastic changes, resulting in general in a strong rebound from the low levels caused by the crisis. Based on GDP growth figures, 1998 was the worst year, with Indonesia and Thailand suffering the most intense contractions in their economies (-13.7% and -8.0%, respectively). As at 2000, all economies in the region have returned to positive economic growth. Indonesia and Thailand report +2.0% and +2.5% GDP growth in 2000, respectively. Other Asia-Pacific economies show more positive growth rates.
2. The swing in economic activities can also be reflected by the performance of the local stock markets in these economies. Table 1 provide statistics of the size of the respective stock markets, and Table 2 shows the level of stock market trading activities in these markets. In general, almost all of the markets in the region, including those that were most severely affected by the Asian currency crisis, recovered to levels that exceed their respective levels in 1990.
3. Table 1 shows that in several Asian economies the stock market has played a significantly more important role in the economy. For example, the size of the Hong Kong Stock market as a percentage of the local GDP during the period 1990 through 2000 increased from 112% to 383%, showing a more than two-fold growth. The total stock market in China during the same period increased from 0.5% to 33%, showing a growth of more than 66 times than in 1990. Other countries with more significant stock market capitalization include Malaysia, New Zealand, the Philippines, Singapore, and Thailand. In general, the more active stock market provides an important source of capital for the economic development in these economies.

4. However, not all local markets received benefits from the economic recovery. For example, the relative sizes of the stock markets as a percentage of local GDP in Japan and Korea actually fell over the period 1999 to 2000. In the case of Japan, 1990 was the year that asset prices reached a peak, and was generally described as the end of the Japanese stock market bubble. The Japanese stock market has remained fairly weak since the decline that began in 1990. In the case of Korea, stock market recovery was very significant. However, since 1997, the stock market's volatility has been high as the Korean corporate environment undergoes a phase of consolidation and restructuring.
5. In addition, Table 2 shows that stock market trading activities declined in Thailand and Indonesia. As illustrated by the turnover ratio (i.e., the ratio of value of stocks trades versus the total capitalization of all stocks outstanding), stock trading in Thailand declined slightly from 92.6% in 1990 to 53.2% in 2000. The turnover ratio for Indonesia, on the other hand, dropped significantly from 75.8% in 1990 to 32.9% in 2000. Such a sharp decline is probably due to the withdrawal of international investment funds from Indonesia subsequent to the outbreak of the Asian currency crisis. As of 2000, political uncertainty in Indonesia remains high, and foreign funds have not returned to the country.

## A.2 Extent of economic recovery

6. Despite the recovery in the general economy, many corporations have not been able to enjoy its benefits. In particular, most Asian corporations have encountered difficulties raising funds. This is derived from three factors: (1) banks and other financial institutions have become more reluctant to approve new loans and/or rolling over existing credit lines; (2) alternative means of financing (e.g., structured financing and syndicated loans) have become almost unavailable; and (3) the weak performance of individually listed companies makes it difficult for them to raise funds through the capital market.

7. The difficulty in the financing process appears to be a manifestation of information asymmetry in Asian corporations. As a result of the Asian currency crisis, there is a general decline in borrowers' credit standing. Given the lack of credible information, lenders and investors tend to focus on corporations with a higher credit level. The corporations that are unable to prove their creditworthiness suffer from deterioration in funding sources. The more seriously affected firms are listed companies with small capitalization (which suffer from a lack of investor interest), and small and medium enterprises (which suffer from banks' reluctance to provide financing).

### A.3 Smaller economies in Asia

8. Tables 1 and 2 also shows that in Asia many countries have seen limited development in their capital markets, and that the relative sizes of the stock markets represent an insignificant share of the respective local economies. For example, Bangladesh had 134 listed companies in 1990 and 221 in 2001. Despite that the total market capitalization increased from \$ 321 million in 1990 to \$1,186 in 2000, the relative size of the Bangladesh stock market to the local GDP merely increased from 1.1% to 1.9%. Compared to other more developed economies, the stock market in Bangladesh represents an insignificant portion in the economy. Other countries with stock market capitalization less than 20% in 2000 include Iran (19.7), Kazakhstan (14.3%), Mongolia (3.5%), Nepal (8.4%), Pakistan (12.0%), the Russian Federation (18.0%), and Sri Lanka (9.9%).
9. It should be noted that the general market infrastructure in these underdeveloped economies is poor. As a result, local and foreign investors lack the confidence to holding securities trading in these markets, and that the lack of investor interest limits the potential of the local governments and regulatory bodies to invest in the respective capital market measures such as the legal framework, regulatory institutions, and other institutional setup. Hence, these markets suffer from a slow development over the 10-year period represented in Tables 1 and 2.

#### A.4 Credit Squeeze following the currency crisis

10. Tables 3 and 4 provide some highlight on the reduced credit to several Asian economies. Table 3 shows international bank lending to a sample of total developing countries (TD) compiled by the Bank of International Settlements, total Asia (TA) and a sample of selected countries affected by the currency crisis (TS) for the period December 1996 through June 2001. The countries in the select sample include Indonesia, Korea, Malaysia, Thailand, China, and Taiwan.
11. Table 3 computes two indicators as benchmarks for the availability of bank credit for Asian countries: (1) ratio of TA to TD as an indicator of overall credit availability in Asia, and (2) ratio of TS to TD as an indicator of credit availability to the select sample.
12. Table 3 reports that both TA/TD and TS/TD decline consistently after the outbreak of the currency crisis in 1997. In 1996, TA/TD was 53.0% and in June 2001 the indicator was 30.0%. TS/TD was 47% in 1996 and 24.7% in June 2001. These figures (along with the ratios in each sample period) illustrates several facts concerning credit availability: (1) the currency crisis brings a significant adverse effect on credit availability to Asian countries; (2) the credit squeeze occur as a general phenomenon in Asia, but are most pronounced for the selected countries; and (3) the credit squeeze came in an increasing magnitude displayed by the consistent decline in the ratios in each consecutive sample period, and is not alleviated even after the general economic recovery in Asia.
13. Table 3 also reports that short-term credit, a major source of bank credit prior to the currency crisis, has decreased in the post crisis period. In 1996, the percentage of loans 1 year or shorter was 63% in the selected countries and 61.5% in all Asian countries. As of June 2001, this ratio had declined to 47.6% in the select sample and 45.9% in the all-Asia sample. Again, the ratios show a consistent decline throughout the sample period.

14. Table 4 reports net private capital flows to emerging markets and Asia for the period 1992 through 2000. As seen from Table 4, the contributing factor of the fall in net private capital flows to Asian countries is the dramatic drop in net bank claims, which include syndicated bank lending and trade financing. This can be explained by the continuous cutback in international bank exposures to the Asian markets.
15. Also, it is observed that Asian countries have been experiencing a decline in net foreign direct investment since 1997. This decline is probably due to the gradual reduction in merger and acquisition activities and the lack of large-scale privatizations as are commonly occurring in Latin America. After the crisis, banking and corporate restructuring have undergone restructuring measures, and a significant amount of domestic bonds were issued to capitalize the banking sector and to purchase the non-performing loans. Besides, domestic banks and companies switch to domestic financing in an attempt to capture the relatively low interest rate. These two forces drive the net portfolio investment to grow rapidly after 1998.

## A.5 Financial infrastructure

16. Financial infrastructure refers to the environment in which financial transactions are carried out. It involves the legal and regulatory framework, financial institutions and trading mechanisms.
17. Important components of the financial infrastructure include the trading, clearing and settlement systems. The significance of an efficient and effective trading environment is that the system will enhance investor participation and reduce systematic risk such as the inability to complete a trade. These benefits will translate into higher liquidity levels and reduce capital costs for listed companies. Improvements in local stock markets will also stimulate local investors to hold stocks, thereby reducing their dependence on foreign capital.

18. An example is the introduction of a continuous net settlement (CNS) procedure. Such a system allows the clearing house to continually monitor the positions of its clearing members. In the case of Hong Kong, three separate clearing houses were in operation (one for the cash stock market and two for derivative markets in futures contracts and options) up to March 2000. During 2000, efforts were made to form a unified clearing and settlement system by merging the three clearing houses.
19. In time, the combining of the clearing houses in now segmented securities markets will improve operations and market efficiency. Examples of the benefits include the provision of consolidated margin requirements for the cash market (including stocks and bonds) and its derivative products (which would reduce hedging costs and promote better risk management of traders); the implementation of net money settlement procedures; and the provision for uniformity in technical trading requirements such as collateral accepted and underlying legal documents.
20. Advancements in information technology have provided a host of solutions to improving the securities trading process. An example of this kind of improvement is a straight through computerized trading system. Under such a system, investors can input their buy or sell orders from an access point (computer, mobile phone, or other devices). The orders are entered directly to the stock exchange's trading system via the securities broker's trading system. In this way the time needed to complete of the transaction and subsequent settlement is significantly shortened.
21. A real-time settlement system can also help reduce the participants' risk. For example, the stock exchange can monitor the status of its clearing members, and each clearing member can impose an in-house risk management system to reduce the company's risk.

22. The Central Moneymarkets Unit (CMU) established by the Hong Kong Monetary Authority (HKMA) can demonstrate the application of an improved infrastructure on bond markets. The CMU was set up in 1990 to provide computerized clearing and settlement for the Exchange Fund papers issued by the HKMA. This settlement structure was extended to other debt markets in 1993. At present, the CMU provides an international bond-trading platform that is linked to Euroclear, Cedel and other international trading platforms so that international investors can take advantage of the infrastructure to participate in the Hong Kong debt market.

#### A.6 Convertible bond markets

23. Another consideration is to develop debt financing by developing viable convertible bond (CB) markets in Asia. This helps the development of bond market by introducing convertible bonds which provide investors with an option to exchange their bonds for newly issued equity in the CB issuing company. The general belief is that this conversion option allows the issuing firm to borrow at a rate that is below the market interest rate. In exchange for the lower interest income, CB investors enjoy the upside potential if the issuing company performs well and its stock rises above the conversion price.

24. Finance theory suggests that CBs are suitable for high growth companies because they offer a solution to the information asymmetry problem between bondholders and shareholders. In essence, CB issue allows the issuing firm to take risk and invest in profitable investments (thus resolving the shareholders' agency problem) and at the same time provide adequate compensation for the bondholders (in the form of a potential upside in the CB investment). From this standpoint, a CB market appears to be suitable for Asian economies in which there are sufficient growth opportunities.

25. The development of Asian CB markets can be traced to Japanese warrant bonds in the 1980s and Korean CBs in the early 1990s. In general, these instruments allowed foreign investors to hold equity-like securities when the respective local markets

imposed restrictions on foreign stock holdings. However, when the Asian equity markets began to open up to foreign investors, CB-like instruments became less attractive.

26. In general, CBs are not popular among retail investors in Asia. On one hand, investors can hold equity directly. However, liquidity in the CB market is often low and investors are usually subject to a significant minimum transaction size. Furthermore, CBs are often traded over-the-counter and retail investors may find it difficult to access to pricing information.
27. To an investor, the CB serves as an indirect means of holding common stock in the issuing company. The upside of the CB investment lies in the fact that if the share price rises, the value of the bond, with the right to convert into common shares, will be worth more. On the other hand, the CB provides a "downside protection", since bondholders receive a steady interest income when the share price drops.
28. However, bondholders may not like to hold the CB should they prefer to hold the common stock directly. Under normal market conditions, trading in common shares is significantly more active than trades in CBs. Because the common stock has higher liquidity, investors find it easier and less costly to realize profits or limit losses by holding common shares rather than by holding CBs.
29. After the currency crisis, even institutional trading of CBs fell. The key issue was the lack of credit assessment in the region, rendering it difficult to find a fair price for the instrument.

## **B. Domestic debt markets: experience and future prospects**

### **B.1 General background**

30. Asian countries are characterized by under-developed debt markets. Traditionally, corporations rely on bank loans to finance their business activities. When the capital markets began to develop in the 1980s and the 1990s, development in the equity markets (through Initial Public Offerings and secondary market trading on local stock exchanges) became the principal type of capital market activity for local investors. Table 5 provides summary statistics of outstanding amounts of bank loans, government bonds, corporate bonds, and equity market capitalization as at December 1998. The table shows that with the exception of Korea, debt markets in the region are small as compared with the bank loan market and the equity market.
31. However, this heavy reliance on bank financing leads to a significant mismatch in the maturity structure of corporations' assets and liabilities. Since a significant number of regional corporations require funding for long-term investments (such as infrastructure projects), their dependence on short-term bank loans make many corporations, and regional economies as a whole, susceptible to economic swings.
32. Prior to the Asian currency crisis, financial institutions in the region actively raised foreign exchange debts and swapped these into local currency. Such activities provided a relatively low-cost source of funding for local financial institutions. However, the availability of external funding was drastically reduced, if not curtailed, when investor confidence in the region weakened during the currency crisis. The shortage of funding caused a chain-reaction effect that ultimately brought hardship on local economies and hindered economic development.
33. The lack of a high-quality investment market (such as a bond market) in many Asian countries means that local economies are prone to sudden and short-term changes in investor confidence. When confidence in a particular country dissipates, investors (local and foreign) do not possess a more secure and stable investment alternative to hold on to. Flight for quality leads to the withdrawal of funds from a given country or from the

region entirely. The effect of capital flight is especially significant in Asian economies because of the heavy reliance of financial institutions and corporations (such as infrastructure developers) on short-term foreign exchange debts. When foreign funds are withdrawn from a particular economy, banks and corporations are faced with real risks of insolvency even if their asset quality is healthy in the long run.

34. Thus, the presence of a high-quality bond market with sufficient market depth would likely enhance long-term economic development and significantly reduce the probability of future currency crises.
35. However, the current status of capital market development does not favor the development of debt markets. Factors leading to the slow development include poor financial infrastructure, the lack of benchmark bonds, fragmented capital markets, and the lack of competitive credit markets in many countries.

## B.2 Overview of debt market development

36. Table 6 provides summary information of the market value of listed bonds in nine Asian countries through to the end of 2000. The table shows that Japan has the most active bond market with a market value of US\$ 5.08 trillion, representing approximately 88% of the entire Asian bond market. Korea is the second largest market, with a market value of US\$ 336 billion, or approximately 6% of all Asian bonds outstanding. Singapore is the only other major Asian debt market with a market value of US\$ 219 billion; all other markets in publicly listed bonds have market value below US\$ 100 billion.
37. Table 6 shows that throughout the period from 1995 to 1999, the market sizes of the Asian bond markets have been growing with a fairly steady pace. Japan, Korea, Singapore and Taiwan saw growth of 35%, 99%, 32%, and 38% respectively. However, the growth rate in 2000 is significantly weaker than that experienced in 1999.

Korea and Singapore have seen their market sizes increase marginally from 1999 levels. Hong Kong, Indonesia, Japan and Malaysia suffered a decline in market value. Only Taiwan showed a fairly healthy growth of approximately 9% compared with the 1999 level.

38. It should be noted, however, that in many economies bonds are not publicly traded but rather traded over-the-counter among investors comprising banks and financial institutions. Because of this, it is difficult to obtain reliable information on the actual size of the bond market.

### B.3 Efforts to promote Asian bond markets

39. Asian countries and economies have made efforts recently to promote the development of local debt markets. Following the IMF bailout of Korea in 1997, a series of steps was taken to reform Korea's capital markets. Such steps included the promotion of a more well-developed secondary market for bonds, including reform of the bond issuing procedure, introduction of new debt market products (such as repurchase agreements), and reorganization of the secondary bond market.
40. There were also efforts to promote participation from retail investors. In September 1999 the Hong Kong Monetary Authority (the *de facto* central bank of Hong Kong) and the Stock Exchange of Hong Kong arranged to list Exchange Fund Notes (similar to Treasury notes issued by the U.S. Treasury) on the Stock Exchange of Hong Kong. Under this arrangement, the board lot size was reduced to a face value of HK\$ 50,000 (US\$ 6,410), to promote retail investor participation.
41. The case of Philippine Treasury securities is another example of the promotion of a local high-quality bond market with sufficient market depth. Starting in 1995, the Philippine Bureau of the Treasury began to introduce improvements in market infrastructure for a bond market with a view to promoting the remote market for

Treasury securities. Measures included the launch of an electronic auction system in 1995 and the introduction of scripless government securities in 1997. These improvements paved the way for an efficient and transparent trading system for Treasury securities.

42. In 1998 the Philippine Treasury introduced the Small Investor Program (SIP) to encourage Philippine citizens to hold (and trade) local government securities. In November 1998, the denomination of the Treasury bills (short-term government securities with maturities within one year) was reduced. As a result, the basic trade size of these securities was reduced from Peso 10 million to the range between Peso 25,000 to Peso 100,000. In June 1999 this program was extended to Treasury bonds (with maturities from two to 20 years).
43. The SIP's trading system has a settlement bank (Landmark Bank of the Philippines) as the central point of trading activities. In essence, investors deposit funds in their accounts at the settlement bank. When they buy (sell) a particular issue of securities, the funds are deducted (added) from (to) their deposits accounts and the respective securities are added (removed) to (from) their Treasury securities accounts. Thus investors can trade Treasury securities in small sums in an efficient (electronic trading) and low cost (scripless to streamline the settlement procedures) manner. During 2001, the Philippine Treasury plans to arrange for the Treasury issues to be listed on a newly established Bond Exchange to further promote the SIP.

#### B.4 Recent market developments

44. As a direct result of the Asian currency crisis, bond issues and bond trading declined significantly in the second half of 1997 and in 1998. Table 7 summarizes listed bond turnover in the region. The available data suggest that the entire region (including Japan) suffered from a sharp decline in bond turnover. Secondary market activities picked up in 1999 but slowed down substantially in 2000. In some countries, most notably Korea,

Singapore and Taiwan, bond turnover appears to have recovered to pre-currency crisis levels. However, bond markets in other less-developed bond markets remain weak.

45. Bond issues began to pick up in 1999. In many markets, however, issues have still not recovered to pre-crisis levels.
46. An obvious trend is that the bonds issued in 1997 and 1998 are of significantly shorter maturity. In other words, Asian bond markets are still unable to provide a stable source of long-term funds to corporations. The literature attributes this trend to several factors, including the general decline in credit standing of Asian corporations, the lack of pertinent financial information on borrowers, and the inadequacy of investor protection in several Asian countries.
47. Table 7 also reveals that bond trading declined sharply in 2000. Listed bond turnover in Japan declined by 34% from US\$ 53,875 in 1999 to US\$ 35,680 in 2000. In Korea, bond turnover was very high in 1999 and declined by 90% to US\$ 23,893. Turnover in Hong Kong and Singapore also declined by more than 50%. This decline is plausibly caused by the significant volatility in Asians capital markets due to the decline in value of Internet related stocks.

## B.5 Measures to enhance long-term bond market development

48. There is weak demand for long term fixed income securities among local investors. This phenomenon is probably associated with under-developed systems of retirement benefits. Many Asian countries have no national retirement system that fosters regular contributions of funds from employers and employees. Lack of investor demand leads to illiquid markets and high transaction costs. This in turn weakens incentives for issuers to sell bonds. In Hong Kong, high-quality private issuers typically raise debt financing in Luxembourg, where institutional demand for fixed income is greater and liquidity higher.

49. One possible measure that could be used to enhance bond market development is the adoption of a nationwide retirement benefit system. For example, Hong Kong launched a mandatory pension fund (MPF) scheme for all employees during 2000. Under this defined benefit scheme, employees need to contribute 5% of their monthly income (subject to a ceiling of US\$ 128 per employee per month), while the employer contributes another 5%. The funds are invested in qualified MPF programmes provided by approved MPF providers. There are investment guidelines for MPF providers, including the portion that is to be invested locally, and the portions that should be invested in fixed income securities. In the long run, funds from MPF programs will likely increase the demand for bonds and promote bond market development. However, the MPF scheme is unlikely to show immediate results since it will take time for MPF contributions to grow.
50. It is estimated that annual pension fund contributions will amount to more than HK\$ 10 billion (US\$ 1.3 billion), or around 1% of GDP in the initial year of operation, growing to around HK\$ 60 billion (US\$ 7.74 billion) when the scheme matures. Part of the fund will be invested in the equity market.
51. The Asian currency crisis led to a drying up in liquidity of Asian bonds. In particular, issuers appeared to show a polar development in terms of credit standing. Investors typically hold high credit standing bonds, and refrain from investing in low credit standing bonds. In either case, the secondary market is significantly reduced.

## B.6 Impediments to bond market developments

52. In spite of the obvious benefits, there are numerous impediments to the development of viable bond markets in Asia. As discussed previously, there exists a “cause-and-effect” problem in the process of market development. Outlined below are issues that are pertinent to the basic framework in which healthy bond markets need to strive. In general, these factors also apply to equity market developments.

53. **Fragmented markets.** Unlike the United States, Asian economies comprise of several economies with their own language, culture, customs, and legal framework. Hence, the accounting information in one country cannot automatically be translated into that of a second country. This factor contributes to fragmented capital markets, making regional investment difficult and sometimes risky. As none of the economies (except Japan and China) are sizable enough to provide economies of scale in information processing, bond market development will be difficult. As such, it seems more rational to improve a common set of backgrounds and standards so that regional development can go hand in hand; each economy will benefit from this mode of development.
54. **Lack of disclosure.** Apart from the difference in the accounting standards, the quantity and quality of information disclosed to investors are limited. The consequence is that investors inherently assume that the investment is risky and requires a steep risk premium. It would be beneficial if sufficient and relevant information were made accessible to investors, either through a mandatory or a voluntary process.
55. **Government intervention.** Traditionally, governments in Asia have a tendency to offer subsidies to activities that fit policy considerations. An example is the provision of low-cost home financing arrangements. In this manner the return on the relevant instrument (e.g., mortgage products in the case of housing) is distorted and can substantially deviate from the market rate of return. If such instruments are suitable for developing a viable capital market (such as securitization of home mortgages), the distortion in the rate of return prohibits the development of this kind of market. The reduction and ultimately the elimination of government intervention will contribute to the smoother development of viable capital markets.
56. **Absence of benchmark securities.** Typically, fixed-income securities are short term in nature. Therefore, it is impossible to construct a good benchmark yield curve from

which efficient bond pricing can be done. It would be desirable for high quality bonds with longer maturities to be made available.

57. Starting in September 1999, the Bank of Thailand (BOT) began taking steps to introduce a benchmark yield curve which is instrumental to the development of the Thai bond market. The BOT auctions baht-denominated Treasury bills so that the yields for lower maturities can be determined.

## B.7 Credit agencies

58. A solution to the information asymmetry problem is to have issuers analyzed and rated by a credible credit agency. The role of the credit agency is to provide an objective analysis of the borrowing firm. Potential lenders can then derive valuable pricing information and assess the risk of holding the bonds issued or making loans to the borrowing firm.

59. Table 8 provides a summary of local credit agencies operating in the Asia-Pacific region. Since the early 1980s, many countries have established national credit institutions. In some countries, the law requires that debt issuers be rated by designated credit agencies.

60. However, the existing arrangement does not seem to provide sufficient information for lenders and hence effectively promote the bond market. This phenomenon may be due to a number of reasons. For example, most credit agencies are either government departments or are affiliated with the government. When state-owned enterprises issue bonds, the credit agency may be reluctant to rate the borrowing firm negatively.

61. In addition, the quantity and quality of financial and non-financial information may be inadequate for the credit agency to provide a comprehensive and timely analysis of the borrower's situation.

62. In some countries, borrowers tend to get around the credit rating procedure by issuing alternative types of debt. For example, the majority of bonds issued in Korea are guaranteed bonds backed by holding companies. In this way, issuing (subsidiary) companies need not obtain a credit rating, and hence are not required to disclose the relevant pricing information.
63. To sum up, separate national credit agencies do not appear to provide credible information on borrower quality for international investors. In the more developed capital markets of Hong Kong and Singapore, there are no local credit agencies, and issuing firms tend to use the service of international credit agencies such as Moody's and Standard and Poor.
64. International credit agencies play a significant role in the capital markets of Asia-Pacific economies as international investors often take their analyses as an authoritative and objective measure of a particular local market. For example, the downgrade of a particular country's economic outlook is often interpreted as a significant piece of negative information.
65. International credit agencies provide analyses on the risk profiles of given countries, industries, and specific firms. They employ both quantitative (including a set of comparative statistics of key economic variables) and qualitative measures (including openness of government policies and other non-quantitative areas) to help them arrive at a final decision on the risk profile.

## B.8 Non-performing loans and policy options

66. Non-performing loans (NPLs) have been a major issue in economic recovery following the emergence of the currency crisis. In particular, a few economies, including Japan and Korea, have incurred significant amounts of loans in their respective banking

sectors. Such large amounts of NPLs provide a “overhanging” problem that capital cannot be utilized in a productive manner in the economy.

67. NPLs generate a significant problem for the banking sector. Given a large amount of NPLs, both bank asset quality and bank profitability are adversely affected. In some cases, the solvency of the banking sector is in doubt due to the weak capital structure (such as the inability of banks to meet the Bank of International Settlement guidelines of capital adequacy). As a result, the banking sector might be prone to exposures of disintermediation (due to the lack of confidence in the banking sector) or bank runs.
68. Ultimately, NPLs were created due to (1) lending to loss making corporations / institutions; and/or (2) significant declines in asset value and cash flows generated by the collateral. The currency crisis highlighted both effects on the rapid accumulation of NPLs. A major factor is that Asian corporations over borrowed on bank loans to finance their infrastructure projects and other development, which suffered significant declines in value after the currency crisis.
69. Another source of NPL arises from the close relation between banks and the borrowing firms. In some economies, most notably Japan and Korea, banks maintain close ties with their borrowers. These close ties have the advantage of providing long-term financing for investments, the benefits of which need time to be realized. However, it also creates exposure in that banks continue to finance uncompetitive sectors. In such a scenario, the bank’s credit-monitoring role is weakened and capital is utilized in a sub-optimal manner. This issue is becoming increasingly significant due to the process of globalization.
70. Structural reform is a long-term solution to the NPL problem. In essence, this process is a redefinition of the role the banking sector should play in the economy. Under an efficient banking institutional setting, banks provide a capital intermediary that channels

funds from surplus units to deficit units with high economic output. Such a process involves the joint efforts of the government, the banking regulators and other financial institutions to restructure and strengthen the monitoring role of the banking sector.

71. Recapitalization of the banking sector. As a result of the currency crisis and the subsequent decline in asset value, some banks suffer from capital inadequacy. Hence, banks need fresh capital so that the overall strength of the banking sector is restored. Recapitalization can be achieved through the internal capital market (including recapitalization from the government) or through the international capital market. Under the later option, the local government needs to allow foreign investors to acquire larger equity stakes in local banks.
72. Disposal of non-performing assets. To avoid the overhang effect on NPLs, the bank can dispose of non-performing assets from its balance sheet. Since there is usually no institutional procedure to the restructuring of non-performing assets, banks could either dispose of the assets directly, or to set up an asset management company to contain the assets (such as problem loans or physical assets like property). Asset management companies can operate either as active business organizations (e.g., to sell the assets given favorable market conditions) or as passive holding companies for the assets.
73. Capital market measures. In most cases banks do not prefer to be involved in the restructuring of the borrower. If the borrower is in default and the bank takes possession of its assets, however, the bank needs to ensure that the assets can be restructured in an economically sound manner. In more developed markets such as the United States, the capital market provides an institutional setting in which mergers and acquisitions provide a way to restructure of problem assets. An example of such a mechanism can be found in Hong Kong, where insolvent listed firms can undergo a scheme of arrangement. In a typical scheme, a new investor is brought in to acquire a major block of newly issued equity in the insolvent firm. At the same time, creditors

(usually banks) are involved in negotiation on settlement of the outstanding debt. When the scheme is accepted and the regulators approve the process, the newly injected capital will be used to repay the restructured debt and provide working capital for the firm, which re-emerges as a solvent company.

74. General comment on the NPL problem. In general, the recovery of the Asia-Pacific economies has not involved large-scale structural reform. Also, there are few active capital market institutions, which can carry out efficient restructuring. While the NPL issue is less acute due to regional economic recovery, there is still considerable risk that NPLs might re-emerge as the economic condition deteriorates.

## **C. Recommendations**

### **C.1 General comments**

75. The Asian financial crisis has called for developments in financial infrastructure in the Asia-Pacific region. During the crisis, many regional economies suffered from a rapid outflow of capital, which led to chain reactions in capital markets. These are detrimental to economic growth.
76. We identify a potential reason for the damage caused by the currency crisis as the heavy reliance on external financing in many economies. Based on this conjecture, we suggest that an effective means of promoting long-term economic development and preventing future crises is to develop local capital markets as a source of financing for economic development.
77. Despite the numerous difficulties discussed in this report, we hold the belief that establishing capital markets with sufficient depth is achievable for several reasons. First, the high savings rate in Asia of about 30% should provide sufficient funding sources to support mature capital market markets.

78. Second, it is conceivable that economic growth in the region will continue to be significant. The last two years have seen many Asia-Pacific economies demonstrating remarkable recoveries from previous setbacks. As regional economies continue to grow at a fast rate, successful firms will likely emerge and asset quality in general will improve.
79. Last but not least, many regional governments have paid serious attention to the capital market's significance of the economic development process. Such improved awareness provides a solid foundation in which governments can cooperate and work towards identifying and implementing means to enhance capital market developments.

## C.2 Outlook for bond markets in Asia-Pacific markets

80. Despite the slow development of fixed-income capital markets in Asia-Pacific economies, there is substantial potential for developing active bond markets in the region. The region's general economic development should remain strong and this would lead to a strong need for long-term capital to fund development by governments and corporations. Our view is that the strong demand for funds would provide a stable supply of bonds and this would lead to future developments in the bond market. At present, the major issue is how to develop the institutional and market structure so that active and stable debt market can operate.
81. Supply of bonds. Large amounts of funds will be required to support the region's economic activities. Based on a study made in 1995 by Ismail Dalla (*The Emerging Asian Bond Market*, 1995), a total of US\$ 10 trillion will be required between 1996 and 2005 to support infrastructure projects in Asian economies. Should a portion of these sums be financed through the bond markets, issuers, both government and otherwise, would provide a stable supply of bonds.

82. It is estimated that because of the lack of an active bond market and the means to evaluate the credit standing of private issuers, governments and government related organizations would dominate bond issues. For example, bond issues in the Hong Kong bond market are mainly represented by the Hong Kong Exchange Fund (directly guaranteed by the Hong Kong government), and quasi-government organizations such as the Hong Kong Mortgage Corporation, the Mass Transit Railway, and the Hong Kong Airport Authority.
83. Demand for bonds. A favorable factor on the demand side of bond market development is that Asian economies are generally characterized by a high savings rate. Traditionally, investors in Asia prefer equity to bonds. This phenomenon is probably due to the high economic growth in the region as well as the lack of understanding in the risk-return tradeoff in investment. Overall, the region is characterized by a high savings rate, which is a positive factor for bond markets. Table 9 shows that the general savings rate in East Asia (i.e., excluding Japan) is 36%, compared with 18% in the United States and 16% in the United Kingdom. China, Singapore, and Malaysia exhibit very high savings rates of 40%, 52%, and 47%, respectively.
84. An important issue in demand for bonds is that Asian economies generally have under-developed retirement and pensions schemes. With the adoption of pension systems in economies such as Singapore and Hong Kong, it is plausible that the demand for long-term yield generating assets will increase steadily.

### C.3 Legal and regulatory framework

85. A good regulatory framework needs to be established to promote debt market development. The general framework should aim at setting relevant laws and ordinances, making requirements for relevant financial institutions, and developing enforcement measures to implement these laws.

86. In general, a good regulatory framework should promote self-regulation and self-monitoring of financial institutions. The regulatory framework should leave sufficient room for market participants to act in a flexible manner. At the same time, the system should include measures to encourage good practice.
87. The underlying principles include increased transparency of disclosure, enhancement of corporate governance, and recognition of the accountability of regulators. The effect of good regulation is a market infrastructure that promotes investor (especially creditor) protection, has an effective judicial system, and facilitates high-quality economic information. Table 10 provides a summary of the three areas of good market infrastructure and how the individual countries rate in these areas.

#### C.4 Information transparency

88. With the exception of Hong Kong, Malaysia and Singapore, which use British accounting standards, standards vary from country to country. It would be a positive step if regional accounting and regulatory bodies were to agree on a common set of disclosure standards.
89. Efforts should also be made to ensure that all investors have access to the same set of sensitive information at the same time. As information technologies continue to improve, regulatory bodies should constantly review disclosure guidelines. This would ensure that corporate managers utilize the most efficient and effective means of communicating with investors.

#### C.5 Market Infrastructure

90. Within each individual economy, government and regulatory bodies should review and enhance the effectiveness of the trading and settlement system. This would reduce transaction costs and trading risks.

91. On a regional scale, it may be meaningful to explore the possibility of establishing a common trading platform. For example, local exchanges can join forces to develop a trading and clearing system that allows investors to trade securities on a regional basis.
92. Another possibility is to develop a non-domestic currency trading system to minimize the impact of capital inflows and outflows. For example, Hong Kong is developing a trading system using the U.S. dollar as the clearing currency. This would encourage the trading of non-domestic currency debt securities listed on the domestic market. It would also reduce the impact of capital inflows on the exchange rate system. Given the experience of the U.S. dollar settlement system developed in Hong Kong, regional economies may consider setting similar trading systems so that, in the end, a common trading system will be available.

## C.6 Corporate governance

93. Corporate governance has been weak among many Asian listed companies. Traditionally, many firms are closely held by family members who are typically reluctant to disclose information on operations. There is a need to develop and promote the practice of good corporate governance in Asia.
94. The promotion of corporate governance in Asia must overcome barriers in a culture that sees investors remain passive. We recommend that the first step is to provide adequate education for corporate managers. The regulatory body should draft the principles of best practice and guidelines to desirable conduct. Similarly, there should be suggestions and guidelines to investors concerning their role and rights. The relevant documentation should be distributed or made accessible to corporate managers and investors.

95. Guidelines should also be made to encourage communication between corporate insiders and shareholders. In addition, the regulatory body should see that price-sensitive information is disseminated in the proper manner. Efforts should be made to ensure that no insider dealing is carried out so as to protect minority shareholders.
96. At present, regulatory requirements vary widely among regional economies. More close cooperation should pertain among regional regulators to establish a common understanding on regulatory requirements. Such cooperative efforts will also enhance enforcement by filling the information gap, especially for cross-border transactions.
97. Another possible measure is to organize awards for good corporate governance. The basic idea is to select an Asian corporation that demonstrates best practice in corporate governance. A regional award will be given to a company recognized for their achievements in this area. In this way regional regulators can set up solid examples of good practice and encourage other corporations to follow this path. In the long run, such efforts can enhance regional cooperation and attract interest from the international investment community.

## C.7 Credit agencies

98. As discussed previously, separate national credit agencies suffer from a lack of conformity, and are weak in providing assurance to foreign investors. Therefore, a regional credit agency should be established to set up common credit assessment standards pertinent to the region's standards, and perform unbiased analysis and disclosure.
99. In general, we would like to see credit agencies that are independent from national governments to avoid any conflicts of interest. These agencies should operate according to professional standards and should be financially independent from governments or groups of companies. An idea would be to invite international credit agencies to act as

founding members so that they can participate in the process of setting up criteria and assessment standards.

## C.8 Investor education

100. Statistics show that the percentage of investors holding equity is low in the Asia-Pacific region. The percentage of investors holding other types of securities is even lower. Based on these facts, investor education is critical in order to increase the general investor base and the empowerment of investors who want to perform risk/return analyses as part of their investment process. Investor education is especially important in the bond market, since Asian investors have a general reluctance to hold fixed-income securities.

101. Investor education should aim at building positive attitudes of investing as an integral component of managing one's finances and an important tool for planning for retirement and other major consumption.

## C.9 Small economies in Asia

102. It is conceivable that the benefits of active bond markets accrue mainly to more substantial economies with well-developed financial market infrastructure. There are a number of small economies that do not have such properties, and it is unlikely that these economies would share the benefits. One plausible solution is that the smaller economies should list their bonds on a regional exchange, as mentioned in the previous section. Under this model, the denomination of the bonds could be in the currency of the country of listing so that investors can evaluate the bonds' investment value in a more convenient way.

103. From another angle, small economies in Asia are faced with the scarcity in funding sources for economic development. In these economies, it is plausible that the lack of

financial market infrastructure and the under-development of private sector corporations may find it difficult to access to international capital market. Hence, the local government might consider playing a more direct role in such development projects. In various infrastructure projects such as highway and water resources projects, the local government can form an institution to conduct the investment. These institutions may then be used to raise funds in the debt or equity markets.

104. As capital market development is concerned, investment funds may come from (1) direct investment; (2) bank lending; or (3) arm's length investment such as bonds or stock. In the more under-development countries, it is plausible that the more direct form of investment in which the lender (or fund provider) has more access to relevant information would be more appropriate. Hence, it is plausible that in such countries the corporations or projects would focus on direct funding sources from international agencies, such as supernationals like the Asian Development Bank and the International Finance Corporation.

## **APPENDICES**

Table 1. Stock market capitalization

Country	Listed companies		\$ million		% of GDP	
	1990	2000	1990	2000	1990	2000
Bangladesh	134	221	321	1,186	1.1	1.9
China	14	1,086	2,028	580,991	0.5	33.4
Hong Kong	284	695	83,397	609,090	111.5	383.2
India	2,435	5,937	38,567	148,064	12.2	41.3
Indonesia	125	290	8,081	26,834	7.1	45.0
Iran	97	295	34,282	21,830	0.0	19.7
Japan	2,071	2,470	2,917,679	4,546,937	98.2	104.6
Kazakhstan	0	17	-	2,260	0.0	14.3
Korea	669	704	110,594	148,649	43.8	75.8
Malaysia	282	795	48,611	116,935	110.4	184.0
Mongolia	0	418	-	32	0.0	3.5
Nepal	0	108	-	418	0.0	8.4
New Zealand	171	114	8,835	28,352	20.5	51.9
Pakistan	487	762	2,850	6,581	7.1	12.0
Philippines	153	230	5,927	51,554	13.4	62.8
Russian Federation	13	249	244	38,922	0.0	18.0
Singapore	150	355	34,308	198,407	93.6	233.6
Sri Lanka	175	239	917	1,074	11.4	9.9
Thailand	214	381	23,896	29,489	28.0	46.9
Turkey	110	315	19,065	69,659	12.6	60.7

Source: 2001 World Development Indicators, International Finance Corporation, World Bank

Table 2. Stock market trading volume

Country	Value traded (% of GDP)		Turnover ratio*	
	1990	2000	1990	2000
Bangladesh	0.0	1.7	1.5	74.4
China	0.2	38.1	158.9	158.3
Hong Kong	46.3	154.1	43.1	51.4
India	6.9	27.3	65.9	133.6
Indonesia	3.5	14.0	75.8	32.9
Iran	0.0	2.0	30.4	12.4
Japan	54.0	42.5	43.8	52.5
Kazakhstan	0.0	0.2	0.0	1.2
Korea	30.1	180.3	61.3	233.2
Malaysia	24.7	61.4	24.6	44.6
Mongolia	0.0	3.8	0.0	7.3
Nepal	0.0	0.5	0.0	6.9
New Zealand	4.5	21.9	17.3	45.0
Pakistan	0.6	36.2	8.7	475.5
Philippines	2.7	25.7	13.6	15.8
Russian Federation	0.0	0.7	0.0	36.9
Singapore	55.4	115.4	0.0	66.9
Sri Lanka	0.5	1.3	5.8	11.0
Thailand	26.8	33.5	92.6	53.2
Turkey	3.9	43.8	42.5	206.2

Source: 2001 World Development Indicators, International Finance Corporation, World Bank

\* Turnover ratio is value of shares traded as a percentage of capitalization

Table 3. International bank lending to Asian countries

	December 1996	December 1997	June 1998	December 1998	June 1999	December 1999	June 2000	December 2000	June 2001
Total Developng Countries (TD)	692.6	891.7	860.7	836.6	895.4	877.2	860.5	873.8	828.8
Total Asia (TA)	367.1	378.8	319.6	299.0	287.1	270.9	282.6	275.2	251.3
Indonesia	55.5	58.0	48.4	44.9	45.0	41.7	40.4	40.2	36.9
Korea, Republic of	100.0	93.7	71.6	65.5	67.2	64.8	61.1	58.8	52.8
Malaysia	22.2	27.3	22.8	20.9	18.8	18.6	17.3	20.8	21.6
Thailand	70.2	58.5	46.4	41.2	39.4	32.4	29.0	26.6	23.1
China	55.0	62.8	58.7	58.4	72.3	63.5	61.3	58.2	53.8
Taiwan	22.4	26.0	22.5	20.9	20.4	21.0	19.3	18.1	16.1
Total Selected Asian Countries (TS)	325.3	326.3	270.4	251.8	263.1	242.0	228.4	222.7	204.3
(TA/TD)%	53.0	42.5	37.1	35.7	32.1	30.9	32.8	31.5	30.3
(TS/TD)%	47.0	36.6	31.4	30.1	29.4	27.6	26.5	25.5	24.7
Average Maturity (Selected Countries)									
Less than 1 and 1 year (%)	63.0	62.8	56.5	55.6	49.3	48.1	49.5	46.4	47.6
Average Maturity (Total Asian Countries)									
Less than 1 and 1 year (%)	61.5	60.3	53.0	52.5	51.4	51.0	47.6	44.9	45.9

Source: BIS, "Consolidated International Banking Statistics", various issues, 1998-2001.

Table 4. Net private capital flows to emerging markets (in billions of U.S. dollars)

	1992	1993	1994	1995	1996	1997	1998	1999	2000
Emerging markets									
Total net private capital inflows	116.9	124.3	141.3	189.0	224.2	126.2	45.2	71.5	32.2
Bank loans and other	28.5	-14.0	-49.5	49.5	18.7	-62.1	-127.2	-135.6	-172.1
Net portfolio investment	53.0	81.6	109.9	42.6	85.0	43.3	23.8	53.7	58.3
Net foreign direct investment	35.5	56.7	80.9	96.9	120.4	144.9	148.7	153.4	146.0
Asia									
Total net private capital inflows	15.0	41.5	67.1	74.4	113.9	18.9	-55.4	2.0	-2.6
Bank loans and other	-12.7	-9.5	3.4	6.3	31.2	-48.4	-119.1	-88.4	-97.8
Net portfolio investment	12.9	18.0	18.9	19.7	27.1	7.1	6.5	36.6	45.9
Net foreign direct investment	14.7	33.0	44.7	48.5	55.5	60.2	57.2	53.8	49.3

Source: IMF (2001), "International Capital Markets: Developments, Prospects, and Key Policy Issues", p.43.

Table 5. Outstanding bank loans, bonds, and equity markets in South East Asia, December 1998 (US\$ billion)

Country / Economy	Bank loans	Corporate bonds	Equity market
Indonesia	60.2 <sup>1</sup>	1.5	16.2
Korea	43.5	27.3	30.7
Malaysia	148.4	5.1	134.4
Thailand	108.7	2.6	26.3
U.S.	38.8	43.2	158.1

<sup>1</sup> At the end of 1997.

Source: Kim, Y.H. Policy Agenda For Bond Market Development in Asia, In *Bond Market Development in Asia*, OECD, Paris, p.143.

Table 6. Market value of listed bonds at year end (US\$ million)

	1995	1996	1997	1998	1999	2000
Hong Kong	NA	NA	NA	110,438	98,910	89,401
Indonesia	405	339	109	50	21	165
Colombo	NA	5.3	46.6	64.4	70.2	NA
Japan	3,886,535	3,821,540	3,600,291	4,472,648	5,263,913	5,083,839
Korea	162,421	208,167	132,222	277,788	321,697	335,718
Malaysia	3,497	3,444	1,788	1,310	1,753	1,563
Philippines	-	6	4	0	0	-
Singapore	150,539	161,239	171,626	182,946	198,939	218,792
Taiwan	31,813	36,750	32,919	36,578	44,284	48,445
Thailand	1,945	927	351	352	155	NA

Source: International Federation of Stock Exchanges, web site [www.fibv.com](http://www.fibv.com)

NA: *Not Available* - : *Not Applicable*

Table 7. Listed bond turnover in Asian exchanges (US\$ million)

	1995	1996	1997	1998	1999	2000
Hong Kong	47	41	23	14	18	8
Indonesia	-	-	-	-	-	-
Colombo	NA	NA	1.0	4.9	7.8	5.5
Japan	260,841	206,668	155,623	72,638	53,875	35,680
Korea	1,855	1,710	4,103	11,383	247,177	23,893
Malaysia	375	278	908	139	1,032	1,000
Philippines	-	-	-	-	-	-
Singapore	3,977	2,840	3,883	876	3,909	1,239
Taiwan	70	365	683	1,227	1,683	1,629
Thailand	4	0	0	0	0	NA

Source: International Federation of Stock Exchanges, web site [www.fibv.com](http://www.fibv.com)

NA: *Not Available* - : *Not Applicable*

Table 8. Summary information of local credit rating bureaus in Southeast Asia

Country / Economy	Credit rating agency	Established
Hong Kong	NA	NA
Indonesia	Pefindo Credit Rating Agency	1995
Korea	Korea Management Consulting and Credit Rating Corporation (KMCRC)	1983
	Korea Investors Service	1985
	National Information and Credit Evaluation Corporation (NICE)	1986
Malaysia	Rating Agency Malaysia Berhad	1990
	Malaysian Rating Corporation Berhad (MARC)	1995
Philippines	Credit Information Bureau Inc.	1982
Singapore	NA	NA
Thailand	Thai Rating and Information Services (TRIS)	1993

Source: collected from various chapters, Reside, Rhee, and Shimomoto, "The feasibility of creating mortgage-backed securities markets in Asian countries", *Asian Development Bank*, 1999

NA: *Not Applicable*

Table 9. Foreign reserves and savings rates in Asia-Pacific economics

	Foreign reserves 2000 (US\$ billion)	Savings ratio 1999 (%)
China	166	40
Hong Kong	108	30
Singapore	80	52
Thailand	32	33
S. Korea	96	34
Malaysia	29	47
Indonesia	22	32
Philippines	13	20
East Asia	901	36
Australia	17	22
Japan	347	28
U.S.A	31	18
Germany	50	23
U.K.	39	16

Source: International Financial Statistics, IMF;  
World development indicators 2001, World Bank

Table 10. Indicators of good financial infrastructure

Country	Creditor rights *	Judicial system effectiveness**	Quality of information***
Hong Kong	HIGH	HIGH	HIGH
Indonesia	LOW	LOW	LOW
Korea	MEDIUM	MEDIUM	MEDIUM
Malaysia	MEDIUM	MEDIUM	MEDIUM
Philippines	LOW	LOW	MEDIUM
Singapore	HIGH	HIGH	MEDIUM
Taiwan	LOW	MEDIUM	MEDIUM
Thailand	MEDIUM	LOW	MEDIUM

Source: Raw data from Herring and Chatuscritak, “The case of the missing market: The bond market and why it matters for financial development”, pp. 15-17, Asian Development Bank Institute Working Paper # 11, July 2000. The original paper provides a list of indicators for each of the three criteria for good financial infrastructure. This table simplifies the entries as high (all or most of indicators are above average); medium (mixed scores of above and below average); and low (all or most scores are below average).

- \* Indicators for creditor rights include: contract enforceability, automatic stay on secured assets, secured creditors paid first, restrictions on autonomous reorganization, management does not stay in reorganization, creditor rights, and legal right reserved required to continue operations
- \*\* Indicators for effectiveness of judicial system include: efficiency of judicial system, rule of law, corruption, bureaucratic quality, risk of expropriation, and risk of contract repudiation
- \*\*\* Indicators for quality of information include: accounting standards, and index of restriction on the Press