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## **Institutional Impediments to the Development of Fixed-Income Securities Markets: An Asian Perspective\***

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# Institutional Impediments to the Development of Fixed-Income Securities Markets: An Asian Perspective

## Introduction

In a report prepared for an OECD workshop on “Debt Securities Markets in the Dynamic Asian Economies (DAEs),” held in Paris, France on 7-8 September 1992, Rhee (1992) identified four institutional impediments to the development of fixed-income securities markets in six DAEs (Hong Kong, China; the Republic of Korea; Malaysia; Singapore; Taipei, China; and Thailand):

- a. Lack of Benchmark Interest Rates: The lack of benchmark interest rates is the most critical factor that impedes the smooth development of fixed-income securities markets.
- b. Limited Demand: Largely because of the direct and indirect control of interest rates, the demand for government-issued bonds is lacking. As a result, the primary market activities of government bonds must rely on captive financial institutions, which rarely sell their purchased bonds on the secondary markets.
- c. Restrictions on Supply: A wide range of statutory restrictions and financial regulations severely limit the issue of long-term fixed-income securities by financial institutions and corporations.
- d. Inadequate Infrastructure: Contractual savings institutions, a competitive auction system in the primary markets, secondary market trading system, clearing and

settlement systems, and rating agencies have yet to be either reinforced or developed.

More than six years have passed since the 1992 Workshop. What has happened since then? Have we witnessed the undertaking of a set of comprehensive policy measures in the DAEs facing the above institutional impediments? Unfortunately and not surprisingly, the answer is “Not Quite.” Most lending to the private sector in the Asian region has continued to take the form of short-term bank credit, while only some piecemeal efforts have been made. At the end of 1997, in the selected Asian economies, bank loans amounted to approximately 95 percent of their combined GDPs, while capital market borrowing through long-term bonds amounted to a mere 12 percent.<sup>1,2</sup> In China, for example, Lardy (1998) reports that banks accounted for between three-quarters and nine-tenth of all financial intermediation between savers and investors during the 10-year period, 1987-1996. Although the Asian financial crisis was caused largely by structural factors, macroeconomic policies adopted by the Asian economies were not particularly helpful for the development of fixed-income securities markets.<sup>3</sup> During the period, 1993-1996, the Asian economies sterilized large capital inflows by building up foreign exchange reserves. This sterilization caused domestic interest rates to move higher, increasing spreads between domestic and international interest rates [Stiglitz (1998)]. At the same time, the Asian economies resorted to

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<sup>1</sup> The selected Asian economies include: People’s Republic of China, Indonesia, the Republic of Korea, Malaysia, the Philippines, and Thailand.

<sup>2</sup> See Tables 1 and 2 for the current state of fixed-income securities markets in the selected Asian economies.

<sup>3</sup> A useful exposition of various causes of the Asian financial crisis along with relevant references can be found in Radelet and Sachs (1998a, 1998b), Boorman (1998), Frankel (1998), and Rhee (1998).

pegged exchange rates, which put severe strain on their export competitiveness as real exchange rates appreciated in tandem with the U.S. dollar value beginning in 1995.<sup>4</sup> Domestic corporations borrowed heavily on offshore markets to take advantage of interest rate differentials and pegged exchange rates.

In retrospect, fragile banking sector and underdeveloped capital market are two equally important root causes of the Asian financial crisis. Due to structural weaknesses characterized by lax supervision, non-autonomous management, and poor corporate governance system, the banking sector in Asian economies faced limitations in channeling large savings amounting to 30 to 40 percent of GDPs to long-term productive investments. When these economies suffered from the sudden reversals and flight of international capital, massive foreign exchange losses exacerbated a corporate liquidity crisis of systemic proportion unprecedented in the recent economic history of this region. Clearly, one important lesson from this crisis is that reliance on short-term foreign capital should have been minimized by creating alternative domestic sources of long-term capital.

When its fixed-income securities market remains underdeveloped, any economy pays a high price in the form of foregone benefits. At least three types of lost benefits may be cited. First, long-term contractual savings institutions (pension and provident funds, insurance companies, and open- and closed-end investment companies) can not function in the absence of well-functioning fixed-income securities markets to supplement banking institutions in savings mobilization. The role of contractual savings institutions is critically important when the banking sector reveals its own structural

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<sup>4</sup> See *Asian Development Outlook 1998*, pp. 19-37.

weaknesses. Second, banks in financial distress can improve their capital adequacy and liquidity ratios by selling their assets, both performing and non-performing, through asset securitization. Especially for those economies in the Asian region affected by the on-going financial crisis, asset securitization represents a critically important process in restructuring bank assets. Without a well-functioning capital market, asset securitization is a meaningless concept. Third, another foregone benefit is a valuable monitoring function of corporate debt over reckless managers who tend to waste *free cash flow*.<sup>5</sup> Jensen (1986) is the first one who recognized this unique role of corporate debt by proposing the "debt-monitoring" hypothesis. He states that "conflicts of interest between shareholders and managers become severe when the corporation generates substantial free cash flow. The problem is how to motivate managers to disgorge the cash rather than investing it at below the cost of capital....The creation of debt enables the managers to bond their promise to pay out future cash flows." Thus, corporate leverage provides discipline to management through the fixed-income securities market and shareholders gain positive benefits from financial leverage since debt reduces the free cash flow available to management.<sup>6</sup> With a grossly inadequate corporate governance system, a fully--developed debt market would have been useful in monitoring management activities when abundant liquidity available was wasted on various projects that did not warrant investment.

Against the backdrop of the Asian financial crisis, the main purpose of this paper is to review what has been done in Asia to eliminate the major obstacles identified

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<sup>5</sup> Free cash flow is cash flow in excess of that required to fund all projects with positive net present values.

<sup>6</sup> Jensen's debt-monitoring hypothesis was elaborated by Harris and Raviv (1990) and Stulz (1990)

above. The paper's presentation will focus on the crisis-affected economies (Indonesia, Korea, Malaysia, Philippines, and Thailand) and the People's Republic of China whose economy had not been directly affected by the on-going crisis, but remains vulnerable.

### **Lack of Benchmark Interest Rates**

Asian government authorities have been making special efforts to create a benchmark yield curve as they recognize its importance in pricing fixed-income securities. The most remarkable success case is the Hong Kong Monetary Authority's (HKMA's) Exchange Fund Note (EFN) program that began in 1993. EFNs initially started with relatively short-term maturities of two and three years, but the longer maturities of seven and ten years were introduced later. The success of the EFN program may be attributed to three reasons: (i) the HKMA provides a central bank discount window for EFNs; (ii) the HKMA uses EFNs as a monetary policy instrument to adjust interbank liquidity<sup>7</sup>; and (iii) the issue cycle is regularly scheduled.

In other Asian economies, the government's effort in creating a benchmark yield curve has been mixed. When CAGAMAS Bhd. (National Mortgage Corporation) was created in 1987, it was the Malaysian authority's wish that CAGAMAS bonds would generate a proxy benchmark yield curve. Unfortunately, this wish was not realized when CAGAMAS bonds were designated by the Bank Negara Malaysia (BNM), the central bank, as eligible liquid assets counted for liquid asset requirement purposes by financial institutions. This created a large demand for the bonds and lowered the

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<sup>7</sup> and empirically tested by Maloney, McCormick, and Mitchell (1993) and Ferland and Rhee (1996). Under the classic version of the currency board, neither monetary policy nor central banks is needed. However, the Hong Kong currency board is not exactly the classic version.

funding costs to the benefit of low-income housing projects for which CAGAMAS Bhd was originally created, but market liquidity of CAGAMAS bonds in the secondary market was diminished to make them inappropriate for benchmarking purpose [Pardy (1998)]. In March 1996, CAGAMAS introduced the so-called Tier 2 bonds for mortgage loans for houses costing more than M\$100,000. These bonds were not qualified as eligible liquid assets. After four issues, the Tier 2 housing bonds were discontinued in February 1997. The main reason was BNM's concern about the overheated property market.

The second attempt by the Malaysian government was the introduction of Khazanah bonds in September 1997.<sup>8</sup> These are 3-year zero-coupon bonds that are not qualified as eligible liquid assets for financial institutions. The proceeds from the bonds are to be invested only in domestic securities or other domestic assets. It was a noble idea in two aspects: first, Khazanah bonds are consistent with Islamic principles since no interest income is involved; and second, they can be issued even if the government does not have real borrowing need due to fiscal surpluses. So far, Khazanah bonds were issued three times, while two of the issue plans were cancelled due to credit conditions in the local market. Although the original idea of Khazanah bonds was adopted from the HKMA's EFN program, it should be noted that the BNM discount window is not active and Khazanah bonds are not eligible for discounting purpose. Pardy (1998), therefore, questions the possibility of Khazanah bonds serving as benchmark instruments.

In Korea, the maturity structure of government-issued bills and bonds is not carefully planned. In addition, bond market participants use the yields on various types

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<sup>8</sup> Khazanah Nasional Bhd is wholly owned by the Ministry of Finance.

of bonds of differing maturities as benchmark interest rates. For example, the Korea Securities Dealers Association selected a number of instruments for benchmarking to disclose their yields in its official publications [Shin (1998)]. They are: (i) monetary stabilization bonds or financial debentures of one-year maturity; (ii) corporate bonds guaranteed by financial institutions of three-year maturity; (iii) regional development bonds of five-year maturity; (iv) national housing bonds of longer-term maturity. This simply indicates the urgency of creating a true benchmark yield curve based on Treasury issues with differing maturities.

Private securities in the Philippines, including long-term mortgages, have been priced in reference to Treasury bills. Due to the short-term maturity of Treasury bills, they can not really serve as benchmark interest rates, but Reside (1998) indicates that the practice of using Treasury bills to price term securities has become deeply ingrained in the Philippine local market.

Indonesian market participants also rely on short-term deposit rates (3 to 6 months) of state-owned banks and/or SBI (Sertifikat Bank Indonesia or the Central Bank Short-Term Notes) for benchmarking purpose even though they are short-term rates. China and Thailand have yet to create viable risk-free securities as benchmark instruments.

### **Limited Demand**

The limited demand for fixed-income securities in the Asian economies may be attributed to the captive nature of the primary markets given controlled or administered interest rates. Although interest rates have been deregulated, substantial gap exists between the primary market yield and the secondary market yield for government-

issued securities. As a result, some Asian governments continue to rely on financial institutions, and non-bank financial institutions (especially pension/provident funds) as captive demanders for government bonds in the primary markets. Korea presents itself as a good case in point. Korean government bonds are issued using a “competitive” bidding method that awards the bids in the order of the lowest to the highest yields. However, the highest yields must be lower than the rate set by the Korean government. If the total award is lower than the total planned issue, then the syndicate is obliged to buy the rest at an annual yield which is 0.1 percent lower than the average yield of successful bids. As the pre-set rate is lower than the market interest rate, the primary market yield fails to reflect the conditions in the credit market.

In Korea, individuals are also forced to purchase government-issued bonds at low yields. When they register their newly purchased homes and cars, they are obligated to buy national housing bonds and subway bonds. As a result, a bewildering array of more than a dozen government-issued bonds exists as the government allows a number of special accounts and funds to issue bonds for the convenience of forced subscriptions. The existence of too many issuers and different types of government bonds create additional difficulties in developing the fixed-income securities market. First, the size of some bond issues is too small to maintain respectable liquidity. Second, the issuance cycle is irregular, but it is clustered near the end of the year. Third, maturity and yields are not carefully planned to pave the ways for the creation of a benchmark yield curve.

The captive nature of primary market activities is not unique to Korea. This is a common problem in the Asian region. Another interesting method of lowering effective yield is found in China. Most Chinese bonds are redeemed at maturity an amount consisting of principal plus accumulated simple interest based on the stated coupon rate. For example, a bond with the coupon rate of 13 percent and two-year maturity would pay 1,260. The effective yields becomes only 11.9 percent as opposed to the market interest rate of 13 percent [Nam, Park, and Kim (1998a)]. The Chinese government also dictates the yield on bonds issued by state-owned enterprises (SOEs). To minimize competitive pressure on Treasury issues, the Chinese government stipulates that yields on SOE-issued bonds can not exceed those on Treasury bills and they can not be more than 1.4 times those on bank deposit rates.

Once institutional investors purchase the bonds, they can not sell them unless they are willing to take large capital losses. Thus, distorted yields in the primary market and captive demanders who are not willing to trade their securities are the main reasons for extreme illiquidity in the secondary market.

One lesson can be learned from Japan. The primary and secondary markets for Japanese government bonds became active in 1977. This was when the Japanese government stopped relying on the captive financial institutions and began offering new issues of government securities in an open, competitive manner.

### **Restrictions on Supply**

The limited supply of quality debt securities is another challenge to face in developing the fixed-income securities markets. Three underlying reasons may be pointed out for the limited supply of viable debt instruments: (i) poor credit standing of

issuing corporations; (ii) statutory restrictions on the issuance of fixed-income instruments; and (iii) regulatory process.

Poor Credit Standing of Issuing Corporations: PEFINDO Rating Agency of Indonesia, for example, reports that only less than one-third of bond issues were above investment-grade rating prior to the financial crisis, while no publicly rated entity had received PEFINDO's highest rating.<sup>9</sup> As of June 1997, the interest coverage ratio of the Korean non-financial corporations was 1.36, which means that operating income (or earnings before interest and taxes) was 1.36 times greater than interest expenses. This ratio compares with 3.00 - 5.00 in a sample of OECD members. According to IMF's rough estimates, a five percentage point increase in interest rates will lower this coverage ratio to around 0.86.<sup>10</sup> The Korean interest rates were raised by 5.5 percentage points under the IMF program from the pre-crisis average of 12.5 percent to the post-crisis average of 18.0 percent, which should be indicative of the financial health of Korean corporations. Stock exchange-listed companies of Thailand also showed extremely high financial leverage. At the end of 1997, the average debt to equity ratio was 450 percent which compares with 194 percent (Japan), 160 percent (Malaysia), 90 percent (Taipei,China), and 106 percent (United States). The probability of bankruptcy estimated for Thai corporations was on average 40 percent.<sup>11,12</sup> SOEs in China are also highly leveraged. The average debt-to-equity ratio of all SOEs climbed to 566 percent

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<sup>9</sup> See Harianto (1998).

<sup>10</sup> See IMF Staff Report for the 1998 Article IV Consultation and Second Quarterly Review under the Stand-By Arrangement (Korea).

<sup>11</sup> The probability of default is defined as  $\text{Prob}[(\text{Earnings before interest and taxes} + \text{Depreciation} + \text{Amortization}) < \text{Interest Expenses}]$ .

<sup>12</sup> See IMF Fourth Review under the Stand-By Arrangement (Thailand)(August 1998).

in 1995 from 300 percent in 1994. Unfortunately, more up-to-date information is unavailable, but given the recent non-performing loan ratios of 25 percent in 1997 and 22 percent in 1995 of China's four largest state-owned banks, the debt-equity ratio of SOEs must have deteriorated.<sup>13</sup>

Statutory Restrictions and Financial Regulations on the Issuance of Fixed-Income Instruments: The second reason for the limited supply of viable fixed-income securities may be found in statutory restrictions and financial regulations. It is frequently observed in Asian economies that the company law or commercial code even stipulates how much corporate debt can be raised based on the magnitude of a company's net worth. In some economies, the minimum size of new debt issue is also stipulated, which effectively keeps small-size corporate borrowers out of the corporate bond markets. With a capital market functioning normally, financial leverage decision should be left with individual corporate issuers and underwriters. This is not something to be regulated by the government. The government, however, can improve the legal framework to define the priority of different types of creditors and quick litigation process related to corporate bankruptcy. The issues of corporate debt are usually required to be guaranteed by third party financial institutions (banks and securities companies) in Korea and Taipei, China. In 1997, as much as 85 percent of Korean corporate bonds are guaranteed. A financial institution guaranteeing an issue of corporate bond usually demands collateral of real estate from the issuer. If the issuer does not own real estate property, he must secure it first before he seeks the guarantee. It is interesting to note that the issuance of non-guaranteed bonds increased after the crisis for obvious

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<sup>13</sup> According to Lardy (1998), approximately 85 percent of total liabilities of SOEs are loans from the banking sector.

reasons. About 45-55 percent of the new issues since March 1998 have been non-guaranteed.

Regulatory Process: The third reason for discouraging the supply of fixed-income securities is related to the regulatory process. In Malaysia, the Banking and Financial Institution Act defines the issuance of bonds as a deposit-taking activity and, hence, prohibit the issuance of bonds without prior approval of the central bank (Bank Negara Malaysia). Therefore, all new issues of debt instruments must receive BNM approval and then apply for approval from the Securities Commission, a regulator over capital market. This dual process of approval frequently causes long delay, which in turn discourages local corporations from using capital market financing due to greater interest rate risk. Striving to be a prudent regulator of the banking sector, BNM uses this approval process to meet its broader monetary policy objectives. This policy has a stifling effect on the corporate debt market and raises further questions about the effectiveness of this BNM policy [Pardy (1998)] or the validity of BNM's role in approval of corporate bond issues [Shimomoto (1998)]. A similar difficulty of mixing approval decision on the issue of corporate debt and a broader economic policy objective is also observed in China. Bond issues by SOEs must be approved by the State Planning Council and local branch office of the People's Bank of China, the central bank. Centralized regulation, however, has not been necessarily successful [Nam, Park, and Kim (1998a)]. In the Philippines, the Securities and Exchange Commission's (SEC's) role in approving bond issues appears to go beyond that of a listing or issuing authority. It requires corporate issuers to satisfy certain financial ratios before approval is given. Wells (1998) points out that it should be the task of investors with the help of bond rating

agencies rather than SEC's responsibility. In Indonesia, those corporate bonds without a state bank guarantee are required to have a sinking fund. This sinking fund is not in the form of early redemption, but in the form of deposits retained by a designated state bank. The size of this fund may go up as high as 20 percent of the issue size, which adds additional cost to the issuer.<sup>14</sup>

Necessary reforms are being undertaken to eliminate legal restrictions that impeded the development of long-term bond markets in Thailand. For example, the central bank's requirements for commercial banks to hold government bonds or SOE bonds as a condition to opening new branches were eliminated. Also eliminated was the requirement of a minimum net worth of 500 million baht for companies to be eligible for issuing bonds [Werner (1998)].

### **Inadequate Infrastructure**

Further development and expansion of the fixed-income securities markets in the region require improvements in their infrastructure.

Competitive Auction System: China, Korea, Indonesia, and Thailand have yet to introduce a truly competitive auction system for government securities. Forced subscriptions, allocation scheme among underwriting syndicates, pre-set maximum yield, etc. must be eliminated to minimize any distortion to the term structure of interest rates. Hong Kong, Singapore, and Taipei, China have established the competitive auction systems with primary dealers participating. Korea attempted a competitive auction with some selected issues of monetary stabilization bonds, but it mostly relies on underwriting syndicates for the convenience of the allocation scheme.

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<sup>14</sup> See World Bank (1995).

Bond Rating Agencies: Although bond rating agencies now exist in most Asian economies, their credibility has been questioned as the financial crisis deepened. Credit rating agencies in Indonesia, Korea, Philippines, and Thailand have been heavily criticized for their inadequate evaluation process of the creditworthiness of the issuers. Hong Kong and Singapore do not have local bond rating agencies, while foreign agencies are allowed to enter the market with little entry barrier. Rating agencies in Indonesia, Malaysia, and Thailand experience serious setback as many domestic companies withdrew themselves from the rating maintenance program and the local debt markets became languid under high domestic interest rates.

Secondary Market Trading System and Clearing & Settlement: Secondary market trading of fixed-income securities differs from one country to another in the Asian region. Fixed-income securities are traded over-the-counter (OTC) in most Asian economies with the exception of China and Thailand.<sup>15</sup> With the exception of government-issued securities in Hong Kong, Singapore, and Taipei, China, the secondary markets for government and corporate bonds are illiquid. Thailand's Bond Dealing Centre (BDC) is a useful example in which OTC activities were formalized to facilitate NASDAQ-style quote-driven trading, listing, and surveillance activities. Before the BDC was created, secondary market trading of debt instruments on the Stock Exchange of Thailand was negligible. The BDC contributed significantly to the promotion of secondary market activities, which indicates that the creation of appropriate infrastructure can make a big difference in increasing market liquidity. For clearing and settlement, the BDC relies on the Stock Exchange of Thailand clearing and settlement system. Unlike clearing and

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<sup>15</sup> Many bonds are listed on the Exchange while traded on the OTC in Korea. One practical reason is that ITCs are allowed to purchase only listed bonds [Nam et al. (1998b)].

settlement systems in the equity market, very little has been done for the same in the fixed-income securities markets in the region.<sup>16</sup>

Contractual Savings Institutions: Unlike developed economies where contractual savings institutions represent a stable source of long-term capital and major institutional investors in capital markets, the developing Asian region has yet to further develop pension and/or provident funds, investment trust and mutual fund companies, and insurance companies to enhance their role in fixed-income securities markets. Pension reforms are being undertaken or under review in China, Hong Kong, China, Indonesia, Korea, Thailand, and Taipei,China. Without an expanded role of pension and provident funds, over 50 to 80 percent of total savings in Asia are invested in short-term savings vehicles offered by banking institutions or short-term instruments without being diverted into long-term investment assets. With the collapse of capital markets and the banking sector in the region, the fund management industry is experiencing a painful reform process. Large institutional investors in the Korean fixed-income securities market include: investment trust companies (ITCs)(33 percent), banks (32 percent), insurance companies (8 percent), and pension funds (3 percent). Total assets under the management of ITCs amounted to 102.6 trillion won at the end of 1997 or 14 percent of GDP. Approximately two-thirds of total assets are invested in fixed-income securities. Unfortunately, ITCs' capital base had been depleted down to negative 2.5 trillion won. With the mark-to-market rule enforced, the erosion of the capital base would have been much greater. Nam, et al. (1998b) cite two major reasons for the poor performance of the ITCs: (i) poor governance and management system; and (ii) government

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<sup>16</sup> See Rhee (1997) for risk management in clearing and settlement in the Asian and Pacific Region.

intervention. It is well-known that the Korean government frequently uses the ITCs as a vehicle for market stabilization and exert too much influence on their management. The collapse of a large regional investment trust company raised a serious questions about the soundness of China's non-bank financial institutions (especially trust and investment companies) that were created in late 1970s to attract foreign investment. While these trust and investment companies were successful in borrowing offshore funds, but their investment management must have been far below an acceptable level. The mutual fund industries in China, Indonesia, Malaysia, and Thailand must rebuild to strengthen the capital bases of individual funds and their capacity in risk management.

Interest Rate Hedging: Korea (1996), Malaysia (1995), and Taipei,China (1997) joined Hong Kong and Singapore by creating financial derivative markets. However, financial derivative instruments introduced in the region are mainly for hedging of equity investments via equity index futures. No hedging instruments for short- and long-term interest rates have been introduced yet.

**Table 1**  
**Bank Loans, Bonds and Equities in Selected Asian Countries**  
**(End of 1997)**

	Indonesia	S. Korea	Malaysia	Philippines	Thailand	US\$ billion PRC
GDP	134.27	248.25	71.25	61.34	102.17	903.07
Outstanding Bank Loans	80.82	118.17	117.27	43.83	128.26	965.19
as % of GDP	60.2	47.6	164.6	71.5	125.5	106.9
Outstanding Corporate Bonds	2.01	50.73	11.96	7.60	3.86	n.a.
as % of GDP	1.5	20.4	16.8	12.4	3.8	n.a.
Equity Market Capitalization	29.11	41.88	93.61	31.36	23.54	206.37
as % of GDP	21.7	16.9	131.4	51.1	23.0	22.9

Note: Year-end exchange rates are used for translation of local currency values.

Sources:

1. 1998 ADB Key Indicators of Developing Asian and Pacific Countries.
2. ADB: Studies on the Feasibility of Creating Mortgage-Backed Securities Markets in Selected Developing Member Countries (Unpublished).
3. ADB: Studies of Financial Markets of Selected Member Countries (Unpublished).
4. Central banks of member countries.

**Table 2**  
**Trading Value of Bonds and Equities**  
**(End of 1997)**

	Indonesia	S. Korea	Malaysia	Philippines	Thailand	US\$ billion PRC*
Outstanding Bonds	4.91	132.16	30.81	14.10	11.50	65.22
as % of GDP	3.7	53.2	43.2	23.0	11.3	7.2
Government	2.90	81.43	18.85	6.50	7.57	65.22
as % of GDP	2.2	32.8	26.5	10.6	7.4	7.2
Corporate	2.01	50.73	11.96	7.60	3.86	n.a.
as % of GDP	1.5	20.4	16.8	12.4	3.8	n.a.
Trading Value of Bonds	1.57	168.74	11.37	31.37	2.25	185.77
Turnover Ratio (%)	32.0	127.7	36.9	222.5	19.5	284.8
Equity Market Capitalization	29.11	41.88	93.61	31.36	23.54	206.37
Trading Value of Equity	41.65	170.24	147.04	19.78	23.12	369.57
Turnover Ratio (%)	143.1	406.5	157.1	63.1	98.2	179.1

\* Government bonds only

Note: Year-end exchange rates are used for translation of local currency values.

Sources:

1. 1998 ADB Key Indicators of Developing Asian and Pacific Countries.
2. ADB: Studies on the Feasibility of Creating Mortgage-Backed Securities Markets in Selected Developing Member Countries (Unpublished).
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