

The Structure and Characteristics of East Asian Bond Markets*

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I. Reality Check of Regional Bond Market Activities

The title of this paper was suggested in a proposal for the scope of the work to be undertaken by the Task Force on Regional Bond Markets of the PECC Finance Forum [Park (2003)]. I believe the term “East Asian Bond Markets” is used because East Asian economies are expected to play major roles in regional bond markets. Because its definition is elusive at best, I have to ask the question, “What is a regional bond market?” Is this a market geographically confined to the East-Asian region? Do issuers, buyers, underwriters, and market makers of these bonds all come from the same region? Are regional bonds to be denominated in one of Asia’s currencies or in a basket of Asian currencies? If they are denominated in the U.S. dollar or the euro, are they still classified as regional bonds? Do we expect regional bonds to be rated only by Asian rating agencies? Do we expect regional bonds to be traded only in the region? Finally, does it make sense to pursue a regional program when the global financial community is becoming more and more integrated?

Before we address these questions, a reality check is in order to make sure we have a comprehensive understanding of the current status of regional market activities.

Fact No. 1: McCauley et al. (2002) examined 71 bonds, with a combined face value of US\$41.2 billion, issued by Asian borrowers (banks, corporations, supranational, and sovereign/quasi-sovereign issuers) during the period between April 1999 and August 2002.¹ They report that 44%-46% of these bonds were purchased by Asian investors’ in the primary market offering. They further observe that: (i) Asian borrowers usually rely on affiliates of U.S. or European investment banking firms for book-running and assembling syndicates of underwriters; and (ii)

¹ Borrowers are from China, Hong Kong SAR, Indonesia, Korea, Malaysia, the Philippines, Singapore, and Taipei, China.

larger issues and longer maturities are placed outside the region. They conclude their paper by suggesting that the region's bond market activities are far more integrated than is often perceived.

Fact No. 2: Singapore is a small but important part of East-Asia's bond markets. The market activities of its on-shore market for Singapore dollar (S\$)-denominated bonds and off-shore market [known as the Asian Dollar Market (ADM)] for foreign currency-denominated bonds are useful in assessing the degree of the regional integration of financial transactions. Until August 1998, foreign institutions were not allowed to issue S\$-denominated bonds in Singapore due to the Monetary Authority of Singapore's position of discouraging the internationalization of S\$. However, to promote Singapore as a regional financial center, this policy was relaxed and foreign corporations were allowed to issue S\$-denominated bonds in Singapore on the condition that the proceeds were to be used for economic expenditure in Singapore; otherwise, the S\$ proceeds had to be swapped into a foreign currency in Singapore. After the policy change, the total issuance of S\$-bonds by foreign issuers increased to S\$2.70 billion in 1999, S\$2.57 billion in 2000, S\$1.83 billion in 2001, and S\$3.22 billion in 2002.² A total of 27% of the issuers were from the Asia-Pacific region, whereas the majority of foreign borrowers were from the United States and Europe.³ While the bulk of S\$ debt instruments issued by foreign borrowers were placed with onshore Singapore investors, the proportion of S\$ debt bought by offshore investors increased from 1% in 2001 to 10% in 2002.

[Insert Figures 1, 2, and 3]

The total amount of off-shore ADM debt issued in 2002 and 2001 amounted to US\$10.97 billion and US\$27.17 billion, respectively. At least 40% of the borrowers in the ADM market were financial institutions and corporations from the Asia-Pacific region. Approximately 92% of

² S\$-denominated bonds issued by domestic entities are not included in the statistics reported. S\$-denominated bonds issued by foreign entities usually account for 10%-20% of the total S\$-denominated debt market.

³ Refer to Monetary Authority of Singapore, 2003 Survey of the Singapore Corporate Debt Market.

non-S\$ debt was sold to offshore investors. All debt issues in the ADM market were private placements.⁴ U.S. dollars continued to dominate the ADM debt issues but its proportion of total amount of issuance declined from 92% in 2001 to 76% in 2002. Japanese yen and Hong Kong dollars followed with 15% and 6%, respectively. It appears that the ADM market functions as a short-term market (mostly less than one-year maturity) for Asian financial institutions.

[Insert Figures 4, 5, 6, & 7]

Fact No. 3: According to Park and Bae (2002), borrowers from six Asian countries (Indonesia, Korea, Malaysia, the Philippines, Taipei, China, and Thailand) raised US\$52.66 billion through bond financing outside their jurisdictions during the 11-year period, 1991-2001. U.S. and European investment banks served as lead managers for two-thirds of this amount and the remaining one-third was led by their Asian counterparts. The market share of Asian investment banks appears surprisingly large in view of the fact that 18 of the top 20 lead managers in the global investment banking business are U.S. or European banks.

Fact No. 4: In the East-Asian region, only Hong Kong and Singapore are open to international bond rating agencies without domestic counterparts. All other Asian economies, including Indonesia, Japan, Korea, Malaysia, the Philippines, Taipei, China, and Thailand have their own home-grown bond rating agencies. As illustrated in Table 1, the adoption of international accounting standards for listed companies' reporting has been done in most of Asian economies with the exception of China, Indonesia, and the Philippines.

[Insert Table 1]

Fact No. 5: The “*Shogun*” bond (foreign-currency-denominated bonds issued in Japan by foreign borrowers) market is Tokyo’s off-shore market, while the “*Samurai*” bond market (yen-denominated bonds issued in Japan by foreign borrowers) is the on-shore market. Unfortunately, “*Shogun*” bonds have not been issued since 1994. The issuance volume of “*Samurai*” bonds

⁴ No breakdown of Asian vs. non-Asian investors is reported by MAS.

peaked prior to the Asian financial crises in 1996 at ¥3.8 trillion. Following the Asian crisis, samurai bond volume declined to ¥0.15 trillion and ¥0.87 trillion in 1998 and 1999, respectively. In 2000, the market recovered and samurai bond issuance rose to ¥2.38 trillion, but was still below the pre-Asian crisis level seen in 1996. Despite the low interest rates in Japan, the issuance of samurai bonds was only ¥0.64 trillion in 2002.

[Insert Table 2]

Fact No. 6: Dragon bonds issued by international financial institutions such as the World Bank and the Asian Development Bank are not liquid on the secondary market. Asian financial institutions buy these bonds on the primary market to take advantage of the withholding tax exemption and usually hold the bonds until maturity, raising questions about their contributions to the development of the region's bond markets.

The findings of McCauley et al. (2002) and recent activities of Singapore's on- and off-shore bond markets indicate that Asian borrowers rely on U.S. and European investment banks to tap global financial markets (mostly in London and New York), but that at least 40% of these bonds end up in Asian portfolios. Why then is it so urgent to develop regional bond markets? I believe that this particular question cannot be separated from the definition of a regional bond market.

II. What Do We Mean by Regional Bond Markets?

The creation of a regional bond market became a popular subject of discussion among financial market policy makers after the East Asian financial crisis in 1997-1998. The single most dramatic element of the recent crisis was the abrupt reversal of private capital flows to the five crisis-affected economies (Indonesia, Korea, Malaysia, Philippines, and Thailand) within a span of several months. However, in retrospect, the amount of the reversal, slightly over US\$100 billion, was not too big for the region's economies as a group, to handle. This amount accounted for less than 5 percent of pre-crisis combined domestic savings of five crisis-affected economies and the five leading economies in the region (China, Hong Kong, Japan, Singapore, and Taiwan)

and only about 15 percent of the total foreign exchange reserves accumulated by these 10 economies. Now that the cumulated foreign exchange reserves in the region are approaching \$1.5 trillion or more than one-half of the world's foreign exchange reserves, the amount of the reversal, which triggered the 1997-1998 crisis, seems trivially small.

The region's policy makers realized that: (i) had these savings been channeled into corporate financing without relying on short-term bank financing from outside the region; and (ii) if only 15% of the cumulated reserves had been allocated toward the capital account crises, the consequences of the Asian financial crisis might have been far different. The first point on savings mobilization calls for the development of a well-functioning domestic bond market in each of Asia's economies, while the second point requires region-wide coordination to implement a system of establishing a pool of foreign exchange reserves available for an economy facing a similar capital account crisis.

Remarkable progress developing the infrastructure for primary and secondary bond markets has been made in each of the East-Asian economies since the 1997-1998 crisis. These developments are briefed with special focus on Hong Kong, Japan, and Singapore in Appendix I. The recent "Chiang Mai Initiative" proposed by ASEAN+3 finance ministers in Chiang Mai, Thailand, in May 2000 is a direct response to the call for the regional cooperation for the mobilization of foreign exchange reserves. Under this initiative, a series of bilateral currency swap arrangements among the ASEAN+3 countries is to be created, expanding smaller scale swap arrangements among ASEAN members. However, the efficacy of this initiative has yet to be tested because of the potential overlapping of IMF assistance programs: (i) the precondition for bilateral swap arrangements requires that the borrowing party should already be under the IMF assistance program or about to be under its program;⁵ and (ii) the policy of "strategic ambiguity" adopted by ASEAN+3 as well as by the IMF and the U.S. Treasury senior officials

⁵ Up to 10% of the pre-determined drawing amount could be disbursed without linkage to the IMF facilities for a pre-determined period, for example, 180 days.

makes it unclear about how ASEAN+3 swap arrangements and the IMF's supplemental reserve facility (SRF) would be coordinated.⁶ This uncertainty and opacity simply deepen the concerns about the potential "moral hazard" problem of the swap arrangements.

Where does the creation of a regional bond market fit in? We know that a regional market cannot substitute for a domestic bond market because a domestic bond market is one of three major vehicles for domestic savings mobilization in any country along with bank financing and equity financing. We also know that a regional bond market is one thing and a regional system of mobilizing foreign exchange reserves is another. Now we have to think about exactly what we mean by a regional bond market. From Figure 1, the narrowest definition of an East-Asian bond market is represented by the union of the three circles signifying Asian issuers, Asian investors, and Asian currencies. Figure 1 may be expanded to include another circle which denotes Asian investment banks. This produces an even narrower union of four circles. We may go one step further and require all bond financing activities occur in Asian financial centers. Does it make any sense to go for this kind of extreme regionalism? In reality, extreme regionalism may be gained at a substantial cost. In the worst possible scenario, any effort aimed at attaining extreme regionalism will simply force all financing activities to move outside the region for lower cost funding alternatives.

[Insert Figure 8]

As long as Asian borrowers issue bonds at a minimum cost and the majority of these bonds are purchased by Asian investors, allowing them to gain the maximum yield, all other considerations are secondary. It does not matter where these bonds are issued; who rates these bonds; who serves as the lead manager; where the bonds are traded; and where they are cleared and settled. Having said all this, the distinction between regional bonds and global bonds becomes either unimportant or irrelevant because Asian borrowers can issue bonds in New York

⁶ The SRF allows member countries to withdraw funds at a faster than usual pace at higher interest rates.

or Frankfurt that can be purchased by investors in Asia. However, I believe that two major considerations do stand out and make the distinction between regional and global markets meaningful: (i) credit enhancement program; and (ii) Asian common currency.

Credit enhancement programs are necessary to assist most Asian governments, semi-governmental agencies, and corporate issuers that have received relatively low credit ratings from international credit agencies so that they can issue bonds at an affordable cost if not at the minimum rate. However, only minimal efforts have been undertaken by the region's economies to implement credit enhancement programs to facilitate bond issuance by Asian borrowers.⁷ In a keynote address delivered at the ASEAN+3 Seminar on "Fostering Bond Markets in Asia," Taniguchi (2003) suggests that the Asian Development Bank (ADB) and the Japan Bank for International Cooperation (JBIC) provide credit guarantees to corporate and sovereign borrowers in Asia.⁸ In a parallel paper distributed at this Finance Forum Conference, Rhee and Stone (2003) propose that region-wide credit enhancement programs adopt the concept of municipal bond banks to gain the benefit of credit rating arbitrage and the economies of scale by pooling the funding needs of Asian borrowers.

The creation of an Asian common currency and its use in denominating regional bonds has been debated, but very little progress has been made. The most significant development in the launching of the euro has been the integration of European financial markets. A strong convergence of short-term interest rates quickly created a liquid money market for the entire euro zone, while longer-term bond markets in Europe have been exhibiting some degree of market integration, as indicated by the decline of interest rate spreads among the 11 participating

⁷ Under the New Miyazawa Initiative, at least a couple of measures were directly related to credit enhancement programs, including (i) support for Asian countries in raising funds from international financial markets through the use of guarantee mechanisms; and (ii) possible establishment of an international guarantee institution with a primary focus on Asian economies. Unfortunately, there has been little follow through on these programs.

⁸ ADB's current credit guarantee facilities are for project specific funding purposes and the though idea of JBIC's credit guarantee was floated in the New Miyazawa Initiative no progress has been made.

countries. The elimination of exchange risk, the harmonization of market practices, the redenomination of government debt into euro denominated debt have heralded the emergence of a bigger, deeper, more liquid, and more homogeneous bond market for Europe [Quaden (1999) and Duisenberg (1999)]. Similar advantages may be gained in Asia through full or partial currency unification as a result of common or partially shared monetary policies in the region's economies.⁹

III. Recent Proposals for Regional Bond Markets: Asian Bond Fund and Asian Basket Currency Bonds

With the region's combined foreign exchange reserves reaching \$1.5 trillion, the practical merits of diversifying the investment holdings of central banks in the region should be considered. At the end of March 2003, seven East-Asian economies (China, Hong Kong SAR, Japan, Korea, Singapore, Taipei, China, Thailand) were holding U.S. treasury securities in the amount of US\$662.20 billion or 20% of total outstanding treasury securities and one-half of total foreign holding of US treasury securities as illustrated in Table 3.¹⁰ This amount is approximately 40% of foreign exchange reserves accumulated in the East-Asian economies. The reserve holdings far exceed the requirements for exchange rate management or import coverage [Lim (2003)]. Two notable recent regional level efforts in this direction include: (i) Asian Bond Fund (ABF); and (ii) Asian Basket Currency (ABC) Bonds.

[Insert Table 3]

The Executives' Meeting of East Asia and Pacific Central Banks (EMEAP) announced in June 2003 the launching of the ABF with an initial size of US\$1 billion.¹¹ The ABF will invest in a basket of US dollar-denominated bonds issued by Asian sovereign and quasi-sovereign issuers

⁹ Refer to Jang et al. (2002) for the implications for launching the Asian common currency for the development of bond market.

¹⁰ Refer to <http://www.ustreas.gov/tic/mfh.txt>

¹¹ EMEAP Group's 11 members include: Australia, China, Hong Kong SAR, Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore, and Thailand.

in EMEAP countries except Japan, Australia, and New Zealand. The fund will be managed by the Bank for International Settlements (BIS). The EMEAP Group indicated that it would review the extension of the ABF concept to include bonds denominated in Asian currencies.

Ito (2003) proposes that the ABC Bond Corporation be established to serve as a depository for financial assets supplied by participating governments in the depository and to issue bonds that match the value of the assets.¹² The financial assets supplied by the participating governments are local currency-denominated government bonds. In the second phase of development, the ABC Bond Corporation may issue bonds that match the value of corporate bonds denominated in various Asian currencies. The ABC Bond Corporation would function like a special purpose vehicle (SPV) in an asset-backed securities scheme.

The concept of the ABC Bonds is simple because it borrows the idea of asset-backed securities and it is intuitively appealing because it may serve as the precursor to an Asian common currency. While the ABF simply serves as a buyer of U.S. dollar denominated bonds issued by regional borrowers using the funds pooled by the region's central banks, the ABC Bond Corporation serves as an issuer of bonds that match the value of underlying assets denominated in government bonds and denominated in various Asian currencies. When pooled, cash flows from pledged bonds (interest and scheduled repayment of principal) are distributed on a pro rata basis to the holders of the ABC bonds. The ABC Bonds Corporation is effectively issuing *pass-through securities*. Although underlying pledged bonds are guaranteed by the full faith of and credit of participating Asian governments, credit rating-related problem arise because not all governments enjoy the highest credit ratings from international rating agencies. Thus, credit enhancements will be needed even when government bonds are pledged. When corporate bonds are pledged as underlying assets, credit enhancements are a "must." Two types of credit enhancements are utilized: external enhancements and internal enhancements.

¹² Japan's Ministry of Finance also supports the idea of ABC bonds [Taniguchi (2003)].

[Insert Table 4]

External enhancements include: (i) third-party guarantees; (ii) letters of credit; and (iii) bond insurance. Third party guarantees may be provided by financial institutions of official status such as ADB, JBIC, or Development Bank of Singapore. Letters of credit may be provided by leading commercial banks of international stature. A number of monoline bond insurance companies are in operation in the United States and Europe, which offer municipal bond insurance and pool insurance.¹³

The most common form of internal enhancement is the creation of senior/subordinated structures of pooled cash flows of pledged assets.¹⁴ By restructuring the distribution of pooled cash flows, a new instrument called a *collateralized bond obligation* (CBO) is created.¹⁵ Under the CBO scheme, two *tranches* of ABC bonds may be issued based on a pre-determined subordination level: senior bonds with higher credit rating and subordinate bonds with lower credit rating but higher yields. This type of structured bond issue became very popular in Korea in the post-crisis period [Oh et al. (2003)].¹⁶

Although detailed *modus operandi* has yet to be designed for both ABF and ABC Bonds, I believe they represent a good beginning and should draw the attention of financial market policy

¹³ Recent communications with a leading municipal bond insurer, AMBAC, indicate that it has offices in London, Tokyo, and Sydney, offering complete regional coverage of structured deals (not municipal or government issues) outside the United States.

¹⁴ The creation of cash reserve funds or excess servicing spread accounts is also one of internal credit enhancement methods, but they are usually combined with external enhancement programs such as letters of credit and third party guarantees [Fabozzi, et al. (1997)].

¹⁵ The CBOs are the same as collateralized mortgage obligations (CMOs) that were introduced by the Federal Home Loan Mortgage Corporation (Freddie Mae) in 1983 to expand the mortgage-backed securities markets in the United States. The original form of CMOs was *sequential-pay* tranches that effectively created CMOs with different maturities to appeal to institutional investors who have preference to instruments of differing maturities.

¹⁶ One caveat is in order. Credit risk is simply reallocated between two tranches of ABC bonds, but it is neither reduced or eliminated. As we witnessed in the recent credit card industry crisis in Korea, the CBO schemes backfired to create potential financial risk in systemic proportion, which forced the Korean government to bail out the industry in April 2003.

makers in the East-Asian region to the need for credit enhancement programs and for an Asian common currency. Another critical aspect which has often been overlooked is the liquidity of bonds on the secondary market. Neither proposal can say much about the question of market liquidity. With the ABF serving as an investment vehicle for the region's central banks, its immediate impact will be realized in the form of the increased demand for bonds issued by Asian borrowers. The BIS, as an investment manager of ABF, may end up purchasing U.S. dollar-denominated bonds issued by Asian sovereign or quasi-government authorities in New York, London or Singapore's ADM market. Expected purchasers of the ABC bonds include central banks and pension funds from the region and institutional investors of the region as well from the advanced economies. Since central banks and pension funds are known for passive investment strategies, both ABC bonds and ABF-invested bonds may not be instrumental in promoting market liquidity on the secondary market.

IV. Conclusion

The creation of a regional bond market in the East-Asian region can be justified for two reasons: (i) facilitation of credit enhancements for sovereign, quasi-sovereign, municipal, and corporate borrowers; and (ii) introduction of an Asian common currency. Without the two critical components, any efforts driven by extreme regionalism are counterproductive and too costly to be rewarded in the global financial environment. It is indeed impossible to create primary and secondary market financial activities confined to the East-Asian region. It is also wasteful to have only Asian home-grown rating agencies provide rating services for bond instruments issued by Asian borrowers.

APPENDIX I: Reforms for the Development of Domestic Bond Market

With the banking sector still recovering from the recent crisis, Asian corporations became less dependent on bank loans for funding and turned increasingly to capital market financing, establishing capital market reforms as an urgent policy agenda for the region's economies. Policy makers in these economies recognized that an active market in government-issued securities must precede the development in a corporate bond market. Many Asian economies began to accept fiscal deficits as a necessary change to finance bank restructuring and expansionary fiscal policy to cope with economic recession. Therefore, Asian economies have been reinforcing or creating market infrastructures to develop domestic government and corporate bond markets, forming a much-needed groundwork for regional bond markets.¹⁷

Benchmark Interest Rates: The region's economies demonstrated progressive changes toward creating their benchmark yield curves. Traditionally, the lack of benchmark interest rates has been a major impediment to efficient pricing of financial assets and marking-to-market. For example, Korea introduced a set of post-crisis reform measures, including: (i) consolidation of government-issued securities into Treasury bonds to improve the issue frequency and issue size; (ii) creation of the primary dealer system; and (iii) elimination of arbitrary cut-off in determining winning bids in competitive auctions of government securities.¹⁸ Hong Kong, Malaysia, Philippines, Singapore, Taiwan, and Thailand have also been concentrating on the improvement of benchmark yield curve either by extending maturities or by allowing the re-opening of off-the-run issues to smooth out the benchmark yield curves.¹⁹ Artificial demand for government-issued

¹⁷ For an overview of capital market reforms in the region, refer to Rhee (2000).

¹⁸ Refer to Korea Securities Research Institute (2000).

¹⁹ Regular issuance of Exchange Fund papers in Hong Kong was substantially curtailed as of September 1998 to ensure that new issues of Exchange Fund Bills and Notes are fully backed by foreign reserves, in accordance with the discipline of the Currency Board system except when there are significant inflows of funds. Beginning in June 1999, the HKMA resumed issuance of 10-year Exchange Fund Notes.

securities under regulatory or statutory requirements was relaxed to minimize distortions to the benchmark yield curve. As a result, the captive nature of primary market activities has become less severe than in the past.

Expanding the Investor Base: Also observed in the region are some positive developments toward expanding the investor base for fixed-income securities. The Philippines introduced a small denomination Treasury bonds program for individual investors to trade such bonds on the local stock exchange. In Hong Kong, Exchange Fund Notes were listed on the stock exchange since August 1999 to accommodate retail investors' demand for risk-free securities. In the past, individual investors were not eligible for direct purchasing of government bonds on the primary market in Korea; but they are now qualified to participate in non-competitive auctions. As such, a total of 20% of each primary issue is reserved for individual investors in Korea. In March 2003, Japan launched government bonds tailored for individual investors.²⁰ Unlike conventional Japanese Government bonds (JGBs), these bonds are redeemable one year after the issuance and their minimum denomination is ¥10,000 with a 10-year maturity. They carry a floating-rate which fluctuates with the real rate of interest on a semi-annual basis. To promote JGB holdings by non-financial companies, those companies with capitalization of ¥100 million or more will be exempted from withholding tax on the interest income from JGBs. Hong Kong launched a Mandatory Provident Fund to increase the demand for local long-term fixed-income securities by approximately 1% of GDP per year consecutively for six years. Korea recently allowed bank trust accounts to sell employee retirement trusts. This represents a first step toward the corporate pension system.

Increasing Supply of Quality Bonds: On the supply-side of public bonds, positive developments are observed in the region. Singapore's statutory boards never issued their bonds in the past

Simultaneously, the HKMA reduced the issue size of short term Exchange Fund Bills by the same amount, thereby leaving the overall size of the Exchange Fund Bills and Notes portfolio intact.

²⁰ As of December 2002, JGBs held by household accounted for 2.4% of total outstanding volume.

because they had immediate access to government budget or commercial bank loans. With the change of this policy in the fourth quarter of 1998, numerous government agencies began issuing long-term bonds. Thailand's state-owned enterprises became major suppliers of high-quality bonds (almost 90% of their bonds are issued under the government's guarantee), accounting for slightly over one-third of Thai public sector bonds. The Malaysian government, on the other hand, recently proposed the establishment of a financial guarantee insurer to facilitate the issuance of corporate bonds with credit enhancement.

Improving Market Infrastructure: A remarkable progress transpired by the region's economies within the last two years has been made to either newly create or reinforce market infrastructures in the primary and secondary markets for government bonds. Within the primary markets, competitive auctions became the norm as well as foreign banks and financial institutions began participating in public auctions as primary dealers. To improve the efficiency of tendering and reduce any delays, electronic bidding systems were introduced in Malaysia, Philippines, and Korea. In order to promote competition among credit rating businesses, Indonesia, Malaysia, and Thailand allowed the establishment of second rating agencies; whereas, market entry is permitted to foreign rating agencies with minimal entry barriers in Hong Kong and Singapore. Furthermore, Hong Kong, Indonesia, Malaysia, Singapore, and Thailand introduced a real time gross settlement (RTGS) system for government-issued securities, while corporate bonds need to advance toward the level of progress achieved by government bonds. Korea, Taiwan, and Thailand are revamping their systems. Taiwan implemented a book-entry system for scripless trading in 1998 and all book-entry government bonds are settled through the RTGS system. Japan finally introduced a new scripless settlement system for government bonds in January 2003.²¹ Although fixed-income securities are usually traded over-the-counter (OTC) in the region, organized exchanges in Korea, Thailand, and Indonesia have been creating their own

²¹ Scripless settlement for corporate bonds has yet to be implemented in Japan.

trading systems to capture some of OTC trading volume. The Central Moneymarket Unit (CMU) service was extended in Hong Kong SAR to non-HK\$ debt securities since 1996 and the linkage of CMU with other central securities depositories in the region through a network of bilateral arrangements. Another important infrastructure project which was fully implemented in December 2000 is the US Dollar Clearing System. The system facilitates the efficient settlement of US dollar transactions in Hong Kong and the region and eliminate the settlement risks that arises when a transaction is spread across different time zones. With the Hongkong and Shanghai Banking Corporation Limited designated as the settlement institution, the system was implemented in three phases: (i) the first phase covering the US dollar RTGS system; (ii) the second phase facilitating payment versus payment (PvP) settlement for foreign exchange transactions between US dollar and Hong Kong dollar; and (iii) the third phase implementing an interface between the US dollar RTGS system and the Central Moneymarkets Unit (CMU).²² Through the operation of the Singapore Automated Clearing House (SACH), both S\$- and US\$-denominated checks are cleared in Singapore. Launched in July 1998, the MAS Electronic Payment System (MEPS) settles scripless Singapore government securities on a RTGS basis. With its interface to the Central Depository of the Singapore Exchange, it provides for the settlement of S\$ debt securities on a DvP basis.

²² With this System completed, US dollar checks are now settled in two days, which used to take two weeks. Refer to <http://www.info.gov.hk/hkma>.

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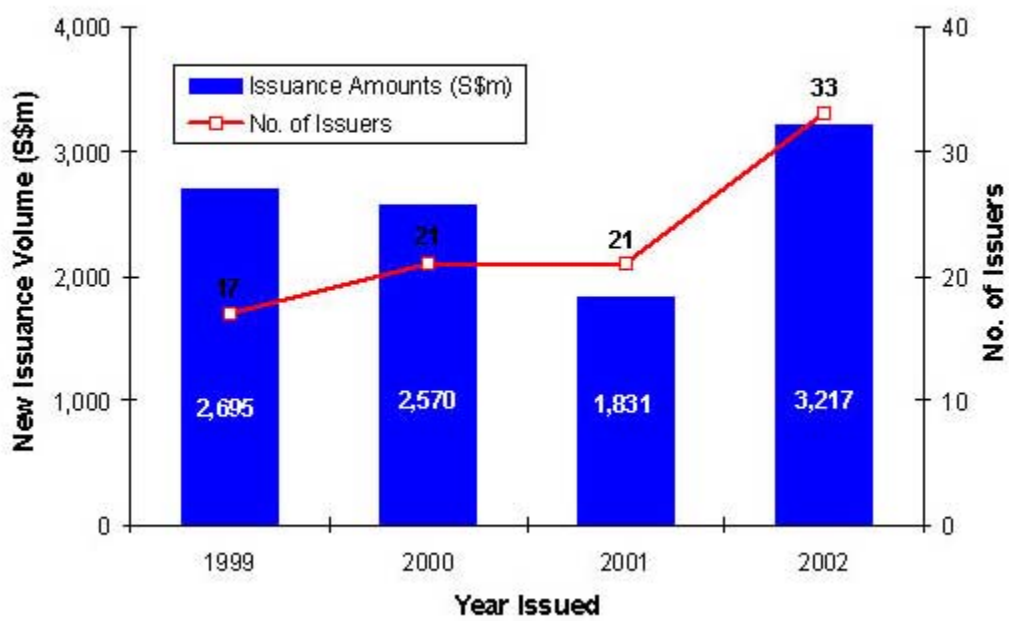


Figure 1
New Issues of S\$ Bond by Foreign Entities

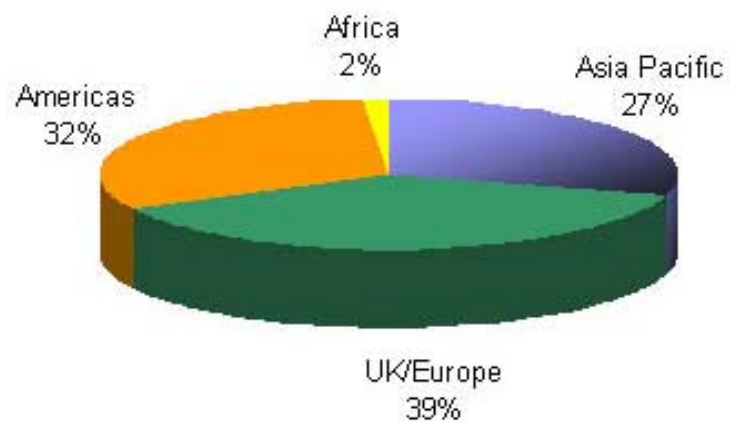


Figure 2
Geographical Distribution of Foreign Issuers:
S\$ Bond

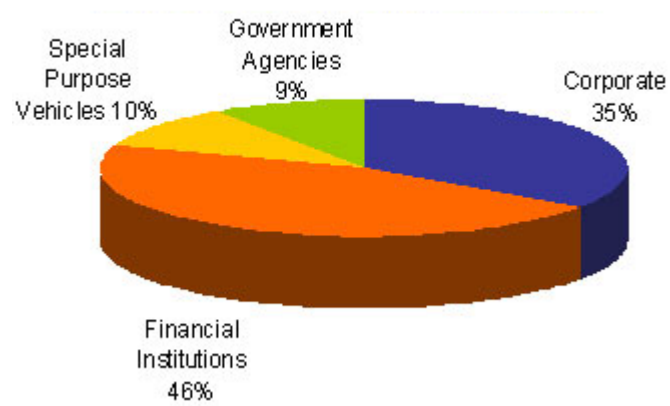


Figure 3
Types of Foreign Issuers of S\$ Bond

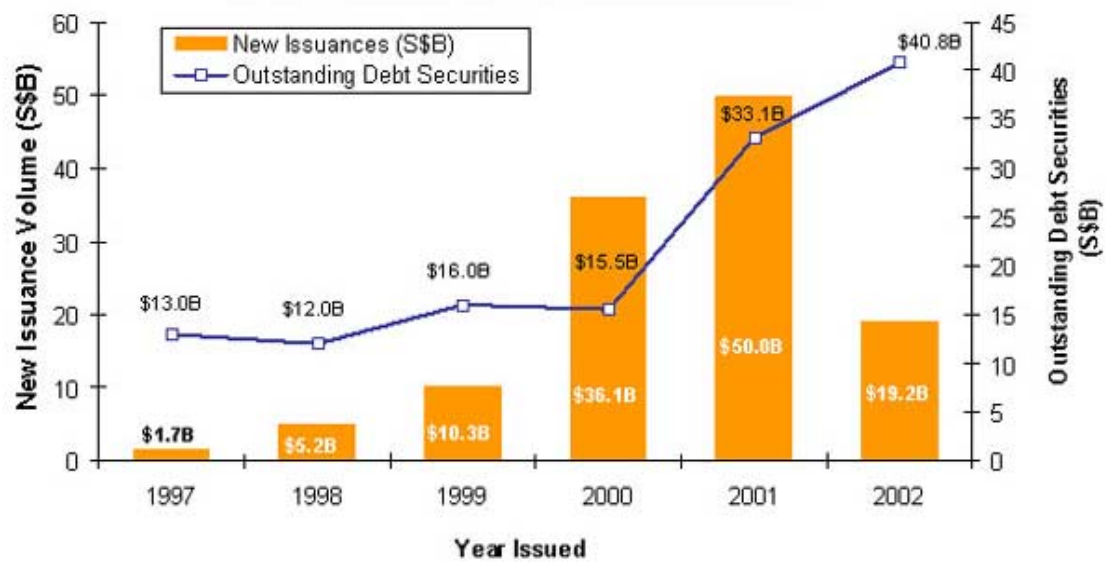


Figure 4
Non-S\$ Bond Issuance

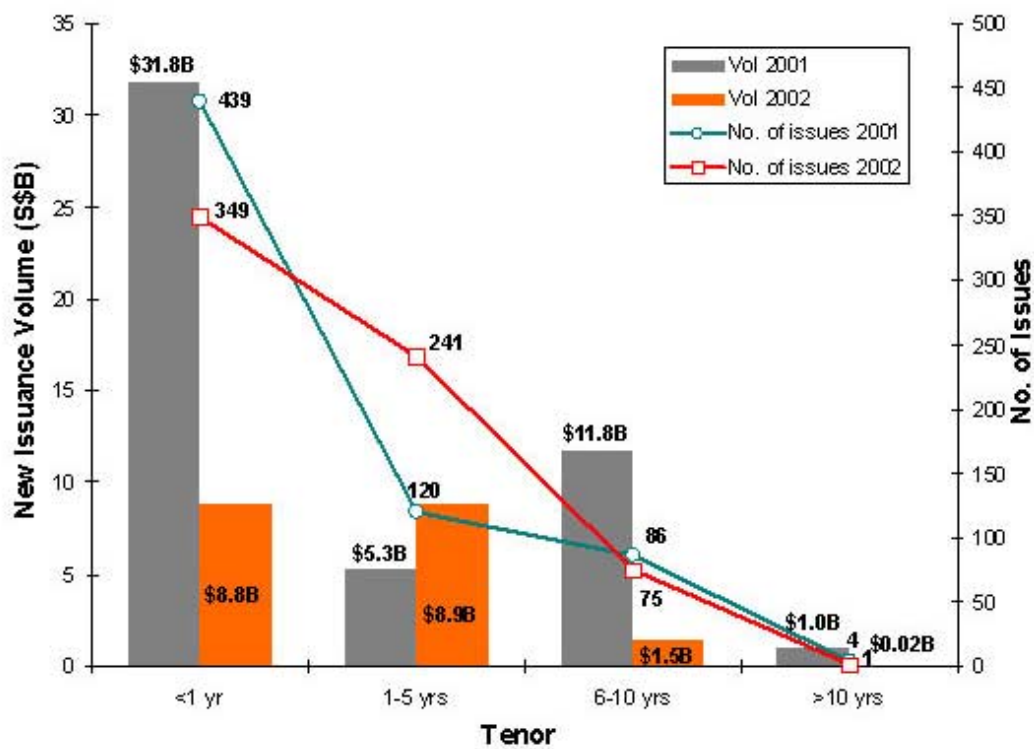


Figure 5
Non-S\$ Bond Issues by Maturity

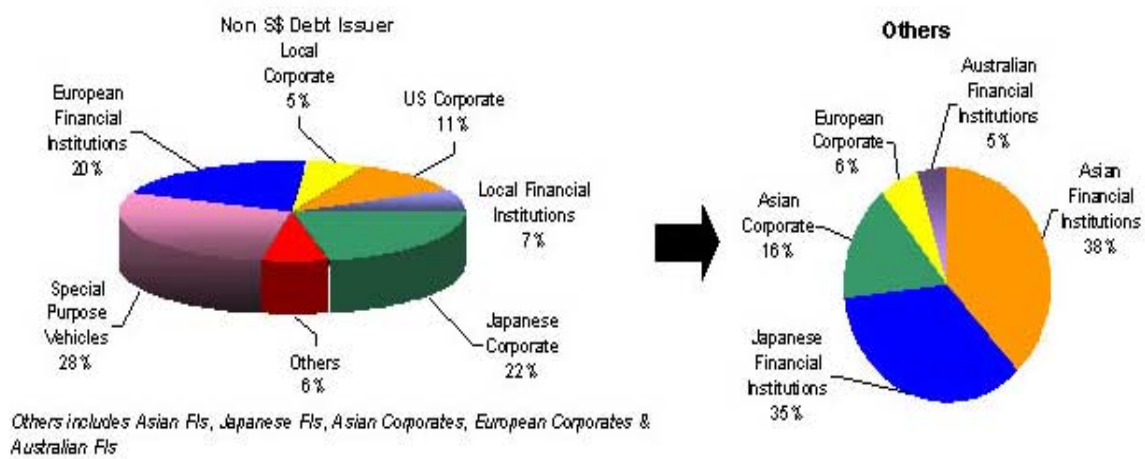


Figure 6
Types and Geographical Distribution of
Non-S\$ Issuers

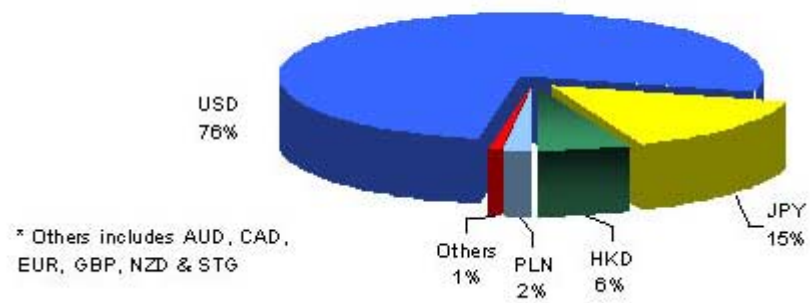


Figure 7
Currency Denomination of Non-S\$ Bond

Figure 8
Regional Bond Market

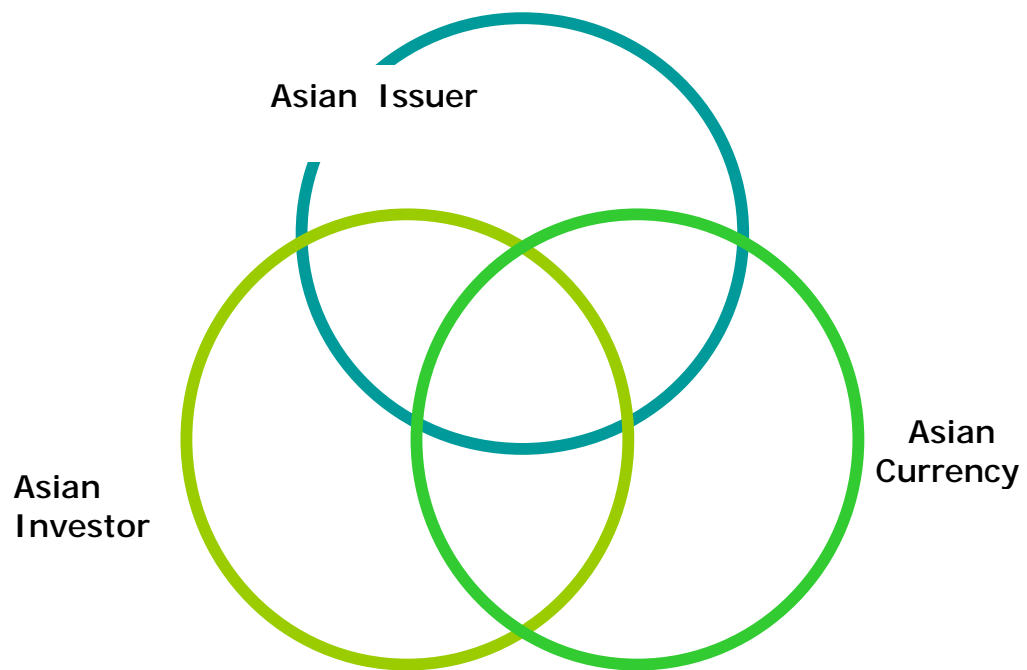


Table 1
Regional Bond Rating Agencies

<u>Country</u>	<u>Number of Domestic Credit Rating Agencies</u>	<u>Adoption of IAS Statements by SEs</u>
Australia	Open to Global CRAs	Yes
China	none	No
Hong Kong SAR	Open to Global CRAs	Yes
Indonesia	2	No
Japan	3	Yes
Korea	3	Yes
Malaysia	2	Yes
Philippines	1	No
Singapore	Open to Global CRAs	Yes
Taipei,China	1	Yes
Thailand	2	Yes

Table 2
Gaisai Bond Issues

Unit: ¥ trillion

<u>Year</u>	<u>Number of Issues</u>	<u>Samurai Bonds</u>	<u>Number of Issues</u>	<u>Shogun Bonds</u>
1991	27	0.71	1	0.41
1992	37	1.57	0	0
1993	49	1.23	1	0.59
1994	60	1.26	0	0
1995	85	2.11	0	0
1996	154	3.79	0	0
1997	66	1.58	0	0
1998	10	0.15	0	0
1999	24	0.87	0	0
2000	63	2.38	0	0
2001	47	1.55	0	0
2002	29	0.64	0	0

Source: Japan Securities Dealers Association

Table 3
Foreign Holders of U.S. Treasury Securities

Unit: US \$ billion

Economy	March 2003	December 2002	December 2001
Japan	386.6	364.7	317.9
China	117.7	102.9	78.6
Hong Kong SAR	49.8	48.1	47.7
Korea	41.8	43.1	32.8
Taipei, China	34.5	34.5	35.3
Singapore	18.5	17.8	20.0
Thailand	13.3	16.3	15.7
Total (Asia)	662.2	627.6	521.3
Total (Foreign)	1,242.5	1,204.5	1,040.1

Source: Department of the Treasury/Federal Reserve Board
[Http://www.ustreas.gov/tic/mfh.txt](http://www.ustreas.gov/tic/mfh.txt)

Table 4
Sovereign Credit Rating
(June 2003)

Economy	Local Currency	Foreign Currency
China	---	BBB
Hong Kong SAR	AA-	A+
India	BB+	BBB
Indonesia	BB+	B-
Korea	A+	A-
Malaysia	A+	BBB+
Mongolia	B	B
Philippines	BBB	BB
Singapore	AAA	AAA
Taipei,China	AA-	AA-
Thailand	A-	BBB
Vietnam	BB	BB

Source: Standard & Poor's