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Foreign Bond Markets and Financial Market Development: International Perspectives

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Abstract

The domestic bond markets of the Asia and Pacific region have grown considerably since the Asian financial crisis of 1997, although they remain undeveloped relative to the region's weight in the world economy. This paper proposes that in order to encourage further development of these markets, regulators should make them more accessible to foreign borrowers.

To that end we offer insights into the nature and mechanics of foreign bond issuance by investigating the key characteristics of 3,132 foreign bonds issued in 14 countries (other than the United States) between July 1928 and June 2009. We found that the foreign borrowers that tap domestic markets are overwhelmingly of high credit quality and comprise sovereigns, supranationals, and major financial institutions. There is a preference for simple fixed-rate payment structures, which can then be swapped into the currency and coupon type of choice using currency and interest rate derivatives.

On the whole, the long-term viability of foreign bond markets appears linked to the presence of highly liquid foreign exchange and derivatives markets that facilitate risk management and transformation, enabling regulation that facilitates cooperation with market participants, the presence of benchmark issues, and competitive pricing between alternate market segments.

JEL Classification: F34, G18, O57

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“On the way to promote local corporate bond markets, policymakers in some Asian countries must overcome the following fundamental difficulties: central planning strategy dominates the local economies; policy instability in local authorities; conservative investment philosophy and high saving rates; restriction to foreign issuers entering the domestic market; limited flow and transparency of timely information.”

Zhou Xiaochuan, Governor of the People's Bank of China, at the Bank for International Settlements (BIS) and People's Bank of China (PBC) seminar on “Developing Corporate Bond Markets in Asia” held in Kunming, People's Republic of China on 17–18 November 2005.

1. INTRODUCTION

A key aspect of financial market reform following the 1997 Asian financial crisis was the development of national and regional bond markets as an alternative to bank financing.¹ It was hoped that the development of alternative financial markets could provide a means of avoiding the “double mismatch” of currency and maturity in the balance sheets of local corporations (e.g., Tan, Karigane, and Yoshitomi 2001). Initially, attention was paid to markets where governments issued and traded and subsequently to markets where industrial and financial corporations issued and traded (e.g., Schinasi and Todd Smith 1998; Kim 1999; Batten and Kim 2001).

Academic attention and discussion by policymakers and practitioners has centered on an extensive range of regulatory and infrastructure initiatives that involve: improving regulation and the rule of law; enhancing financial market transparency; providing stronger investor protections and rights; improving clearing system performance and the reputation of local rating agencies; and providing the necessary stable macroeconomic policies to encourage investment. Recent policies that have been adopted include: the Asian Bond Market Initiative; the formation of the Asian Bond Fund; specific local market deregulation aimed at improving institutions; and proposals to enhance foreign participation by both investors and issuers in local markets.²

The objective of this paper is to add to the discussion of foreign participation by investigating the contribution it makes to domestic bond markets. We focus on foreign participants as issuers, adding to the existing literature that investigated their role as investors (Bae, Yun, and Bailey 2006). It is important to note that both foreign issuers and investors assume foreign exchange and possibly interest rate (maturity) risk as a result of these investments or liabilities. Despite some reservations arising from the level of risk management infrastructure present in the Asia and Pacific region, we argue that this largely overlooked segment is the best prospect to elevate regional and domestic bond markets to the global plane advocated by McCauley and Park (2006).

Previous literature that provided blueprints for bond market reform generally focused on two key aspects of market development: facilitating the demand and supply of bond issues; and overcoming the structural impediments, such as the absence of financial market technology, that may impede the development agenda (e.g., Walter 1993; Schinasi and Todd Smith 1998; Kim 1999; Rhee 2000; Lejot, Arner, and Qiao 2006; Rhee 2004; Park and Park 2005; Arner, LeJot, and Rhee 2006). While governments and local corporations have typically supplied new bonds, in some markets international organizations have also been involved. These non-resident bond issues in a domestic bond market are termed foreign bonds, and

¹ Post-crisis many Asia-Pacific governments specifically set about developing local and regional bond markets as an alternative to traditional forms of intermediated (bank) financing (see Kim 1999; Rhee, 2000; Thompson and Poon 2000; Park and Park 2005; Arner, LeJot, and Rhee 2006).

² See Appendix 1 for a more detailed description of the Asian Bond Market Initiative and the Asian Bond Fund.

their issuance has been linked to the long-term development of these markets (Hoschka 2005; Inoguchi 2007).

The development of a foreign bond market is consistent with the three tiered bond market described by McCauley and Park (2006): first, there is a series of domestic markets in which domestic investors provide funds to domestic issuers; second, a regional bond market denominated in regional currencies with regional investors and issuers; and third, a global market in which a region's borrowers and possibly investors are minor players. Therefore the ultimate objective when developing a national bond market should be integration into a global securities market (Batten and Szilagyi 2007). In turn a regional bond market would compete with the alternative funding and investment opportunities provided by banks individually, or as syndicates, and existing debt securities, such as Eurobonds and other foreign bonds offered in large financial markets, such as those present in Japan or the United States (US).

In this paper we add to earlier country level analyses of the enabling role of foreign participation in bond market development (e.g., Batten and Szilagyi [2007] and Batten, Hogan, and Szilagyi [2009] considered markets in the Republic of Korea [hereafter Korea] and Australia, examining factors that have facilitated non-resident involvement in other financial markets and identifying impediments that may prevent application of these same factors to other local market segments, notably the corporate bond market. Our perspective includes all key foreign bond markets other than those in the US, whose scale and institutional environment warrants separate analysis. Particular attention is paid to the enabling role of supranational corporations, such as the World Bank, in facilitating corporate bond market development. Thus we also add to the analysis of Hoschka (2005) and Inoguchi (2007), which discussed the importance of multilateral development banks, especially the Asian Development Bank (ADB), to helping expand nascent bond markets.

Using information from the Thompson Reuters Fixed Income (RFI) Database on 3,132 foreign bonds issued in 14 different markets since 1928, we offer insights into the scale and scope of this segment with particular attention paid to the characteristics of issuers. Overwhelmingly, this market consists of sovereign, supranational, and major international bank issuers with high credit quality. Although there is a significant corporate presence, usually by non-bank financial institutions, issuance by this sector tends to have a shorter maturity and generally carries lower credit ratings. Local institutional investors appear to have a preference for simple fixed-rate coupons, which can then be swapped using foreign exchange and interest rate derivatives into the currency and coupon type of choice. Pricing and arbitrage between alternate products are therefore important drivers of foreign bond issuance.

The long-term viability of this segment appears linked to the presence of: highly liquid foreign exchange and derivatives markets that facilitate risk management and transformation; regulation that facilitates cooperation with market participants; and benchmark issues and competitive pricing between markets. This analysis will be of interest and value to those nations undertaking financial market reform to develop domestic markets or provide alternative funding mechanisms through improving issuance by domestic corporations in international bond markets (Jiang and McCauley 2004).

The paper is structured as follows: (i) we provide a brief background on recent developments in international banking, international debt securities and syndicated loan markets with an emphasis on the implications that changes in the scale and scope of these markets may have for domestic bond market development in the Asia and Pacific region (ii) we focus on key trends in the bond markets of the Asia and Pacific region (iii) we provide a detailed perspective on the characteristics of international issuers in foreign bond markets and discuss the implications of these characteristics (iv) we highlight policy recommendations that must be undertaken to further develop foreign bond markets in the Asia and Pacific region and elsewhere.

2. INTERNATIONAL DEVELOPMENTS

Although bond markets in the Asia and Pacific region have had some successes they remain underdeveloped compared to the size of the region's economies. Thus, despite roadmaps to develop bond markets being adopted at the highest level of government (e.g., Lejot, Arner, and Liu 2006), and extensive policy reforms (e.g., Leung 2006), the "missing market" described by Herring and Chatusripitak (2000) remains.

Recent developments in international banking and international securities markets reported in data from the Bank for International Settlements (BIS) offer explanations to the possible reasons for and consequences of the underdevelopment (BIS 2009). According to data from banks reporting to the BIS,³ total lending in all markets covered increased 194% to US\$24.5 trillion, (falling slightly during the 2007–2008 crisis period), whereas lending to developing economies increased 157.8% to US\$1.9 trillion. Lending to economies in the Asia and Pacific region grew slightly less at 153% to US\$608 billion, though it suffered a large decrease from 1995–2000 (31.9%) due to the Asian financial crisis of 1997.⁴ In addition, while the Asia and Pacific region had the highest level of bank loans outstanding in 2007, lending to the region decreased 3.6% during the financial crisis of 2007–2008, whereas lending to other regions, especially Europe, increased.

BIS data on bank deposits are also enlightening (BIS 2009). Of the developing regions that reported, it is not surprising that Africa and Middle-East (which includes key oil rich nations) provided the most deposits to banks in 2007 at US\$867 billion, although the Asia and Pacific region was a close second at US\$832 billion. Within the Asia and Pacific region, the People's Republic of China (PRC) and Taipei,China provided nearly US\$444 billion in deposits in 2008, which combined with the totals from Hong Kong, China and Singapore total US\$1.36 trillion, almost twice that of deposits from Japan (US\$769 billion).

However, it is the net positions from BIS data that are of most interest to the current discussion on the scale and scope of the Asia and Pacific region's bond markets. In 2008, Australia was an important net recipient⁵ of bank lending at US\$50.1 billion, as was India (US\$78.8 billion), Indonesia (US\$39.4 billion), and Korea (US\$74.3 billion). However, overall, the region reported deficits of US\$68.7 billion. In 2007, the net deficit was a staggering US\$223.2 billion, with largest deficits coming from the PRC and Taipei,China. Notably, Japan changed from a net receiver of funds in 1995 (US\$229.7 billion) to a net lender of funds in 2008 (US\$234.9 billion).

Overall, international bank lending to developing Asia remains below lending to other regions, especially compared to lending to developing Europe. At the same time, regional deposits with banks in developing Asia have exceeded loans during 2000–2008. Thus, savings from the Asia and Pacific region continue to support international bank lending, despite regional policymakers' efforts to direct these funds for regional economic and infrastructure development.

The promotion of regional bond markets and the development of domestic corporate and foreign bond markets is not inconsistent with improving access to international debt markets through syndicated bank loans or international bond issues (such as Eurobonds). Chakraborty and Ray (2006) and others recommended a two-tiered approach to financial market development with complementary bank and bond market reform as the best strategy for long-term economic development. The International Monetary Fund (2005) and Burger

³ In the data used for this study central banks in 42 of the major developed and developing economies reported their aggregate national locational data to the BIS. For more details see: <http://www.bis.org/statistics/bankstats.htm>.

⁴ Note these totals do not include contributions from Singapore and Hong Kong, China due to their status as financial centers.

⁵ That is lending to the bank via deposits exceeded loans made from the banks.

and Warnock (2006a, 2006b) mentioned that necessary financial market reform would provide improved services, more efficient financial and legal institutions, better protection for investors, and sound fiscal and monetary policy management by government, which would benefit both bond market development and improve access to international investment or lending.

When considering the direction of international lending to the Asia and Pacific region in the form of international securities or syndicated loans, it is useful to note that issues all of the markets covered by the BIS grew 250% over 2000–2008 to US\$23.9 trillion (BIS 2009). For the first time, this sum exceeded international bank lending, which was US\$22.5 trillion. This suggests a global trend towards disintermediation, which may have been accelerated by the 2007–2008 financial crisis. Apart from the US and the United Kingdom (UK) which issued 37% of the total international debt securities in 2008, the important issuers were in the Asia and Pacific region: Australia with US\$468 billion; Japan with US\$398 billion; and Korea with US\$109 billion.

Sums reported for syndicated loans were much less. From 2007–2008, syndicated loans fell 55% to US\$297 billion, highlighting the fact that these markets (whose loans tend to be based on the London Interbank Offered Rate (LIBOR)) were particularly affected during the financial crisis. During the same time, syndicated lending in the Asia and Pacific region fell by 65.4% to only US\$13.7 billion, with Korea experiencing the largest reduction (86.9% to just US\$1.6 billion). Reductions of this magnitude last occurred during the Asian financial crisis of 1997 and highlight the implications of dependency on bank based lending.

Comparing these data also highlights the beginnings of disintermediation with new lending in the Asia and Pacific region favoring international securities issues over syndicated and direct bank lending. This is consistent with the region's issuers developing since the Asian financial crisis of 1997, as local corporations are more prepared meet information disclosure requirements demanded by international investors. Issuers also need to comply with International Accounting Standards and obtain credit ratings. Nonetheless, much more needs to be done to ensure continued financial stability and successful participation in global markets by the region's major economies (e.g., Blommestein and Santiso 2007; Tovar and Quispe-Agnoli 2008).

3. DOMESTIC BOND MARKETS IN THE ASIA AND PACIFIC REGION

Table 1 shows the growth of domestic bond markets from 1995–2008 using BIS data on domestic bonds outstanding in 20 markets. The top panel provides data from 10 key developed countries, and the bottom panel provides data from the 10 countries in the Asia and Pacific region that report to the BIS.

The last row shows that the Asia and Pacific region's share of the total domestic bonds outstanding in all markets covered by the BIS was 2.7% in 1995 and 7.2% in 2008. Total domestic bonds outstanding in the Asia and Pacific region grew from US\$656.6 billion in 1995 to US\$4,3 trillion in 2008, reflecting the development of the PRC's domestic bond market over the period, which grew more than any other market. The PRC had a 51.4% share of the Asia and Pacific region's domestic bonds outstanding, with a market size comparable to France and almost twice that of Canada and the UK.

Table 1: Total Domestic Bonds Outstanding in Key Developed and Asia and Pacific Region Markets (billions of US\$)

| | Total Domestic Bonds Outstanding ^a | | | | % Change | | |
|--------------------------|---|-----------------|-----------------|-----------------|--------------|--------------|------------|
| | 1995 | 2000 | 2007 | 2008 | 1995–2000 | 2000–2007 | 2007–2008 |
| Developed Markets | | | | | | | |
| Australia | 221.5 | 217.3 | 806.9 | 637.4 | -1.9 | 193.4 | -21.0 |
| Canada | 580.6 | 662.2 | 1,206.3 | 1,034.5 | 14.1 | 56.2 | -14.2 |
| France | 1,338.1 | 1,125.2 | 2,817.4 | 2,921.1 | -15.9 | 159.6 | 3.7 |
| Italy | 1,523.7 | 1,327.8 | 3,039.4 | 3,261.8 | -12.9 | 145.6 | 7.3 |
| Germany | 1,922.5 | 1,715.7 | 2,634.4 | 2,592.8 | -10.8 | 51.1 | -1.6 |
| Japan | 4,648.6 | 5,701.9 | 8,855.7 | 11,076.8 | 22.7 | 94.3 | 25.1 |
| New Zealand | 19.8 | 14.2 | 23.5 | 18.3 | -28.0 | 28.6 | -22.3 |
| Switzerland | 225.1 | 157.7 | 242.8 | 259.0 | -29.9 | 64.2 | 6.7 |
| UK | 564.6 | 688.3 | 1,359.0 | 1,223.2 | 21.9 | 77.7 | -10.0 |
| US | 10,209.1 | 13,738.2 | 23,303.6 | 24,621.6 | 34.6 | 79.2 | 5.7 |
| Asia-Pacific | | | | | | | |
| PRC | 46.6 | 202.3 | 1,687.3 | 2,209.5 | 334.1 | 992.1 | 31.0 |
| Taipei, China | 85.7 | 123.1 | 199.4 | 205.7 | 43.6 | 67.1 | 3.2 |
| Hong Kong, China | 23.8 | 44.1 | 51.4 | 50.2 | 84.9 | 14.0 | -2.3 |
| India | 70.6 | 113.6 | 458.4 | 426.7 | 60.9 | 275.8 | -6.9 |
| Malaysia | 69.2 | 78.9 | 184.6 | 199.1 | 14.0 | 152.3 | 7.9 |
| Pakistan | 22.6 | 26.7 | 42.6 | 41.4 | 18.4 | 54.7 | -2.8 |
| Philippines | 25.9 | 20.9 | 54.2 | 52.0 | -19.5 | 149.3 | -4.0 |
| Singapore | 22.8 | 41.9 | 97.2 | 101.9 | 83.9 | 142.9 | 4.8 |
| Korea | 274.2 | 377.7 | 1,076.6 | 863.5 | 37.7 | 128.6 | -19.8 |
| Thailand | 15.1 | 30.8 | 140.2 | 146.1 | 104.4 | 374.2 | 4.2 |
| Asia-Pacific | 656.6 | 1,060.0 | 3,991.8 | 4,296.1 | 161.4 | 244.2 | 7.6 |
| All BIS Markets | 24,598.7 | 29,177.0 | 56,210.7 | 59,666.0 | 18.6 | 104.5 | 6.1 |
| Asia-Pacific/BIS Markets | 2.7% | 3.6% | 7.1% | 7.2% | | | |

Note: ^a Data as of December for each year.

Source: Bank for International Settlements (2009).

While the size of all bond markets in Table 1 increased from 2000–2007, the average of growth rates reported by the Asia and Pacific region markets (244.2%) was higher than the average of growth rates reported by the developed markets (95.0%) and the average of growth rates reported by all markets covered by the BIS (104.5%). Notwithstanding the important contribution made by the PRC, these numbers say much for the success of efforts by policymakers to develop Asia and Pacific region bond markets after the 1997 Asian financial crisis.

Table 1 also shows the impact of the 2007–2008 financial crisis on the domestic bond markets, which was most pronounced in Korea. Total domestic bonds outstanding in Korea fell 19.8% over 2007–2008. The economic effect of a withdrawal of this magnitude (US\$213.1 billion) cannot be understated; this amount is equal to the entire bond market of Malaysia (US\$199.1 billion) and significantly larger than the market of Thailand (US\$146.1 billion). Other countries in the Asia and Pacific region experienced more moderate declines in domestic bonds outstanding (typically less than 10%), with some experiencing an increase (especially the PRC, Malaysia, Singapore, and Thailand). Thus disintermediation activity by the Asia and Pacific region issuers did not suffer as much as direct lending by individual banks or syndicates during the 2007–2008 financial crisis. This suggests that regional

securities markets functioned efficiently even when others, especially those in the major financial centers of the UK and US, were in disarray.

Table 2 shows changes in the composition of the same domestic bond markets in Table 1 during 1995–2008. Table 2 compares the average annual compound growth rates from 1995–2008 with the share of bonds outstanding that were government issued and the share of bonds outstanding that had short-term maturities.⁶ The bottom row reports the averages for all markets covered by the BIS, where bond markets grew at a compound rate of 7.05% from 1995–2008, and were mostly comprised government issues and issues with long term maturities. Over the 2000–2008 period, the government share domestic bond markets in all BIS markets increased by 4.6% (from 45.4 to 49.9%), whereas the share of bonds with short-term maturities increased by 0.7% (from 27.0 to 27.7%).

There is considerable diversity in these statistics across domestic markets, although with the exception of Japan, the larger bond markets tended to have a government share of issues less than 50% (e.g., the US has around 30%) and significant long-term short-term bond markets. A significant government sector, which may crowd-out corporate issuers, is linked to the underdevelopment of some bond markets (e.g., India, New Zealand, and Pakistan).

In Australia the presence of fiscal surpluses from 2000–2007 enabled the government to repay debt with the government proportion of bonds issued declining to 16.1%, the lowest proportion recorded. The reverse situation of increasing government share occurred in Germany (17.9%), Japan (18.8%), and Taipei, China (19.7%). For some domestic bond markets (e.g., Philippines) development coincided with a decline in the share of short-term bonds (in the case of the Philippines from 53.1 to 41.5%). This is consistent with a more benign macroeconomic setting with reduced inflationary and exchange rate pressures that encouraged investors to hold longer dated securities.

⁶ Short-term relates to maturities of less than one year as per the BIS definition.

Table 2: Change in Composition of Domestic Bond Markets in Key Developed and Asia and Pacific Region Markets (percent)

| | Average Annual Compound Growth Rate | Share of Bonds Issued By Government | | Share of Bonds with Short Term Maturities | |
|----------------------------|-------------------------------------|-------------------------------------|-------------|---|-------------|
| | 1995–2008 | 2000 | 2008 | 2000 | 2008 |
| Developed Countries | | | | | |
| Australia | 8.5 | 32.0 | 16.1 | 58.3 | 65.1 |
| Canada | 4.5 | 65.4 | 64.8 | 28.1 | 28.8 |
| France | 6.2 | 52.9 | 49.2 | 33.8 | 37.4 |
| Italy | 6.0 | 73.1 | 54.6 | 22.8 | 14.0 |
| Germany | 2.3 | 34.7 | 52.6 | 25.7 | 46.8 |
| Japan | 6.9 | 63.5 | 82.3 | 26.2 | 28.5 |
| New Zealand | -0.6 | 100.0 | 100.0 | 31.2 | 17.4 |
| Switzerland | 1.1 | 33.8 | 46.3 | 10.5 | 13.8 |
| UK | 6.1 | 61.9 | 67.6 | 40.7 | 41.4 |
| US | 7.0 | 29.9 | 32.0 | 26.9 | 24.2 |
| Asia-Pacific | | | | | |
| PRC | 34.6 | 54.7 | 64.1 | 5.5 | 41.1 |
| Taipei, China | 7.0 | 37.3 | 57.0 | 46.0 | 18.1 |
| Hong Kong, China | 5.9 | 34.6 | 41.8 | 72.6 | 55.2 |
| India | 14.9 | 98.2 | 90.9 | 5.0 | 16.1 |
| Malaysia | 8.5 | 36.0 | 38.5 | 18.9 | 12.8 |
| Pakistan | 4.8 | 100.0 | 100.0 | 45.3 | 58.5 |
| Philippines | 5.5 | 99.0 | 97.1 | 53.1 | 41.5 |
| Singapore | 12.2 | 59.6 | 71.4 | 43.8 | 46.5 |
| Korea | 9.2 | 30.6 | 39.1 | 35.4 | 40.5 |
| Thailand | 19.1 | 54.3 | 66.6 | 16.1 | 37.7 |
| All BIS Markets | 7.1 | 45.4 | 49.9 | 27.0 | 27.7 |

Source: Bank for International Settlements (2009).

4. KEY FEATURES OF FOREIGN BOND MARKETS

In this section we provide information on the scale and scope of select foreign bond markets and identify key features that may offer insights into their development. As noted earlier, a foreign bond is a security issued in a domestic market by a non-resident corporation and usually sold to domestic investors. These securities differ from bonds issued in international markets (e.g., Eurobonds) because they are subject to the regulations of the country of issuance.⁷

We exclude the US market owing to its size and level of sophistication and instead focus on smaller markets to identify characteristics that may provide insights for bond market development in developing economies. Our analysis adds to earlier work on the foreign bond markets present in Australia (Kangaroo bonds –see Batten, Hogan, and Szilagyi 2009) and

⁷ For example, the largest foreign bond market is the Yankee market in the US where securities are subject to the registration requirements of the Securities Act (1933), which importantly requires bonds to carry a credit rating if they are publically sold.

Korea (Arirang bonds –see Batten and Szilagyi 2007) and the role of supranational lenders (Hoschka 2005).

We use data from the Thompson Reuters RFI database, which provides details on the terms and conditions of 3,132 bond issues. Key features of these bonds (such as market of issue, credit rating, and industry sector of the issuer) are cross tabulated with maturity. An Analysis of Variance (ANOVA) *F*-test is then applied to provide a statistical measure of the presence of differences between the bond categories. The ANOVA *F*-tests were conducted on only 3,105 bonds as the dataset included 27 perpetual bonds. Coupons on the bonds analyzed were typically linked to a floating rate benchmark, such as the LIBOR.

Table 3: Number and Maturity of Foreign Bonds by Market of Issue

| Market of Issue | Date of First Issue | First Issuer in Market | Bonds Issued | | Bond Maturity (Years) | |
|-----------------------|---------------------|---------------------------------------|--------------|-------------------|-----------------------|--------------------|
| | | | # | % of Total Sample | Average | Standard Deviation |
| Australia-Kangaroo | 17-01-92 | Eurofima | 339 | 10.8 | 5.9 | 2.8 |
| Canada- Maple | 12-12-89 | Bowater Inc | 43 | 1.4 | 9.6 | 6.5 |
| PRC-Panda | 14-10-05 | ADB | 3 | 0.1 | 9.0 | 1.7 |
| European Union (EU) | 01-07-28 | Majzen | 98 | 3.1 | 12.7 | 19.8 |
| Greece | 30-09-91 | Enterprise Publique D'Electricite | 5 | 0.2 | 2.9 | 1.8 |
| Japan- Samurai/Shogun | 04-08-72 | World Bank | 1,161 | 37.1 | 8.3 | 6.2 |
| Eurobond | 18-09-02 | World Bank | 767 | 24.5 | 3.8 | 2.4 |
| Netherlands-Rembrandt | 15-12-82 | Commonwealth of Australia | 13 | 0.4 | 9.8 | 2.2 |
| New Zealand-Kauri | 11-05-95 | Eurostate Securitized Rated Assets SA | 37 | 1.2 | 6.5 | 5.2 |
| Portugal-Navigator | 28-07-89 | EIB | 20 | 0.6 | 4.5 | 2.4 |
| Spain-Matador | 05-08-87 | Eurofima | 107 | 3.4 | 5.3 | 1.8 |
| Switzerland-Alpine | 22-09-94 | Kun Young Construction Co Ltd | 516 | 16.5 | 1.7 | 1.3 |
| Taipei,China- Formosa | 02-08-95 | ADB | 2 | 0.1 | 7.0 | 0.0 |
| UK-Bulldog | 04-08-71 | Republic of Ireland | 21 | 0.67 | 13.1 | 11.9 |
| Total | | | 3,132 | 100% | 5.9 | 6.1 |

Notes:

1. Date format is day-month-year.

2. Sample includes all non-US foreign bonds in the RFI database issued from 1 January 1928 to 30 June 2009 (N=3,132).

Source: Thompson Reuters Fixed Income Database. Available: http://thomsonreuters.com/products_services/financial/content_update/content_overview/content_fixed_income/.

Table 3 reports the number of bonds issued and the average maturity of each issue in major non-US foreign bond markets. The foreign bond issues were denominated in the local currency. However, in some markets other denominations are permitted. In this case issues in local and foreign currencies are usually named differently. For example, in the Japanese market issues in the local currency (yen) are termed Samurai bonds, while issues in US dollars are termed Shogun bonds.⁸ The data include all foreign bonds issued from 1 January 1928 to 30 June 2009 as recorded in the RFI Database (N = 3,132). There are 14 foreign bond categories or markets of issue. The largest market of issue was the Samurai/Shogun bond market in Japan (1,161 bonds or 37.1% of the sample), followed by: the Eurobonds

⁸ See Honda (2003) for a discussion of the process of financial market reform in Japan.

market⁹ (767 bonds or 24.1% of the sample); the Swiss Alpine bond market (516 bonds or 16.5% of foreign bonds); and the Australian Kangaroo market (339 bonds or 10.8% of foreign bonds).

The remaining 11.5% of bonds covered a range of smaller markets including issues in the legacy currencies of Europe prior to the introduction of the euro on 1 January 1999 and recent issues in markets such as the PRC (termed Panda bonds) and Taipei, China (Formosa bonds). As shown Table 3, supranational or quality sovereign issuers played an important role in these markets, as they tended to be the first issuers. The first two Panda bonds were issued in October 2005 by the International Finance Corporation and the ADB (CNY1.1 billion of 10-year bonds at a 3.4% yield and CNY1 billion of 10-year bonds at a 3.34% yield).

The *F*-statistic for differences in the average bond maturity of the different markets of issue ($F=65.09$, $p=0.000$, $N=3,105$) is consistent with variation in the average maturity of each of these markets. The two longest average bond maturities were in the UK (Bulldog issues) with a maturity of 13.1 years and the EU with 12.7 years. The shortest maturities were in Switzerland (1.7 years) and Greece (2.9 years).

Table 4 reports the top 20 of the 445 foreign bond issuers in the sample, along with average and standard deviation of the maturities of the issuers' bonds. The most important issuer was the World Bank-International Bank for Reconstruction and Development (IBRD) (472 issues or 15.1% of the sample total), followed by the United Bank of Switzerland (USB) (305 issues or 9.7% of the sample total) and the European Bank for Reconstruction and Development (EBRD) (102 issues or 3.3% of the sample total). While the UBS issues tended to have shorter maturities (average of 1.5 years) with very little variation (standard deviation of 0.8), the World Bank-IBRD and the EBRD tended to have longer maturities (averages of 6.3 and 9.9 years respectively) with considerable variation (standard deviations of 6.2 and 7.2 respectively). This variation suggests that these issuers looked to maximize pricing opportunities that arose along the entire yield curve in a specific country of issue rather than restricting themselves to a specific maturity bucket. Nonetheless, the *F*-statistic for differences in the average bond maturity of the various single issuers ($F=8.72$, $p=0.000$, $N=3105$) suggests significant variation among the maturity choice of each issuer. This is consistent with issuers capitalizing upon the unique institutional aspects of each market (such as the presence of investors requiring long term issues) or their own unique aspects.

⁹ Bonds in this market are issued as part of global bond issuance programs and have a domestic component (e.g., a significant number of these bond were Japanese Uradashi bonds – issued in the high yielding currencies of South Africa, Australia, and New Zealand).

Table 4: Top 20 Issuers of Foreign Bonds

| Issuer | # of Bonds Issued | Bond Maturity (Years) | |
|---|-------------------|-----------------------|--------------------|
| | | Average | Standard Deviation |
| World Bank-IBRD | 472 | 6.3 | 6.2 |
| UBS Aktiengesellschaft (Jersey Branch) | 305 | 1.5 | 0.9 |
| EBRD | 102 | 9.9 | 7.2 |
| International Finance Corp. | 83 | 6.1 | 6.6 |
| Clariden Leu Aktiengesellschaft and Nassau Branch | 81 | 1.0 | 0.3 |
| ADB | 58 | 7.6 | 5.3 |
| Inter American Development Bank | 52 | 8.5 | 5.0 |
| Kommunalbanken Aksjeselskap | 47 | 3.6 | 2.3 |
| Svensk Exportkredit Aktiebolag | 43 | 4.0 | 2.7 |
| Merrill Lynch & Co Inc. | 40 | 5.6 | 2.4 |
| European Investment Bank | 39 | 5.2 | 2.9 |
| Bank Vontobel Cayman Islands | 38 | 1.1 | 0.1 |
| Kuntarahoitus Osakeyhtio | 37 | 3.0 | 1.8 |
| Citigroup Inc. | 36 | 8.1 | 6.3 |
| EUROFIMA | 32 | 8.2 | 4.1 |
| Korea Development Bank | 32 | 5.6 | 2.3 |
| Toyota Motor Credit Corp. | 28 | 3.1 | 1.0 |
| Kommuninvest I Sverige Aktiebolag (KIS AB) | 27 | 3.0 | 1.4 |
| Bank of America Corp. | 25 | 6.5 | 2.1 |
| Morgan Stanley | 25 | 5.3 | 1.7 |
| Total | 3,132 | 5.7 | 6.1 |

Note: Sample includes all non-US foreign bonds in the RFI database issued from 1 January 1928 to 30 June 2009 (N=3,132).

Source: Thompson Reuters Fixed Income Database. Available: http://thomsonreuters.com/products_services/financial/content_update/content_overview/content_fixed_income/.

The obvious differentiator between issuers is their degree of credit quality. This affects investor decisions to buy the securities regardless of the maturity preferences of investors. This appears to be the most important factor driving issuer maturity choice since issuers with slightly lower credit ratings (e.g., in Table 4, Clariden Leu Aktiengesellschaft, Bank Vontobel, and Morgan Stanley all are single A-rated) tended to have the lowest variation in the maturities of their issues (standard deviations of 0.3, 0.1, and 1.7 respectively). This effect is better illustrated for two issuers with similar numbers of bond issues but slightly different credit ratings. For example, Toyota and KIS AB both issued similar amounts of bonds (28 and 27 respectively) with similar average maturities (3.1 and 3.0 years respectively). However, AA rated Toyota had a standard deviation of 0.95, whereas higher AAA rated KIS AB had a much higher standard deviation of 1.4. This is consistent with KIS AB having greater choice, or more opportunities, in foreign bond markets due to its better quality rating.

Table 5 records the number and maturities of foreign bonds in the sample from 1928–June 2009, recording the number of issues at 5-year periods from 1970–2005 and then annually from 2005–June 2009. The RFI database classifies 5 bonds issued by Majzen (Ferrocarriles) from 1928–1952 (maturity 2022–2005) as foreign bonds. In 1971 the Republic of Ireland issued a foreign bond in pounds sterling in the UK. Later in 1971, the World Bank, ADB and other sovereigns issued a series of yen denominated bonds in Japan (Samurai bonds). From 1976 foreign bond issues became more frequent with the number of issues rising steadily. Despite the 2007–2008 financial crisis the number of bonds issued in the period from 2006–2010 (1,193 bonds as of June 2009) still exceeded the number issued in the period from

2001–2005 (827 bonds). Interestingly, in the period from 1985, the number of foreign bonds issued increased while the average bond maturity declined. This is the likely consequence of a developing market, which accommodates issuers with a variety of credit ratings not just supranationals and high-quality sovereign issuers. The F -statistic for differences in the average bond maturities ($F= 62.72$, $p=0.000$, $N=3,105$) demonstrates significant variation in the maturities issued over the last eighty years.

Table 5: Number and Maturity of Foreign Bonds, 1928–June 2009

| Year | # of Bonds Issued | Bond Maturity (Years) | |
|----------------|-------------------|--------------------------|--------------------|
| | | Average | Standard Deviation |
| 1928–1952 | 6 | 84.39 | 0.53 |
| 1971–1975 | 7 | 20.34 | 1.16 |
| 1976–1980 | 53 | 9.07 | 1.34 |
| 1981–1985 | 189 | 11.33 | 3.25 |
| 1986–1990 | 197 | 8.62 | 2.89 |
| 1991–1995 | 230 | 5.99 | 2.82 |
| 1996–2000 | 403 | 6.10 | 4.74 |
| 2001–2005 | 827 | 6.89 | 6.52 |
| 2006 | 425 | 3.77 | 3.93 |
| 2007 | 405 | 3.70 | 3.48 |
| 2008 | 279 | 3.45 | 3.97 |
| 2009 (to June) | 84 | 3.16 | 1.48 |
| Total | 3,105 | 5.86 | 6.10 |

Note: Sample includes all non-US foreign bonds in the RFI database that were not perpetuities issued from 1 June 1928 to 30 June 2009 ($N=3,105$).

Source: Thompson Reuters Fixed Income Database. Available: http://thomsonreuters.com/products_services/financial/content_update/content_overview/content_fixed_income/.

Table 6 presents a summary of the key features of foreign bonds in the sample. The most prominent feature of these bonds is the fact that 88.2% were fixed rate with simple pricing features. Only a very small proportion of bonds carried option features (8.2% were callable; 16.4% were convertible, 5.2% were dual currency, and 0.7% were puttable). More than half of the bonds (58.7%) were bearer securities (24.5% were bearer Eurobond issues), although a significant amount (36.8%) were also listed on the various stock exchanges of their home country, or required registration (14.9% of these were issues in Australia, which prohibited bearer securities). In addition, other than a very small amount of bonds that were either secured (8.5%) or asset backed (1.3%), most were unsecured, placing the significant burden of credit risk assessment on investors, who rely upon rating agencies to perform this task.

Table 6: Key Features of Foreign Bonds

| Foreign Bond Feature | # of Bonds Issued | % of Total Sample |
|------------------------------------|--------------------------|--------------------------|
| Asset Backed Securities | 40 | 1.3 |
| Bearer | 1,838 | 58.7 |
| Callable | 256 | 8.2 |
| Convertible | 514 | 16.4 |
| Dual Currency | 162 | 5.2 |
| Exchange Listed | 1,151 | 36.8 |
| Fixed rate coupon –“Plain Vanilla” | 2,763 | 88.2 |
| Floating- LIBOR or equivalent | 331 | 10.6 |
| Guaranteed | 124 | 4.0 |
| Indexed | 34 | 1.1 |
| Medium Term Notes | 1,035 | 33.1 |
| Mortgage Backed Securities | 23 | 0.7 |
| Perpetual | 26 | 0.8 |
| Private Placements | 487 | 15.6 |
| Puttable | 22 | 0.7 |
| Registered | 468 | 15.0 |
| Secured | 267 | 8.5 |
| Sinking Fund | 246 | 7.9 |
| Warrants | 3 | 0.1 |

Note: Sample includes all non-US foreign bonds in the RFI Database issued from 1 January 1928 to 30 June 2009 (N=3,132).

Source: Thompson Reuters Fixed Income Database. Available: http://thomsonreuters.com/products_services/financial/content_update/content_overview/content_fixed_income/.

The simplicity of the coupon structures places the responsibility of interest rate risk and ultimately currency risk (by definition the denomination of a foreign bond is not the reporting currency of the issuer) on the issuer. This burden can only be accommodated if there are deep and liquid foreign exchange markets to facilitate risk transformation and risk management, including: floating rate interest rate products (specifically forward rate agreements (FRAs), interest rate futures contracts, and interest rate swaps); currency swaps or currency options; and spot or forward foreign exchange markets. These last two markets are critical given that currency swaps require cash exchange at the inception and conclusion of the contract. A key feature of foreign bond markets where there is some scale (Australia, Canada, Japan, and Switzerland) is the presence of both over-the-counter derivatives markets and deep foreign exchange spot and forward markets (see BIS 2007). The absence of risk transformation capabilities appears to be a major deterrent to issuance.

Table 7 reports the number and maturities of bonds by type of issuer for all bonds in the sample. The table divides the market into three main groups: corporations (51.1%), supnationals (28.8%), and sovereign issuers (20.1%). Based on these classifications the supnational issues tended to have the longest maturities (7.0 years), followed by the sovereign issuers (6.6 years) and the corporation category (4.9 years). Maturity is clearly linked to rating quality as the average credit rating of the supnationals was AAA, sovereigns was AA, and corporations was single-A. The *F*-statistic for differences in the average bond maturity for each type of issuer ($F=26.32$, $p=0.000$, $N=3,105$) confirms these differences are statistically significant.

Table 7: Number and Maturity of Foreign Bonds by Type of Issuer

| Type of Issuer | # of Bonds Issued | % of Total Sample | Bond Maturity (Years) | |
|---------------------------|-------------------|-------------------|-----------------------|--------------------|
| | | | Average | Standard Deviation |
| Corporate | 1,599 | 51.1 | 4.9 | 6.5 |
| - Banking | 821 | 26.2 | 3.5 | 3.3 |
| - Non-Bank Financial | 465 | 14.9 | 5.5 | 5.5 |
| - Securitization Products | 80 | 2.6 | 5.5 | 3.0 |
| - Utilities | 20 | 0.6 | 9.6 | 5.6 |
| - Oil and Gas | 23 | 0.7 | 8.3 | 3.0 |
| - Railways | 17 | 0.5 | 9.3 | 4.9 |
| - Automotive | 16 | 0.5 | 4.6 | 1.9 |
| - Other Corporate | 157 | 5.0 | 5.9 | 2.0 |
| Supranational | 902 | 28.8 | 7.0 | 6.1 |
| Sovereign | 631 | 20.6 | 6.6 | 4.7 |
| Total | 3,132 | 100.0 | 5.9 | 6.1 |

Note: Sample includes all non-US foreign bonds in the RFI Database issued from 1 January 1928 to 30 June 2009 (N=3,132).

Source: Thompson Reuters Fixed Income Database. Available: http://thomsonreuters.com/products_services/financial/content_update/content_overview/content_fixed_income/.

Within the corporation category banks and non-bank financial corporations were the most important comprising of 26.2% and 14.9% of all issues respectively. Issues by banks had the shortest maturities of all of the classifications, while utilities and railways had the longest (9.6 and 9.3 years, respectively). The supranational group showed the greatest variation with 6.1, which is consistent with issuance designed to maximize comparative advantage given market conditions at the time of issuance rather than a predefined or restricted issuance requirement.

Table 8 reports the number of bonds issued by the credit rating provided by Standard and Poor's and the average maturity of issue for these credit rating classes. The largest number of bonds issued was by AAA issuers (44.4%) followed by the single-A class. The *F*-statistic for differences in the average bond maturity of issuer ratings classes ($F=21.40$, $p=0.000$, $N = 3105$) demonstrates statistically significant variation in maturity by credit rating. Interestingly, when classified in this way, the average maturity of the AAA class was longer (6.5 years) than the AA class (5.6 years), though both were shorter than the single-A rating class of 8.32 years and the BBB rating class of 7.72 years. The majority (208 or 80.0%) of the bonds rated BBB and below were issued in Japan, which is more accustomed to bond issues with longer maturities. The majority of the issues by AAA rated issuers were in the Japanese and Eurobond markets (1,061 issues or 76.2% of AAAs), followed by Australia (105 issues or 7.5% of AAAs).

Table 8: Number and Maturity of Foreign Bonds by Standard and Poor's Credit Rating

| Credit Rating | # of Bonds Issued | % of Total Sample | Bond Maturity (Years) | |
|---------------|-------------------|-------------------|-----------------------|--------------------|
| | | | Average | Standard Deviation |
| AAA | 1392 | 44.44 | 6.53 | 5.90 |
| AA | 355 | 11.33 | 5.63 | 3.48 |
| A | 895 | 28.57 | 8.32 | 9.79 |
| BBB | 155 | 4.95 | 7.72 | 5.61 |
| BB | 70 | 2.24 | 6.81 | 2.53 |
| Below BB | 35 | 1.17 | 6.13 | 2.80 |
| N/A | 230 | 7.34 | 6.03 | 4.30 |
| Total | 3,132 | 100.0 | 5.86 | 6.10 |

Note: Sample includes all non-US foreign bonds in the RFI Database issued from 1 January 1928 to 30 June 2009 (N=3,132).

Source: Thompson Reuters Fixed Income Database. Available: http://thomsonreuters.com/products_services/financial/content_update/content_overview/content_fixed_income/.

The Australian market is particularly reliant on high-quality issuers due to its small government sector and the use of foreign issuers as alternative securities for bank repo transactions and official account management. New Zealand has recently adopted similar rules for official transactions (see Appendix 2). Importantly, these high-grade issues also substitute for, or enhance, benchmark bond curves, which are critical for assisting corporate bond issuance in a domestic market (Batten and Szilagyi 2007).

5. LESSONS AND CONCLUSIONS

Over the last decade domestic bond markets have developed considerably as an alternative form of financing with total bonds in all markets covered by the BIS reaching US\$59.7 trillion in 2008 (BIS 2009). With a few exceptions, domestic bond markets remain dominated by government issuers and issues carrying long-term maturities. The trend to disintermediation has been accompanied and facilitated by: improvements in domestic bond trading and settlement infrastructure; the development of spot and forward foreign exchange markets; and the development of currency and interest rate derivatives markets (specifically cross-currency swaps and FRAs).¹⁰ Products in these markets facilitate risk management and risk transformation for the assets and liabilities held by investors and issuers, providing a means for avoiding the double mismatch problem (e.g., Tan, Karigane, and Yoshitomi 2001).

The expansion of both the scale and scope of bond markets offers considerable benefits to issuers by diversifying funding possibilities and creating opportunities to offer a range of products that better match the needs of investors. Generally, at the early stage of bond market development the aim is to simply facilitate the exchange of funds between domestic issuers and domestic investors. The next stage requires international participation. For non-resident investors and issuers to become involved in domestic markets they must have the means to manage and transform currency and interest rate risks associated with their foreign currency assets and liabilities. This implies having access to both foreign currency and interest rate derivatives and related cash-based hedging products. In the case of foreign bonds, issuers typically hedge the foreign exchange risk associated with the domestic issue via a currency swap into their home currency and then transform the cash-flows from the

¹⁰ See BIS (2007) for information on the scale and scope of foreign exchange and interest rate derivatives market.

bond coupons to either fixed or floating via an interest rate swap (e.g., Worzala, Johnson, and Lizieri 1997). Ideally these transactions are undertaken simultaneously.

The presence of credit ratings and improvements in financial statement reporting has encouraged new issuance in international securities markets, with bonds outstanding now totaling US\$23.8 trillion in all markets covered by the BIS in 2008. The internationalization of securities issuance offers both investors and issuers the opportunity to diversify currency risks, although international issues tend to be hedged to eliminate likely currency, interest rate, and occasionally credit risks. The recent development of these markets in the major financial centers in the Asia and Pacific region (especially Australia; Hong Kong, China; and Singapore) appears linked to the needs of international investors, such as sovereign and hedge funds with different risk appetites. Growth in international syndicated bank lending appears to have suffered as a consequence of this trend to disintermediated financing, especially since 2007, due to a combination of lenders experiencing difficulties in hedging credit risks and issuers being reluctant to borrow using volatile floating rate benchmarks such as the LIBOR. Therefore, syndicated loans outstanding in all markets covered by the BIS in 2008 fell to US\$297 billion a level not seen since the late 1990s.

The development of foreign bond markets in a number of smaller financial centers outside of the US, UK, and Japan with different legal traditions and degrees of supporting financial market infrastructure, offers hope to other countries seeking to expand the scope of their domestic financial markets. Attention should be drawn to the development of these markets in economies as diverse as Australia and Switzerland. The development of these markets is more reflective of financial participants leveraging unique country-specific features, in conjunction with enabling legislation and the proactive involvement of government, rather than adhering to a rigid or predefined checklist of requirements.

Nonetheless, the desire by a government to develop its financial services sector into a world-class financial trading and investment center will be difficult without the proactive involvement of market participants. For example, Korea failed to develop a viable foreign bond trading and issuance market despite the best efforts of its policymakers, providing valuable lessons for others (Batten and Szilagyi 2007).

In conclusion the Asia and Pacific region, excluding Japan, Australia, and New Zealand, has benefited from recent developments in financial infrastructure and trading with its domestic bond markets now standing at US\$4.3 trillion. However, given that this represents just 7.2% of the worldwide total, the region's bond markets remain underdeveloped—or at least offer scope for considerable further development—relative to the region's weight in the world economy. We suggest that development of foreign bond markets offers the best hope for the next stage of regional market development and refer to a number of critical features of these markets that emerge from the earlier analysis:

(a) There is a natural evolution to the sequence—and time it takes—for market forces to drive foreign bond and corporate bond market development.

It is difficult to both accelerate the speed of foreign bond market development and regulate for the risks associated with domestic development. For example, on average the largest markets outside the US first issued bonds between 1984–1989. Thus, we recommend a step-by-step approach, which establishes: technical infrastructure (e.g., trading and settlement systems for bond trading and adequate benchmark bonds to enable corporate bond pricing); sufficient market access by investors and issuers (and the legal apparatus to support this); and the presence of additional products in other market segments (such as interest rate and exchange rate derivatives) to enable risk management and risk transformation. With respect to the last category, the importance of FRAs and swaps for managing interest rate and currency risks cannot be understated, although there must also be sufficient depth in spot and forward foreign exchange markets to ensure that exchange rate distortions are minimized. Deep, liquid and diverse products crossing a host of derivative and cash-based markets are necessary to ensure low cost arbitrage and enabling

risk transformation. One key aspect of countries with developed bond markets (e.g., Australia, Japan, and Switzerland) was deep foreign exchange and derivatives markets, and the inability to offset risk via deep derivatives markets may account for limited foreign bond market development in Korea.

Over-the-counter products, especially swap and FRAs are now well established with standardized supporting legal documentation and settlement procedures. Thus, these products would be the easiest to introduce into a market with the possibilities of related exchange traded products (e.g., interest rate futures) undertaken later on as markets unfold. Invariably, developing products for risk management requires international participation in domestic financial markets by foreign banks and financial institutions, regulatory changes to accommodate derivatives trading, and the removal of capital control restrictions (Forbes 2005).

Eichengreen and Luengnaruemitchai (2004) highlighted several obstacles for the development of bond markets within the Asia and Pacific region including the slow development of private debt markets and the need to simultaneously reform other supporting aspects to financial markets. Such reforms include: creating bankruptcy legislation; reducing corruption reduction; creating reliable securities market regulation; eliminating or reducing capital controls so there is free movement of currency; and adopting international accounting standards. In addition there are necessary regulatory reforms linked to improving corporate governance (e.g., Nestor and Thompson 1999; Thompson 1999; Thompson and Poon 2000; Jiang and McCauley 2004; Park and Park 2005). All of these reforms are important and are difficult to achieve not just in one decade but several. Importantly, while risk management and trading skills may be imported to help kick-start a local development agenda, bringing about a comprehensive shift in business attitudes to risk management will require a much longer term investment in training local employees.

(b) Government consultation with industry is crucial to the development of foreign bond markets.

One should not underestimate the commitment required from industry, and financial intermediaries in particular, to support the markets in their embryonic stage. The presence of foreign institutions with existing skills in these areas is also a vital ingredient to this process. A noteworthy example of the cooperation between industry and government arose when the governments of Australia and New Zealand withdrew from their respective bond markets in the period before 2008 due to the presence of ongoing fiscal surpluses. The governments and industries agreed to the use of the use of high credit quality foreign bonds as substitutes for repo transactions to avoid liquidity and related benchmark pricing issues. The presence of foreign bonds also offered local pension funds the ability to buy the long dated securities necessary to manage new asset-liability matching regulations, international accounting standards, and risk-based regulations for insurance companies (Blommestein 2007). Blommestein argued that this will lead to a long-term demand for very long (20–30 years) and ultra long (30+ years) term bonds, and foreign bond issuers will likely meet this investment demand.

(c) Not all financial risk can be managed through government intervention.

Some risk can be avoided through appropriate accounting and risk management standards set by government. However, the human proclivity to gamble is difficult, if not impossible, to control or eliminate, as the losses suffered by traders in the most sophisticated financial firms can attest. This further emphasizes the need for consultation with industry in any development agenda.

(d) An ordering of issuance helped build confidence at the nascent stage of foreign bond market development

Almost without exception as foreign bond markets developed the highest credit quality issuers or sovereigns issued first, followed by quality banks and some multinationals (see

Table 5). The foreign bond market appeared to require an order of issuance. This particular order seems linked to the need for intermediaries to guide pricing (e.g., through benchmark bonds at long maturities) and related issues.

Although the presence of enabling infrastructure is important it does not guarantee that corporate and foreign bond markets will develop. It appears the right mix of issuer supply and investor demand is also needed to reach a take-off point for market development.

(e) There is an ongoing need to maintain liquidity in all markets, and especially so for benchmark bonds.

Risk-free benchmarks remain an integral and necessary part of the corporate bond market for pricing and hedging purposes. The theoretical and practical aspect of this concerns trading and risk management based upon credit spreads, where the risk free government bond is the benchmark. Thus, it is critical that governments (and local central banks) recognize the need to maintain adequate liquidity irrespective of fiscal requirements. Alternatively, in the absence of these governments can formally state that high quality foreign bonds are credit substitutes, as in the cases of Australia and New Zealand.

APPENDIX 1: DESCRIPTION OF THE ASIAN BOND MARKETS INITIATIVE AND THE ASIAN BOND FUND

The Asian Bond Markets Initiative

The Asian Bond Markets Initiative was endorsed at the ASEAN+3 Finance Ministers Meeting in Manila, the Philippines on 7 August 2003 and aims to develop efficient and liquid bond markets in Asia, enabling better utilization of Asian savings for Asian investments. It would also contribute to the mitigation of currency and maturity mismatches in financing (Taniguchi 2003).

As part of the Asian Bond Market Initiative, nine Pan Asian Bond funds have been launched. These are passively managed funds designed to provide an efficient mechanism for investors to buy local currency funds.

The managers of the 8 single market funds are:

- ABF China Bond Index Fund, China Asset Management Corporate Limited
- ABF Hong Kong Bond Index Fund, HSBC Investments (Hong Kong) Limited
- ABF Indonesia Bond Index Fund, PT Bahana TCW Investment Management
- ABF Korea Bond Index Fund, Samsung Investment Trust Management Company Limited
- ABF Malaysia Bond Index Fund, AmInvestment Management Sdn. Bhd.
- ABF Philippines Bond Index Fund, Bank of the Philippine Islands
- ABF Singapore Bond Index Fund, DBS Asset Management Limited
- ABF Thailand Bond Index Fund, Kasikorn Asset Management Company Limited

The Asian Bond Fund

The Asian Bond Fund was first launched in June 2003 and is managed by the BIS. The fund is invested in a portfolio of basket of liquid US dollar bonds of major Asian economies (excluding Australia, Japan, and New Zealand) and its initial size was approximately US\$1 billion (BIS 2003).

APPENDIX 2: WORLD BANK ANNOUNCEMENT 20 JULY 2007 CONCERNING KAURI BOND ISSUE

Washington, DC, July 20, 2007 – The World Bank (International Bank for Reconstruction and Development, IBRD) rated Aaa/AAA has issued its inaugural New Zealand Dollar Kauri (“Kauri”) 7-year global bond today. The NZD 350 million bond is a syndicated transaction lead-managed by ANZ Institutional and TD Securities. Co-lead managers are RBC Capital Markets and Westpac Institutional Bank.

The World Bank announced the transaction on July 16, 2007. The timing of the launch follows a World Bank roadshow in New Zealand in April this year. It also follows the announcement by the Reserve Bank of New Zealand on July 17, 2007 of its decision to accept Supranational, Foreign Sovereign, “Agencies” and Semi-Government issues as security in the Overnight Reverse Repo Facility.

For more information about this bond's repo eligibility, see: <http://www.rbnz.govt.nz/finmarkets/liquiditymanagement/3067314.html>.

The transaction was very well received with the majority of the investor participation from domestic accounts, representing 83%, and primarily fund managers and insurance companies.

With this bond, the World Bank becomes the first supranational issuer in the Kauri market since it was established in 2004. The World Bank previously issued the first ever global NZD bond in 1990, and it is delighted to come back to this market.

(World Bank Treasury 2007).

REFERENCES

- Arner, D., P. LeJot, and G. Rhee. 2006. Developing Regional Market: Essential National Changes in Law and Regulation. In *Asia's Debt Capital Markets: Prospects and Strategies for Development*, edited by D. Arner, J. Park, and P. LeJot. New York, NY: Springer.
- Bank for International Settlements (BIS). 2003. Launch of the Asian Bond Fund. BIS Press Release. 2 June. <http://www.bis.org/press/p030602b.htm>.
- . 2007. *Triennial Central Bank Survey*. Basel, Switzerland: BIS.
- . 2009. *Quarterly Review: International Banking and Financial Market Developments*. Basel, Switzerland: BIS (various months).
- Bae, K.-H., Y.-S. Yun, and W. Bailey. 2006. Determinates of Bond Holdings by Foreign Investors. In *Asian Bond Markets: Issues and Prospects*. BIS Papers 30. Basel, Switzerland: BIS.
- Batten, J., W. Hogan, P. Warren, and P. Szilagyi. 2009. Financial Market Development and the Role of Foreign Bond Issuance: The Case of Australia. Research paper. <http://ssrn.com/abstract=1357988>.
- Batten, J., and P. Szilagyi. 2007. Domestic Bond Market Development: The Arirang Bond Experience in Korea. *World Bank Research Observer* 22: 165–195.
- Batten, J., and Y. Kim. 2001. Expanding Long-Term Financing Through Bond Market Development: A Post Crisis Policy Task. In *Government Bond Markets in Asia*, edited by Y. Kim. Manila: ADB.
- Blommestein, H. 2007. Pension Funds and the Evolving Market for (Ultra-)Long Government Bonds. *Pensions: An International Journal* 12(4): 175–184.
- Blommestein, H., and J. Santiso. 2007. New Strategies for Emerging Domestic Sovereign Bond Markets. Organization for Economic Co-operation and Development (OECD) Development Centre Working Paper 260. Paris: OECD.
- Burger, J., and F. Warnock. 2006a. Foreign Participation in Local Currency Bond Markets. National Bureau of Economic Research (NBER) Working Paper 12548. Cambridge, MA: NBER.
- . 2006b. Local Currency Bond Markets. NBER Working Paper 12552. Cambridge, MA: NBER.
- Chakraborty, S., and T. Ray. 2006. Bank-Based Versus Market-Based Financial Systems: A Growth-Theoretic Analysis. *Journal of Monetary Economics* 53(2): 329–350.
- Eichengreen, B., and P. Luengnaruemitchai. 2004. Why Doesn't Asia Have Bigger Bond Markets. NBER Working Paper 10576. Cambridge, MA: NBER.
- Forbes, K. 2005. Capital Controls: Mud in the Wheels of Market Efficiency. *Cato Journal* 25(1): 153–167.
- Herring, R. J., and N. Chatusripitak. 2000. The Case of the Missing Market: The Bond Market and Why it Matters for Financial Development. ADBI Working Paper 11. Tokyo: ADBI.
- Honda, E. 2003. Financial Deregulation in Japan. *Japan and the World Economy* 15: 135–140.
- Hoschka, T. C. 2005. Local Currency Financing—The Next Frontier for MTBs. Economic and Research Department Working Paper 078. Manila: ADB.

- International Monetary Fund (IMF). 2005. Development of Corporate Bond Markets in Emerging Markets. In *Global Financial Stability Report: Market Development and Issues*. Washington, DC: IMF.
- Inoguchi, M. 2007. Influence of ADB Bond Issues and US Bonds on Asian Government Bonds. *Asian Economic Journal* 21: 387–404.
- Jiang G., and R. McCauley. 2004. Asian Local Currency Bond Markets. *BIS Quarterly Review* June: 67–79.
- Kim, K. 1999. Creating Long-Term Mortgage-Backed Bond Markets in Asian Developing Economies – A Post Crisis Agenda. Manila: ADB.
- Lejot, P., D. Arner, and Q. Liu. 2006. Missing Links: Regional Reforms for Asia's Bond Markets. *Asia Pacific Business Review* 12(3): 309–331.
- Leung, J. 2006. Developing Bond Markets in Asia: Experience with ABF2. In *Developing Corporate Bond Markets in Asia*, edited by BIS. BIS Papers 26. Basel, Switzerland: BIS.
- McCauley, R., and Y. Park. 2006. Developing the Bond Market(s) of East Asia: Global, Regional or National? In *Asian Bond markets: Issues and Prospects*, edited by BIS. BIS Papers 30. Basel, Switzerland: BIS.
- Nestor, S., and J. Thompson. 1999. Corporate Governance Patterns in OECD Economies: Is Convergence Under Way? Presentation at the Conference on Corporate Governance in Asia: A Comparative Perspective, OECD and Korea Development Institute, Seoul, 3–5 March.
- Park, D., and Y. Park. 2005. Toward Developing Regional Bond Markets in East Asia. *Asian Economic Papers* 3: 183–211.
- Rhee, S. G. 2000. Rising to Asia's Challenge: Enhanced Role of Capital Markets. In *Rising to the Challenge in Asia: A Study of Financial Markets Vol. 1*. Manila: ADB.
- . 2004. The Structure and Characteristics of East Asian Bond Markets. In *Developing Regional Bond Markets in East Asia*, edited by Y. Park and T. Ito. Canberra: Australian National University Pacific Asia Press.
- Schinasi, G. J., and R. T. Smith. 1998. Fixed Income Markets in the United States, Europe, and Japan: Some Lessons for Emerging Markets. IMF Working Paper 98/173. Washington, DC: IMF.
- Tan, K., T. Karigane, and T. Yoshitomi. 2001. Avoiding Double Mismatches and Withstanding Regional Financial Crisis: The Singapore Experience. ADBI Research Paper 30. Tokyo: ADBI.
- Taniguchi, T. 2003. Asian Bond Market Initiative. Keynote speech delivered at the High-Level Seminar on Fostering Bond Markets in Asia, ASEAN+3, Tokyo, 1 March.
- Thompson, E. R., and J. P. Poon. 2000. ASEAN After the Financial Crisis: Links Between Foreign Direct Investment and Regulatory Change. *ASEAN Economic Bulletin* 17: 1–15.
- Thompson, J. 1999. Alternative Systems of Corporate Governance in OECD Countries: Strengths and Weaknesses. Paper presented at the Capacity Building Workshop on Corporate Governance in Asia, ADB and ADBI, Manila, 22–26 November.
- Tovar, C., and M. Quispe-Agnoli. 2008. New Financing Trends in Latin America: An Overview of Selected Issues and Policy Challenges. Federal Reserve Bank of Atlanta, *Economic Review* 3: 1–16.
- Walter, I. 1993. High Performance Financial Systems: Blueprint for Development. *ISEAS Current Economic Affairs Series*. Singapore: Institute of Southeast Asian Studies.

Worzala, E., R. D. Johnson, and C. M. Lizieri. 1997. Currency Swaps as a Hedging Technique for an International Real Estate Investment. *Journal of Property Finance* 8(2): 134–151.

World Bank Treasury. 2007. World Bank Issues Inaugural New Zealand Dollar. Press Release. 20 July. <http://treasury.worldbank.org/cmd/htm/WorldBankIssuesInauguralNewZealandDollar-denominatedKauriGlobalBond.html>.

Xiaochuan, Z. 2005. China's Corporate Bond Market Development: Lessons Learned. Speech delivered at seminar on Developing Corporate Bond Markets in Asia, BIS and People's Bank of China, Kunming, People's Republic of China, 17–18 November.