

Developing corporate bond markets in Asia

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1. Introduction

Since the 1997 crisis, bond market development has become a high priority for policymakers in Asia. The development of local currency bond markets has been seen as a way to avoid crisis, with these markets helping to reduce potential currency and maturity mismatches in the financial system. Indeed, several Asian economies have succeeded in developing fairly active primary and secondary markets in local government bonds.

Authorities across Asia have now turned their attention to local currency non-government bond markets, or what we might term “corporate bond” markets. They recognise that a robust financial system requires multiple channels of financing, in which banks and fixed income markets compete for borrowers. As the 1997 crisis itself demonstrated, short-term credit markets are prone to creditor runs, and a corporate bond market can provide the economy with an important backup form of intermediation.¹

While primary markets for corporate bonds in Asia have grown significantly, the growth in some markets has been led by quasi-government issuers or issuers with some form of credit guarantee. This may have happened because investors have had little access to the kind of information that would allow them to adequately evaluate the credit risks of other potential issuers. The secondary markets have developed even less, with little trading activity to be seen. Such inactivity may stem from a lack of investor diversity, inadequate market microstructures and insufficient flows of timely information.

In what follows, we first describe corporate bond markets in Asia and the Pacific in terms of their size and issuers. We then characterise the secondary markets and suggest reasons for the lack of liquidity in these markets.

2. Primary markets: size and issuers

We rely on BIS statistics to characterise the size and composition of 12 markets for local currency corporate bonds in Asia and the Pacific. These markets are those of Australia, China, Hong Kong SAR, India, Indonesia, Japan, Korea, Malaysia, New Zealand, the Philippines, Singapore and Thailand. In this characterisation, “corporate bonds” are broadly defined to include all non-government long-term debt issues, including those by quasi-government issuers, financial and non-financial issuers and resident and non-resident issuers.²

2.1 Market size, liquidity thresholds and crowding out

At the end of 2004, the 12 local currency markets featured in this paper had corporate bonds outstanding of over \$2.9 trillion. The Japanese market alone is over \$2 trillion in size, accounting for

¹ In Greenspan's (2000) words, a functioning capital market might have provided the Asian countries with a “spare tyre”, rendering the crisis more benign. Diamond (2004) shows formally why it is the nature of short-term credit markets to be prone to creditor runs.

² In Malaysia, this would be called the long-term part of the “private debt securities” (PDS) market.

two-thirds of the total (Table 1). Behind Japan are three markets that can still be considered rather large: Korea with \$355 billion, China with \$196 billion and Australia with \$188 billion. These four markets are “large” in the sense that they exceed the \$100 billion threshold McCauley and Remolona (2000) estimate would be required for a deep and liquid government bond market.³ Because corporate bond issues tend to be more heterogeneous than government bond issues and their issue sizes smaller, such a threshold for corporate bond markets would likely be higher. Factors other than size that would affect liquidity are addressed in Section 3 below.

Table 1
**Size of corporate bond markets and
 other channels of local currency funding**
 Selected countries, end-2004

	Corporate bonds ¹		Other channels as % of GDP		
	Amounts outstanding (USD billions)	As % of GDP	Domestic credit	Stock market capitalisation	Government bonds
Australia	187.5	27.1	185.4	111.5	13.8
China	195.9	10.6	154.4	33.4	18.0
Hong Kong SAR	61.9	35.8	148.9	547.7	5.0
India	24.5	3.3	60.2	56.8	29.9
Indonesia	6.8	2.4	42.6	24.5	15.2
Japan	2,002.0	41.7	146.9	76.9	117.2
Korea	355.6	49.3	104.2	74.7	23.7
Malaysia	49.7	38.8	113.9	140.8	36.1
New Zealand	29.9	27.8	245.5	41.1	19.9
Philippines	0.2	0.2	49.8	37.5	21.8
Singapore	21.7	18.6	70.1	211.4	27.6
Thailand	31.9	18.3	84.9	67.1	18.5
<i>Memo: United States</i>	<i>15,116.6</i>	<i>128.8</i>	<i>89.0</i>	<i>138.4</i>	<i>42.5</i>

¹Domestic and international bonds and notes in domestic currency issued by residents and non-residents.

Sources: IMF; World Federation of Exchanges; Dealogic Bondware; national data; BIS

Whatever the actual liquidity threshold, the remaining corporate bond markets would seem to have far to go to reach it. The next largest market is Hong Kong with \$62 billion, followed by Malaysia with \$50 billion, Thailand with \$32 billion, New Zealand with \$30 billion and India and Singapore each with \$22 billion. Two other economies - Indonesia and the Philippines - have smaller markets. As discussed below, opening up to foreign issuers and investors may help a market overcome the disadvantages of a small size.

The size of a market would depend not only on the size of the economy, but also on its level of development. In addition, market size would be affected by the competition among financing alternatives on either the issuer or investor side. While the banking sector or equity market would compete with the debt market for the same potential corporate issuers, the financing of heavy budget deficits may crowd out potential investors. Still, it is not surprising that the deepest corporate bond

³ This is, of course, only a rough threshold and does not take into account a number of factors that would affect liquidity.

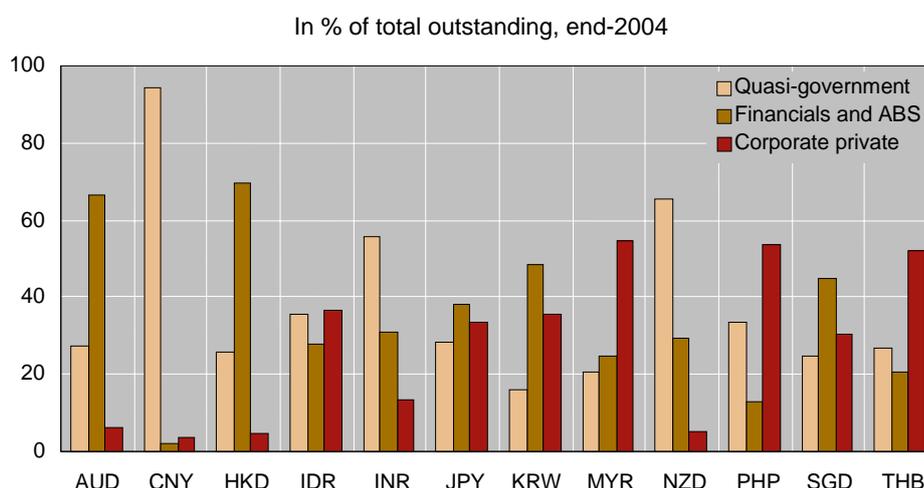
markets are those of the higher-income economies of Korea, Japan, Malaysia, Hong Kong and Australia. In each of these cases, as shown in Table 1, the size of the market exceeds 25% of GDP. New Zealand and Singapore are notable exceptions in this regard: these are relatively well-developed economies with limited government borrowing needs, but both have relatively shallow corporate bond markets. In both cases, competing financing alternatives for potential issuers may be a key factor: New Zealand depends heavily on its banking sector and Singapore on its equity market. Indeed, the depth of the corporate bond markets of Hong Kong and Australia may be due in part to their relatively small government bond markets.

2.2 Composition of issuers

The types of issuers we find in a given market are a clue to how developed the market is. In a well-developed market, any large firm should be able raise funds, because it will pay for investors to evaluate its credit quality on the basis of publicly available information. Hence, beyond the size of a market, a measure of its development would be the range of credit quality of the borrowers that come to the market. The presence of non-resident issuers may also represent a vote of confidence, indicating a market that is able to provide funds on terms that are competitive with those available in foreign credit markets.

In Asia, issuers in some markets still seem to be concentrated at the high end of the credit quality spectrum. In Malaysia, about 40% of the market consists of issuers with the equivalent of triple-A ratings and another 40% the equivalent of double-A ratings.⁴ In Korea, some 60% of the market is triple-A.⁵ For more systematic data on the credit quality of issuers, we can turn to indirect evidence in the form of the division of issuers into quasi-government issuers and others. Quasi-government issuers are likely to borrow with government guarantees, whether explicit or implicit. Hence, they are likely to have the highest credit quality available in the country. As shown in Graph 1, quasi-government issuers dominate three of the markets: China, India and New Zealand. These issuers also represent more than a third of the market in Indonesia and the Philippines. While financial institutions do dominate four other markets - Australia, Hong Kong, Korea and Singapore - this is no different from the pattern in the more developed markets of Europe and the United States, and, at least in the case of Australia, most of the financial issues are in fact asset-backed securities (ABSs).

Graph 1
Types of issuers in 12 corporate bond markets



Sources: Dealogic Bondware and BIS.

⁴ For purposes of comparison, the US market has its highest concentration of issuers in the single-A grade, followed by the triple-B grade.

⁵ Nonetheless, it is notable that the Korean market has graduated from one dominated by issues backed by credit guarantees to one in which such issues are a negligible fraction.

In the markets dominated by highly rated issues, it is likely that institutional investors have internal guidelines that limit them to investing only in such securities. Such guidelines, however, may merely reflect a reality in which the public information available is not adequate for investors to assess the creditworthiness of most potential issuers. This possibility is suggested by Bhattacharya, Daouk and Welker (2003), who find that the opacity of earnings releases tends to be high in Asia. Fan and Wong (2002) argue that such releases in Asia tend to lack relevant information because of cross-holdings and pyramid ownership structures.

Table 2
Local currency corporate bonds by residence of issuer¹
 At end-2004

	Residents (USD billions)	% of total	Non-residents (USD billions)	% of total
Australia	134.0	71.5	53.5	28.5
China	195.9	100.0	0.0	0.0
Hong Kong SAR	27.3	44.1	34.6	55.9
India	24.5	100.0	0.0	0.0
Indonesia	6.8	99.8	0.0	0.2
Japan	1,646.1	82.2	355.9	17.8
Korea	355.2	99.9	0.4	0.1
Malaysia	49.5	99.6	0.2	0.4
New Zealand	4.1	13.8	25.8	86.2
Philippines	0.2	86.8	0.0	13.2
Singapore	13.9	64.0	7.8	36.0
Thailand	31.8	99.8	0.1	0.2
United States	13,535.9	89.5	1,580.7	10.5

¹Domestic and international bonds and notes in domestic currency issued by residents and non-residents

Sources: Dealogic Bondware and BIS.

As discussed earlier, the presence of foreign issuers may indicate how well-developed a market is, but may also reflect the efforts of policymakers in a small economy to find ways to enlarge their market, thereby making it more viable. As shown in Table 2, New Zealand, Hong Kong and Singapore host the highest proportions of non-resident issuers, with these issuers comprising 86%, 56% and 36% of these markets, respectively. Australia also has a relatively high proportion of 29%. By this metric, these four markets may be the best-developed ones in the region.

3. Secondary markets: reasons for illiquidity

The secondary markets for local currency corporate bonds in Asia have lagged far behind their government bond counterparts. While government bond markets have become reasonably liquid over the past few years, corporate bond markets remain illiquid. As shown in Graph 2, the turnover ratios for Asian corporate bond markets are typically a small fraction of those for their government bond counterparts. Liquidity differences of this magnitude are to be expected, because, as mentioned

before, corporate issues tend to be more heterogeneous and smaller in size than government bond issues.⁶

Nonetheless, turnover ratios for corporate bonds in Asia indicate low levels of liquidity. The most notable exception in this regard is the Australian market, which has a turnover ratio higher than that of the US market.

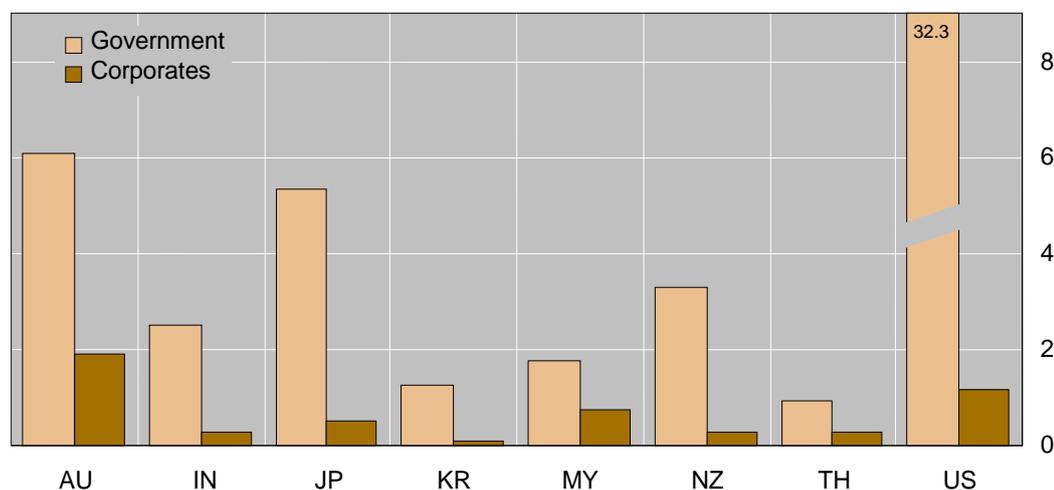
Four salient factors appear to be keeping liquidity low in the Asian markets: a) a lack of diversity in the investor base; b) inadequate market microstructures; c) market opaqueness; and d) a limited flow of timely information about issuers. We discuss each of these factors below.

3.1 Diversity of investor base

A diversity of investors fosters trading activity. With such diversity, it becomes less likely that different investors will find themselves on the same side of the market, either as sellers or buyers. They are more likely to disagree on the credit quality of an issuer, and thus more willing to trade, and less likely to need liquidity at the same time. In Asia, such diversity seems to be rather limited: the investor base for corporate bonds tends to be dominated by government-controlled provident funds, insurance companies and banks. Once a bond is issued, it normally disappears into the portfolios of buy-and-hold investors. Those who might trade more actively, such as fixed income funds and hedge funds, are typically missing from these markets or are not allowed exposures in credit risk.

An important class of investor missing from some Asian markets is foreign investors, including global financial intermediaries. In general, myriad market impediments discourage them from participating in the local markets. Among the impediments are withholding taxes and the lack of deep markets for hedging instruments, such as currency swaps. Policymakers in Asia are aware of these deficiencies,

Graph 2
Turnover ratios
2004 and in %



Sources: Bank of Korea; Bank Negara Malaysia; Bank of Thailand; Reserve Bank of Australia, Bond Market Association of the US; Japan Securities Dealer Association; Australian Financial Markets Association; NSE India.

⁶ This difference is evident in bid-ask spreads for US markets. Fleming and Remolona (1999) calculate the bid-ask spread for on-the-run Treasury securities to be between a sixth and a third of a basis point on the yield. Chakravarty and Sarkar (2004) estimate the average bid-ask spread for corporates to be about 21 cents per \$100. For a five-year bond, this amounts to about 4 basis points on the yield.

though. In setting up the Asian Bond Fund 2 (ABF2), as Ma and Remolona (2005) explain, central banks in Asia have been able to alleviate some of this. The Philippines, for example, recently removed documentary stamp taxes in the secondary trading of fixed income securities, which had discouraged foreign investors from participating in its local market.

3.2 Market microstructure

Fixed-income debt securities tend to trade more actively on over-the-counter (OTC) markets than on exchanges.⁷ The most liquid OTC markets are those for government securities, which tend to rely on designated market-makers (Sundaresan, 2002), as well as on inter-dealer brokers who allow dealers to trade with each other anonymously. Such microstructures have often required the intervention of governments to encourage market participants to set them up. Indeed, in most Asian markets primary dealers for government securities have been appointed and are required to make markets for these securities. Corporate bonds, however, have not had the benefit of such government-supported microstructures. As shown in Table 3, while most corporate issues in Asia do trade on OTC markets, they still lack liquidity.

Table 3
Secondary corporate bond markets

	Market type	Trade size in local currency	Bid-offer spread (basis points)	Ex post transparency
Australia	OTC/Exchange		2-10	...
China	OTC/Exchange	...	5-10	...
Hong Kong SAR	OTC	50-100m	10-15	...
India	OTC/Exchange	50m
Indonesia	OTC
Japan	OTC
Korea	OTC/Exchange	10bn	2-5	Yes (KSDA)
Malaysia	OTC	5m	5-10	Yes (BIDS)
New Zealand	OTC	...	5-15	...
Philippines	OTC	25-50m	Varies	...
Singapore	OTC	1-5m	10-15	...
Thailand	OTC/Exchange	10-40m	5-10	Yes (ThaiBMA)

Sources: Bloomberg, Citigroup (2005), and informal discussions with market participants.

In Asia, efforts to foster liquidity in corporate bonds have included having them listed on existing stock exchanges or even the setting up of exchanges devoted to fixed income securities. So far these efforts have not borne fruit. In Seoul, for instance, over 90% of the secondary trading in corporate bonds still takes place in the OTC market and only 10% on the exchange, even with the mandatory requirement that the trading of on-the-run benchmark government bonds among primary dealers must take place at the exchange market. In Thailand, the turnover ratio has been 30% in the OTC market and only 1% on the local exchange. China presents an interesting case: because of regulatory fragmentation, financial issues have been traded only in the local interbank OTC market, while non-financial names have been traded either on the two domestic stock exchanges or in the interbank OTC market.

⁷ In the market microstructure literature, OTC markets are said to be "quote-driven" markets requiring dealers willing to maintain inventories, while exchanges are often "order-driven" markets requiring a continuous flow of buy and sell orders.

In the OTC markets, there tends to be one, or at most two, dealers for a single issue, who usually are the lead underwriters of that issue. Indicative quotes from dealers are sometimes available on Bloomberg, but, for the most part, ex ante transparency consists of dealers faxing quote sheets to potential investors. In most Asian markets, different dealers fax only a limited and often non-comparable subset of the names in the rather heterogeneous corporate universe. There is no evidence of any formal inter-dealer market or of inter-dealer brokers who specialise in corporate bonds. Thus, the secondary market for corporate bonds tends to be uncompetitive, resulting in wide bid-ask spreads that discourage trading. Market participants suggest that bid-ask spreads are about five to ten basis points, even for the most liquid issues (Table 3).

3.3 Market opaqueness

A third and related factor affecting liquidity is transparency of trading activity. Ex post transparency encourages competitive pricing and makes investors confident that they are getting good prices, as demonstrated by the recent experience of the US corporate bond market. Until about a few years ago, trading in US corporate bonds had been lacklustre. Since July 2002, however, dealers in corporate bonds have been required to report all OTC trades to the Trade Reporting and Compliance Engine (TRACE) of the National Association of Securities Dealers (NASD). TRACE disseminates reported prices within 15 minutes of a trade.⁸ The introduction of such ex post transparency seems to have had a significant impact on liquidity. Edwards, Harris and Piwowar (2005), for example, find that such transparency has reduced bid-ask spreads by five basis points.

In recent years, some Asian markets have started to enact reporting requirements similar to or even surpassing those of TRACE. Much of this transparency, however, has been limited to transactions among dealers. Malaysia has the Bond Information Dissemination System (BIDS), in which dealers are required to enter trades (price and volume information) into the system within 10 minutes of a trade. This information then becomes available to the BIDS screen subscribers, which tend to be the participants on the “sell” side of the market. At least for those with access to BIDS, this system seems to provide better ex post transparency than even TRACE. The Thai Bond Market Association (ThaiBMA) requires traders to report OTC trades within 30 minutes and distributes the trade information to members four times a day. The Korea Security Dealers Association (KSDA) requires dealers to report their transactions within 15 minutes via its information distribution system, which disseminates the information to the public on a website on the same day. Even greater ex post transparency may be required if markets are to become more liquid.

3.4 Flow of timely information

The fourth limiting factor is perhaps the most critical one. Corporate bond markets in Asia seem to have a very limited flow of timely information about issuers. In markets such as those for corporate bonds, much liquidity can be generated by the activity of investors who disagree about fundamentals. Such information-based trading provides spillover benefits to those who are in the market for purely liquidity reasons. Moreover, such trading tends to be active when there is a significant flow of information about the credit quality of issuers, with every new piece of information creating a new reason to disagree.

In the more developed markets of Europe and North America, the flow of market-relevant news takes various forms. Issuers themselves provide quarterly financial reports and profit warnings; the financial press and information services report on major deals and transactions and important corporate events; and credit rating agencies make various announcements about changes in their views on rated companies. Trading in corporate bonds tends to pick up around these information events.

The market reactions to the various rating agency announcements illustrate the importance of timely information. Rating agencies have chosen to be very careful and deliberate about changing credit ratings, and hence rating changes tend to significantly lag the arrival of the relevant information in the markets. In their effort to be timely, rating agencies have devised “review” announcements -

⁸ The majority of trades are transparent as soon as they are reported.

“Watchlist” in the case of Moody’s and “CreditWatch” in the case of Standard and Poor’s. These announcements are made as soon as significant information is released, and they signal the possibility of a rating change within a few months. Micu, Remolona and Wooldridge (2004) have documented that market reactions to rating agency moves are strongest for these review announcements.

Asian markets typically do not see such information flows. Many issues carry one form of government guarantee or another, making the credit quality of the issuer irrelevant. The guarantees, of course, rarely change, giving investors no reason to disagree and therefore no reason to trade. When issuers do release information, even with common law sources of accounting standards, Ball, Robin and Wu (2003) find a pattern in which financial reporting in some Asian markets tends not to recognise economic losses in a timely way. Local credit rating agencies do exist in Asia, and often ratings are mandatory for bond issues. Most such rating agencies, however, are quite new and have not developed the reputation that will allow investors to trust their judgments on all but the largest and most highly rated names.

4. Conclusion

In their effort to develop their local currency corporate bond markets, policymakers in some Asian countries face fundamental questions. In the case of primary markets, should they emphasise further growth even if issuance remains concentrated in quasi-government issuers and those with explicit or implicit credit guarantees? Or should they focus their efforts on disclosure rules, accounting standards and transparency so that investors can get the information they need for assessing credit risk for a broader range of potential issuers? While concentrating on the first goal may be a good way to start, is it time to develop a culture of credit assessment and pricing of credit risk?

In the case of the secondary markets, the policy questions have to do with whether to focus on developing market microstructure, on diversifying the investor base or strengthening the institutions that foster flows of market-relevant information. These approaches are not necessarily substitutes and may be pursued together for greater effectiveness. In practice, however, developing market structures - for example, setting up fixed income exchanges - appears to be the most straightforward approach, while the others appear more complex and their pay-offs longer-term. Nonetheless, diversifying the investor base and improving the flow of market-relevant information are perhaps more important in the long run.

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