

## ***Developing Asia Pacific Non-government Fixed Income Markets***

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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 the Asia Pacific have now turned their attention to local currency non-government fixed income 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, shorter-term credit markets are prone to creditor runs, and a corporate bond market can provide the economy with an important backup form of intermediation.<sup>1</sup>

The primary non-government fixed income markets in Asia have grown significantly in recent years. However, 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. Furthermore, secondary fixed income markets have developed

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<sup>1</sup> 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.

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.

From a market development side it is a positive that recent years have seen a remarkable growth in the securitisation of domestic assets in Asia and the Pacific. This growth has been based largely on the repackaging of residential mortgages and consumer finance assets. In the countries hit by the 1997 Asian crisis, the new laws and regulations that allowed such structured finance were in some cases spurred by a need to deal with the flood of non-performing loans that flowed from the crisis. While a few transactions based on corporate debt were undertaken for this purpose, the recovery from the crisis was accompanied by a rise of households as the dominant class of borrowers.

There are two main advantages to securitisation. First, it can turn ordinarily illiquid assets into reasonably liquid instruments. Second, it can create instruments of high credit quality out of debt of low credit quality. Since securitisation in the Asia-Pacific region has been based largely on residential mortgages and consumer loans, in relative terms it has tended to enhance liquidity rather than transform credit risk.

Domestic fixed income markets in the Asia Pacific region have tended to be smaller than the banking sectors and equity markets (with Japan as the most notable exception). Therefore it is perhaps not surprising, that the development of non-government fixed income markets in recent years is part of a broader pattern of growth in key segments of many of the financial systems in Asia and the Pacific. As shown in Table 1, even for economies where the banking sector has grown, equity and bond markets have grown even more. The ratio of bank credit to the non-bank sector to GDP expanded strongly between 2000 and 2005 in Australia, Korea, New Zealand, Malaysia and India. Nonetheless, fixed income markets have in most cases expanded relative to GDP more than have the banking sectors. The growth in bond markets has been especially strong in Japan, Korea, Thailand and China. In terms of capitalization as a ratio to GDP, however, the equity markets grew even more strongly in Hong Kong, India, Korea and Thailand. As a result, for most of the major economies in the region, the equity markets now tend to be larger than the banking sectors.

In what follows, the first main section describes non-government fixed income markets in the Asia and the Pacific. The second section considers developments in the rapidly growing domestic securitisation markets in the region. In the third section we discuss selected issues related to secondary markets and suggest

**Table 1. Growth in Domestic Banking Sectors and Financial Markets\***

	Credit to Non-banking Sector		Stock market Capitalisation		Domestic Bonds Outstanding	
	2000	2005	2000	2005	2000	2005
Australia	89.9	113.0	95.8	102.4	44.7	51.7
China	112.2	114.4	16.6	5.6	21.6	40.8
Hong Kong	145.3	137.6	325.8	438.4	26.1	28.0
India	26.0	41.5	24.8	47.3	24.5	36.0
Indonesia	19.6	24.9	16.3	22.6	32.4	19.8
Japan	85.5	71.0	81.0	86.9	122.6	183.1
Korea	53.3	75.9	30.8	61.0	52.6	82.7
Malaysia	83.9	103.0	100.3	109.8	82.7	94.4
New Zealand	115.4	136.8	39.8	35.6	27.2	21.5
The Philippines	39.6	29.9	28.8	33.1	27.3	41.5
Singapore	96.4	94.2	150.2	156.0	45.2	58.1
Thailand	83.2	75.0	20.9	55.0	25.1	46.8
<i>Memo</i>						
<i>United States</i>	<i>49.6</i>	<i>57.7</i>	<i>147.3</i>	<i>108.3</i>	<i>145.7</i>	<i>165.0</i>

\* As a percentage of 2005 GDP.

Sources: CEIC; Datastream; BIS; national data.

reasons for the lack of liquidity in these markets. The final section provides concluding thoughts.

## 2. Non-government fixed income markets

In what follows we rely on BIS statistics to characterise the size and composition of 12 markets for local currency non-government 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, “non-government” is 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.<sup>2</sup>

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

**Table 2. Size of Non-government Fixed Income Markets and other Channels of Local Currency Funding** (Selected Countries, End-2005)

	Non-government Bonds*		Other Channels as Percent of GDP		
	Amounts Outstanding (USD billions)	As Percent of GDP	Domestic Credit	Stock market Capitalisation	Government
Australia	274.0	38.7	113.5	102.4	11.4
China	267.8	12.0	135.7	5.6	15.0
Hong Kong SAR	71.4	40.2	142.8	438.4	5.6
India	56.0	19.9	63.3	47.4	68.9
Indonesia	6.6	0.9	47.0	22.6	5.3
Japan	2,044.4	44.8	153.8	86.9	113.6
Korea	367.5	46.7	98.0	52.6	28.7
Malaysia	53.2	40.7	129.1	109.8	38.5
New Zealand	35.6	32.8	133.8	35.6	18.7
Philippines	0.2	0.3	46.2	33.1	28.7
Singapore	20.3	17.4	66.7	156.0	29.2
Thailand	42.9	24.8	111.1	55.0	19.2
<i>Memo: United States</i>	<i>18,264.8</i>	<i>146.6</i>	<i>96.3</i>	<i>108.3</i>	<i>29.2</i>

\* Domestic 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

## 2.1. Market Size, Liquidity Thresholds and Crowding Out

At the end of 2004, the 12 local currency markets featured in this paper had bonds outstanding of over \$2.9 trillion. The Japanese market alone is over \$2 trillion in size, accounting for two-thirds of the total (Table 1). Behind Japan are three markets that can still be considered rather large: Korea with \$368 billion, Australia with \$274 billion and China with \$268 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.<sup>3</sup> Because non-government bond issues tend to be more heterogeneous than government bond issues and their issue sizes are smaller, such a threshold for corporate bond markets would likely be higher.

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

Whatever the actual liquidity threshold, the remaining markets would seem to have far to go to reach it. The next largest market is Hong Kong with \$71 billion, followed by India with \$56 billion, Malaysia with \$54 billion, Thailand with \$43 billion, New Zealand with \$36 billion and Singapore with \$20 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.

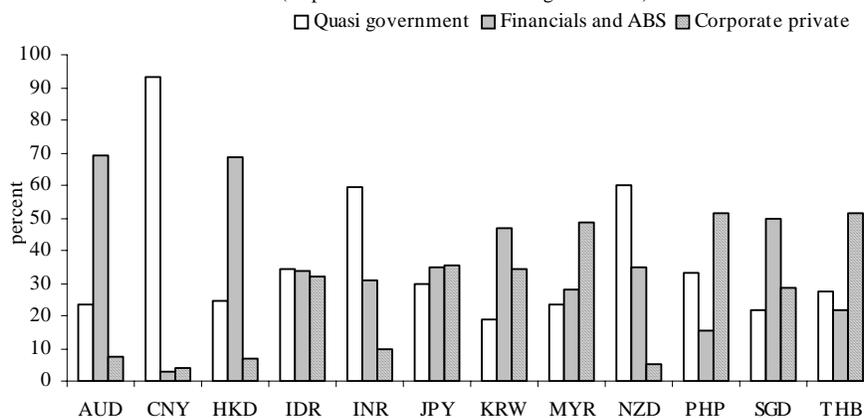
The size of a market would depend not only on the size of the economy, but also on its level of development. In addition, market size would be affected by the competition among financing alternatives on either the issuer or investor side. While the banking sector or equity market would compete with the 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 bond markets are those of the higher-income economies of Korea, Japan, Malaysia, Hong Kong and Australia. In each of these cases, as shown in the table, 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 manageable 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 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

**Figure 1. Issuer Type in the Asia-Pacific Non-government Fixed Income Markets** (In percent of total outstanding-end-2005)



Sources: Dealogic; Bondware; BIS

issuers with the equivalent of triple-A ratings and another 40% the equivalent of double-A ratings.<sup>4</sup> In Korea, some 60% of the market is triple-A.<sup>5</sup> 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 Figure 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 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).

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

<sup>5</sup> 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.

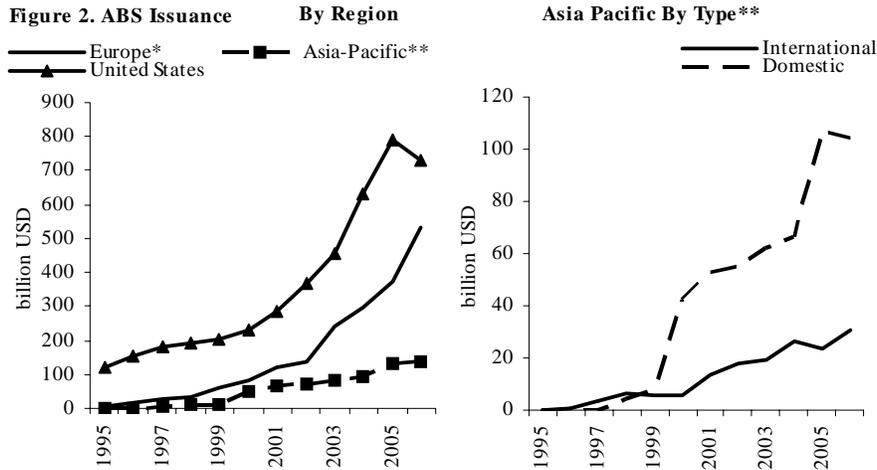
**Table 3. Local Currency Non-government Bonds by Residence of Issuer\***

At end-2005				
	Residents (USD billions)	Percent of Total	Non-residents (USD billions)	Percent of Total
Australia	170.9	62.4	103.1	37.6
China	267.5	99.9	0.3	0.1
Hong Kong SAR	27.8	39.0	43.5	61.0
India	55.9	99.8	0.1	0.2
Indonesia	6.4	96.4	0.2	3.6
Japan	1,680.5	82.2	363.8	17.8
Korea	366.9	99.8	0.6	0.2
Malaysia	52.8	99.2	0.4	0.8
New Zealand	0.4	1.1	35.2	98.9
Philippines	0.2	85.4	0.0	14.6
Singapore	11.5	56.6	8.8	43.4
Thailand	42.5	99.0	0.4	1.0
<i>United States</i>	<i>16,163.0</i>	<i>88.5</i>	<i>2101.8</i>	<i>11.5</i>

\* Domestic and international bonds and notes in domestic currency issued by residents and non-residents  
Sources: Dealogic Bondware; Euroclear; ICMA ; Thomson Financial Securities Data; national data; BIS.

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.

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 3, New Zealand, Hong Kong and Singapore host the highest proportions of non-resident issuers, with these issuers comprising 99%, 61% and 43% of these markets, respectively. Australia also has a relatively high proportion of 38%. By this metric, these four markets may be the best-developed ones in the region.



\*: EU members. \*\*: Australia, China, SAR, India, Japan, Korea, Malaysia, the Philippines, Singapore, Taiwan (China) and Thailand.  
Sources: Dealogic; Fitch; HSBC; Moody's; Standard & Poor's; Thomson Financial Securities Data; national rating agencies.

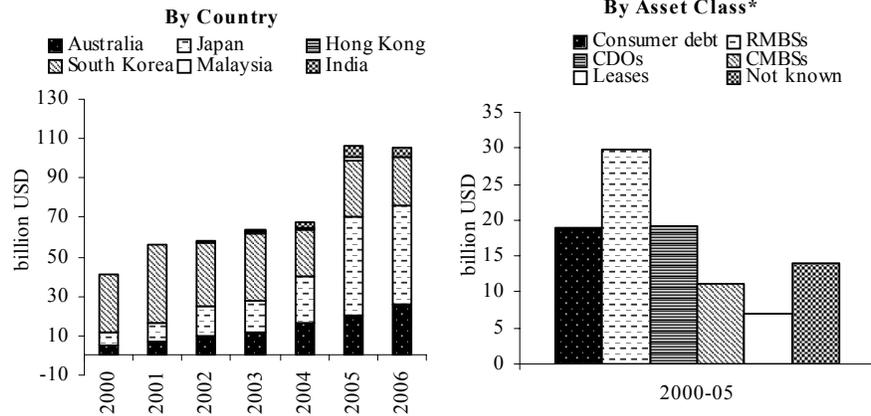
### 3. Securitisation in Asia

Recent years have seen a remarkable growth in the securitisation of domestic assets in Asia and the Pacific. In the countries hit by the 1997 Asian crisis, the new laws and regulations that allowed such structured finance were in some cases spurred by a need to deal with the flood of non-performing loans that flowed from the crisis. While a few transactions based on corporate debt were undertaken for this purpose, the recovery from the crisis was accompanied by a rise of households as the dominant class of borrowers.

While growth in securitisation or asset-backed securities (ABS) issuance in Asia and the Pacific has not been as strong as in Europe or the United States, the region has contributed significantly to global growth (Figure 2, left-hand panel). At first, Asian assets were securitised largely to be sold internationally. Since 1999, however, Asian assets have increasingly been securitised for sale in the country of origination (Figure 3, right-hand panel).

Issuance of ABSs in the region has been dominated by Japan, Australia and Korea (Figure 3, right-hand panel), which together account for around two thirds of overall issuance. An important impetus behind the growth of domestic

Figure 3. Domestic Issuance of ABS in Asia Pacific



\*Annual average, 2000–05, in per cent.  
 Sources: Dealogic; Fitch; JPMorgan; Moody's; Standard & Poor's; Thomson Financial Securities Data; national rating agencies.

securitisation in the region was the 1997 Asian crisis. The crisis gave rise to large amounts of non-performing loans (NPLs), and authorities saw securitisation as a way to dispose of these loans. Securitisation required new laws and regulations that would allow the creation of the appropriate SPVs. Countries hit by the crisis all introduced new elements to their securitisation frameworks at the time. Over time however, growth in markets for residential mortgages and other household debt in the region have led to a dominance of ABSs based on such debt (Figure 2, right-hand panel).

### 3.1. Securitisation Techniques

Securitisation or structured finance involves pooling similar assets together in a separate legal entity or special purpose vehicle (SPV) and redirecting the cash flows from the asset pool to the new securities issued by the SPV. The SPV is a device to ensure that the underlying assets are insulated from the risks of default by the originator of the assets – ie the structure is “bankruptcy remote” and the transfer of assets is a “true sale”. The securities that are issued by the SPV typically differ in important respects from the underlying pool of assets, most importantly in terms of liquidity and credit risk. These securities will largely either be more liquid or have less credit risk than the original assets or both.

One class of securitisations is primarily directed towards transforming ordinarily illiquid claims into a more easily tradable liquid “asset-backed security” (ABS).

The assets that tend to be securitised in this way are chiefly borrowings by households such as residential mortgages, credit card debt or auto loans. Individually these obligations tend to be rather small and highly heterogeneous. The diversification delivered by the pool means that credit losses become more predictable. Thus, an investor can focus on the parameters by which loans were chosen and their average expected performance. This economy of required information combined with larger denominations helps make the resulting ABS more liquid.

A second class of securitisations is primarily directed towards transforming low or medium credit quality assets into high credit quality financial assets. This risk transformation is achieved by means of a subordination structure in which certain tranches of securities are created to absorb losses from default. The resulting security is generically called a “collateralised debt obligation” (CDO). Assets securitised in this way include corporate bonds as well as bank loans to companies.

### **3.2. Securitising Mortgages and Consumer Debt**

The relative strength of MBSs and securitised consumer debt in Asia has varied across markets and over time. MBSs have played a prominent role in the Australian market as well as in Hong Kong, Japan, Korea and Malaysia, where new laws and government-sponsored agencies have been established to promote the development of the corresponding segments.

A number of stylised facts suggest that securitisation of mortgages and consumer debt in the Asia-Pacific region has tended more towards enhancing liquidity than towards credit risk transformation. First, the most striking feature of mortgage securitisation is their reliance on pools containing large numbers of individual loans. Second, securitised bonds based on consumer debt in the region in most cases do not have tranches with different credit risk profiles. Third, even though governments in the region are trying to promote MBS markets by providing credit enhancements, the role of these enhancements in upgrading the credit quality appears to be limited.

### **3.3. Securitising Corporate Debt**

Securitisation provides an alternative way of addressing a fundamental limitation of the corporate bond market in Asia, namely the gap between the credit quality of the bonds that investors in the region would like to hold and the actual credit quality of potential borrowers. In the recent past, Asian authorities have tried to

bridge this gap by promoting credit enhancement facilities. The experience with these facilities, has, in part due to the Asian crisis, not been entirely successful.

The region is now beginning to consider the securitisation of corporate debt as an alternative means of matching investor demand for high-grade securities with the lower credit quality of most borrowers. Clearly, such structures only work if there are investors who are willing to hold the subordinated tranches, including the equity tranche which absorbs the first losses. In Asia, first-loss tranches tend either to receive government support or be held by the sponsoring bank or by a foreign bond insurance company.

Discussions with rating agencies and market participants suggest that a higher degree of credit risk transformation – which can be done via over-collateralisation, tranche subordination and credit enhancements – may be required in many instances in Asia. Limited availability of domestic corporate debt collateral means that Asian CDOs need to be backed by lower-quality and less diversified collateral pools than the US and European markets. For some Asian countries an additional element is that there is more uncertainty about what happens in the event of default.

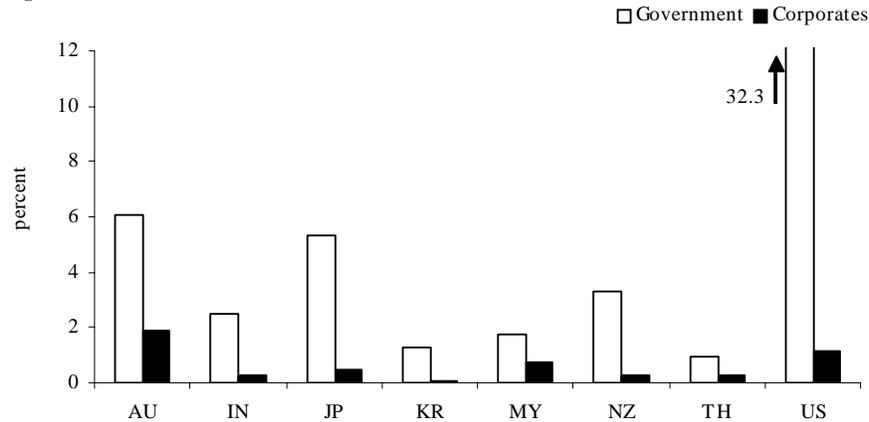
#### **4. Reasons for Secondary Market Illiquidity**

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 Figure 4, 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.<sup>6</sup> 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.

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<sup>6</sup> 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 (2003) 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.

Figure 4. Turnover Ratios



Sources: BoK; BNM; BoT; RBA, Bond Market Association of the US; Japan Securities Dealer Association; Australian Financial Markets Association; NSE India

Currently, 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.

#### 4.1. 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 markets for hedging

instruments, such as currency swaps. Policymakers in Asia are aware of these deficiencies, 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.

#### **4.2. Market Microstructure**

Fixed-income debt securities tend to trade more actively on over-the-counter (OTC) markets than on exchanges.<sup>7</sup> 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 4, while most corporate issues in Asia do trade on OTC markets, they still lack liquidity.

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. 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.

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

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<sup>7</sup> 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.

**Table 4. Secondary Corporate Bond Markets**

	Market Type	Trade Size in Local Currency	Bid-offer Spread (basis points)	Ex post Transparency
Australia	OTC/Exchange	Varies	2-10	...
China	OTC/Exchange	...	5-10	...
Hong Kong SAR	OTC	50-100m	10-15	...
India	OTC/Exchange	50m	5-10	...
Indonesia	OTC	Varies	Varies	...
Japan	OTC	Varies	2-5	...
Korea	OTC/Exchange	10bn	2-5	Yes (KSDA)
Malaysia	OTC	5m	5-10	Yes (BIDS)
New Zealand	OTC	...	5-15	...
The Philippines	OTC	25-50m	Varies	...
Singapore	OTC	1-5m	10-15	...
Thailand	OTC	10-40m	5-10	Yes (ThaiBMA)

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

transparency consists of dealers faxing quote sheets to potential investors. 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 4).

#### 4.3. 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 recent experience of the US corporate bond market. Until about two 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.<sup>8</sup> 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 does disseminate 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.

#### **4.4. 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

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<sup>8</sup> The majority trades are transparent as soon as they are reported.

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 – “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.

## **5. Concluding Thoughts**

In their effort to develop their domestic local currency non-government fixed income 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 microstructures, 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.

### **5.1. Securitisation**

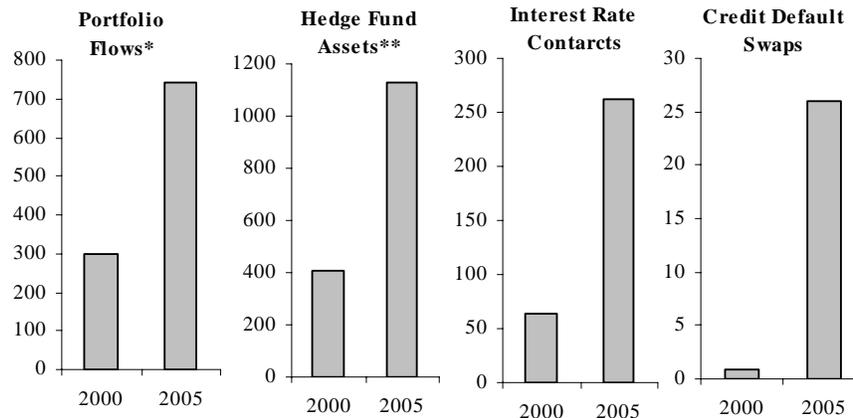
The increased use of securitisation and structured finance is helping complete Asia's financial markets through the creation of entirely new securities desired by investors. In particular, securitisation completes markets in two ways. First, it allows the transformation of otherwise illiquid assets, such as mortgages and consumer loans, into more liquid instruments. Second, it allows markets to overcome a mismatch between assets with high credit risk that are available and investors' preferences for assets with low credit risk. In addition, active markets for ABSs will likely encourage price consistency in credit markets and improve risk sharing among.

At the same time, there are policy questions linked to the growing use of securitisation in the region. One issue is the longer-term implications of relying on government guarantees in developing domestic fixed income markets [Chan et al. (2006), Shim (2006)]. A second issue concerns the potential implications of a reliance on assessments by domestic credit rating agencies in the structured finance markets, which may delay the development of better accounting standards and disclosure rules. A third challenge is the limited access to good historical data for household finance products. Finally, as more complex financial instruments are introduced into the region, the demands on the institutions responsible for market oversight and prudential regulation are bound to increase.

### **5.2. Fixed Income Markets and Systemic Risks**

While the growth of corporate bond and other fixed income markets help to diversify the sources of financing for the economy, they are also potential sources of systemic risks which need to be monitored. Where financial markets are growing, the banking business may well be expanding more than is measured by bank credit to non-banks.

**Figure 5. Portfolio Flows, Hedge Funds and Derivatives (in billion USD)**



\*For ACC countries, excluding Indonesia and Malaysia, gross. \*\*Total assets under management.

Source: CEC; IMF; Int'l Fin. Services London; RBE; Statistics Deptt. Singapore; Statistics New Zealand; BIS.

As the growth in domestic financial markets introduces new forms of risks to the economy, countries in the Asia Pacific region have also become more vulnerable to shocks abroad. Three salient developments abroad are shaping these vulnerabilities. First, as shown in Figure 5, cross-border portfolio flows in both directions in Asia and the Pacific have more than doubled in recent years. Second, hedge funds -- a new unregulated class of investors that are more nimble and more leveraged than other investors -- are playing an increasingly important role in many markets and asset classes. Globally, assets under management of these funds rose from \$400 billion in 2000 to \$1.2 trillion in 2005, and there is little doubt that their presence in Asian-Pacific markets is significant. Finally, the markets for derivatives and other complex products have mushroomed, especially in the fixed-income markets. The most significant new instrument is perhaps the credit default swap (CDS), for which the global notional amount outstanding now exceeds \$17 trillion.

To safeguard the financial system as fixed income markets and other financial markets evolve, central banks face the challenge of keeping abreast of changes in the financial structure and monitoring new forms of risk. Unlike banks, financial markets tend to be regulated through market discipline and public disclosure rules rather than through the direct and confidential examination of an institution's activities. Hence, in the case of such markets, the monitoring information that would be available to central banks would often be the same information available to investors at large -- financial asset prices, publicly disclosed financial statements

and other statistics that are collected for the public. However, to the extent that regulated institutions are involved in these markets, the supervisory process may provide additional information. Central banks would somehow have to make use of such limited information to monitor market developments that might put the financial system at risk.

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