AsianBondsOnline Annual Bond Market Liquidity Survey

Recent Trends in Quarterly Turnover Ratios of LCY Government Bonds in Emerging East Asia

The liquidity of local currency (LCY) government bonds—as measured by quarterly turnover ratios[4]—improved in most emerging East Asian markets during 3Q10 **(Figure 12)**.

- In the People's Republic of China (PRC), quarterly turnover ratios for government, central bank, and policy bank bonds all rose in 3Q10. Central bank bonds had the highest turnover ratio at 1.53, followed by policy bank bonds at 1.31 and treasury bonds at 0.37.

- In the Republic of Korea, central government and central bank bonds both registered higher turnover ratios in 3Q10 compared with the previous quarter. The turnover ratio for central government bonds rose to 1.16 in 3Q10 from 1.10 in 2Q10, while the turnover ratio for central bank bonds increased to 1.51 from 0.54.

- The liquidity of Philippine government bonds increased in 3Q10, with the turnover ratio reaching 0.99 from 0.41 in the previous quarter.

- In Singapore, the turnover ratio for government bonds rose to 1.01 in 3Q10 from 0.89 in the previous quarter, on the back of quarterly rises for both treasury bills and treasury bonds.

In the region's other government bond markets, quarterly movements in turnover ratios have been mixed for various types of bonds.

- In Malaysia, the turnover ratio for central government bonds remained unchanged in 3Q10 from the previous quarter at 0.37, but fell for central bank bills to 1.89 from 2.65.

[4] The quarterly turnover ratio is defined as the quarterly trading volume for a particular type of bond divided by the average stock of bonds outstanding at the end of the previous and current quarters.

- In Thailand, the turnover ratio for Bank of Thailand (BOT) bonds climbed to 1.68 in 3Q10, and the turnover ratio for treasury bonds rose slightly to 0.23. On the other hand, the ratios for treasury bills and state-owned enterprises bonds remained at the very low levels of 1.05 and 0.02, respectively.

- In Indonesia, the turnover ratio for government bonds dropped to 0.27 in 3Q10 from 0.34 in 2Q10, partly reflecting a 24.8% quarter-on-quarter (q-o-q) decline in new issuance in 3Q10.

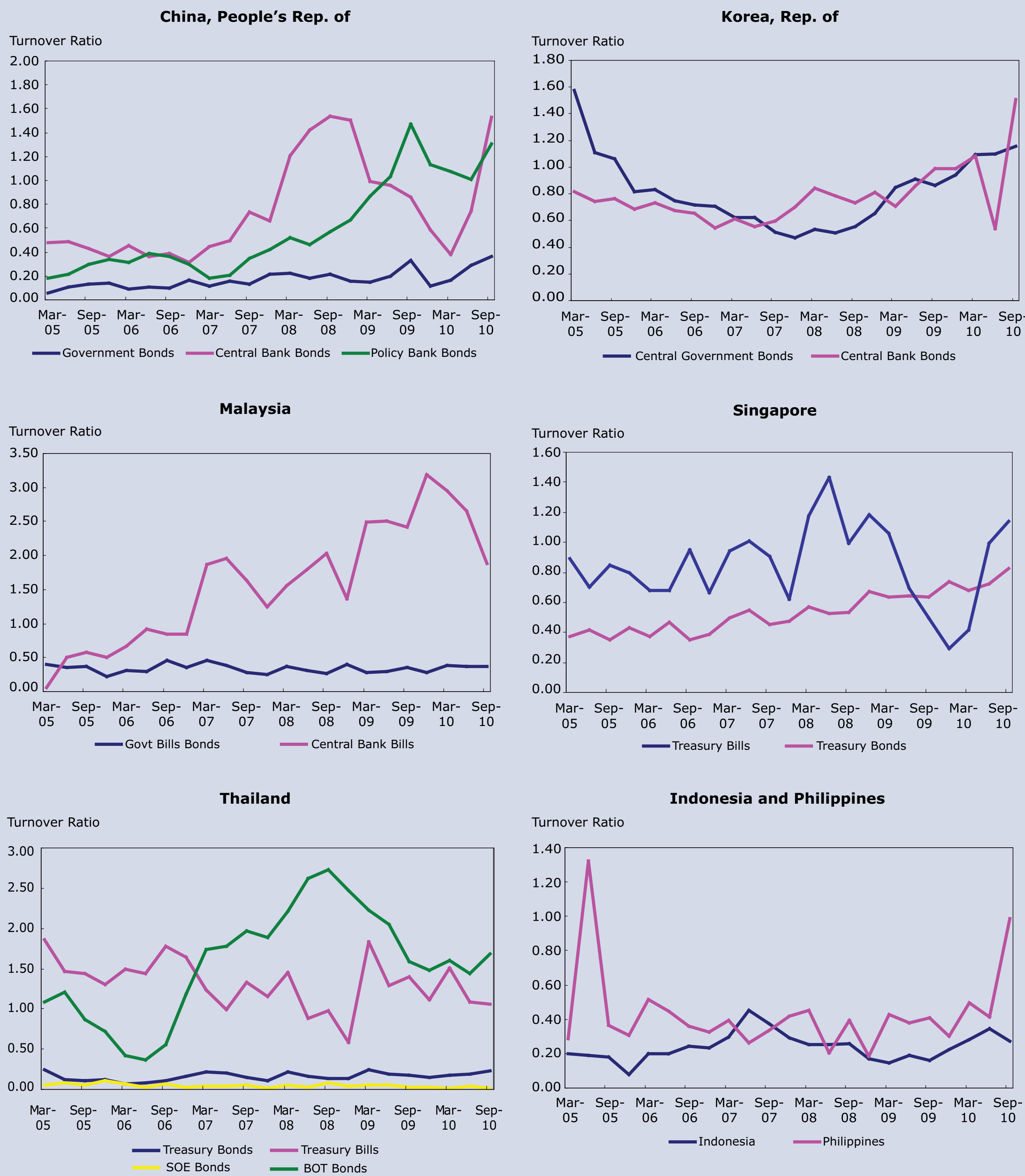
Figure 12 puts these developments in a multi-year perspective, demonstrating that liquidity ratios in most markets have been on an upward trend since at least the latter part of 2008. This reflects the combined impact of accommodative monetary policies and expansionary fiscal policies, as well as continued inflows of foreign capital—and liquidity—into Asia over the last several years. Additionally, it reflects the specific efforts of governments in Singapore, the Republic of Korea, and the Philippines to consolidate their respective bond issuances through exchange offers and by re-opening existing bond issues to further increase the size of these issues and improve their liquidity.

Amid this environment of rising liquidity in LCY bond markets, *AsianBondsOnline* conducted its annual Bond Market Liquidity Survey.

AsianBondsOnline Annual Bond Market Liquidity Survey

The 2010 survey polled 112 respondents, which was up slightly from 106 participants in 2009 and considerably higher than the 40–50 participants polled in previous years, and included trading desk staff and managers, portfolio managers, and bond market analysts and strategists, as well as pricing agencies. The number of domestic and foreign firms and institutions surveyed was exactly equal:

Figure 12: Trends in Quarterly Government Bond Turnover Ratios



Source: *AsianBondsOnline*.

56 employees of foreign firms and institutions, and 56 employees of domestic firms and institutions. Respondents were asked to give quantitative and qualitative responses on measures of liquidity in emerging East Asian LCY bond markets, as well as their views on the appropriate policies needed to improve liquidity and efficiency.

Market participants were asked to provide representative bid–ask spreads and accepted bond transaction sizes for both "on-the-run" and "off-the-run" government bonds. In the case of corporate bonds, survey participants were asked to provide (i) bid–ask spreads at the time when a new bond is issued, and (ii) typical market-accepted transaction sizes.

The survey analysis includes a table for benchmark government bonds for each market—usually the most representative treasury bond—which allows for comparisons among the individual markets of emerging East Asia. For the larger markets that issue a variety of both government and corporate bonds, the analysis compares the different types of bonds in each market in terms of the bid–ask spread and average transaction size. Data for turnover ratios show that the ratios for various types of government bonds within a single market can sometimes vary more than ratios between markets. Thus, intra-market variations in liquidity between different bond types are sometimes as important as variations between different markets.

Table 9 summarizes the indicators for the benchmark bond in each market, which, as mentioned above, is usually a treasury or equivalent type of bond. Market participants were asked to provide data representative of bid–ask spreads and market-accepted transaction sizes for both on-the-run and off-the-run government benchmark bonds for the end-August to mid-October period in which the survey was conducted.

Bid–Ask Spreads. The bid–ask spread is perhaps the most commonly used measure of market liquidity as it directly measures the cost of executing a trade. However, bid–ask spreads are only valid for market-accepted transaction sizes and for a limited period of time.

The average on-the-run bid–ask spread for the government benchmark bond in each of the nine markets surveyed, as reported by a total of 102 market participants, was 7.2 basis points, which was tighter than 8.6 in 2009. The standard

Table 9: Government Bond Market Quantitative Indicators

		PRC	HK	ID	KR	MY	PH	SG	TH	VN	Regional
Typical Bid-Ask Spread "On-the-Run" (bps)	Average	2.2	5.1	31.7	1.1	2.6	3.1	3.0	3.1	13.2	7.2
	Count	12	5	15	20	11	11	10	14	4	102
	SD	0.7	1.5	16.5	0.5	1.1	2.3	0.7	1.4	9.3	9.8
Typical Bid-Ask Spread "Off-the-Run" (bps)	Average	5.1	5.8	38.2	1.7	6.2	12.4	3.5	7.7	25.7	11.8
	Count	5	3	15	20	8	10	9	12	4	86
	SD	1.7	1.4	22.1	1.4	2.8	8.3	0.5	4.4	20.5	12.2
Accepted LCY bond Transaction Size "On-the-Run" (USD million)	Average	16.9	15.7	1.9	8.6	2.0	4.5	8.6	1.9	2.3	6.9
	Count	12	5	15	20	10	12	9	14	5	102
	SD	15.8	10.1	1.4	1.0	0.5	5.1	5.4	1.6	0.7	6.0
Accepted LCY Bond Transaction Size "Off-the-Run" (USD million)	Average	11.0	11.6	1.4	8.5	1.5	1.3	8.9	1.2	2.2	5.3
	Count	3	4	15	20	7	7	8	11	4	79
	SD	4.9	9.7	0.6	1.4	0.2	0.3	5.7	0.9	0.8	4.6

bps = basis points; HK = Hong Kong, China; ID = Indonesia; KR = Republic of Korea; LCY = local currency; MY = Malaysia; PH = Philippines; PRC = People's Republic of China; SD = standard deviation; SG = Singapore; TH = Thailand; VN = Viet Nam.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

deviation was 9.8 in 2010 compared with 10.0 in 2009. The average bid–ask spread tightened for the PRC, Philippine, Vietnamese, and Thai markets. It was largely unchanged in the Republic of Korea and Singapore, and widened somewhat in Hong Kong, China; Indonesia; and Malaysia. The tightening of the Philippine market accelerated after the presidential election in May. The lowest bid–ask spread was 1.1 basis points in the Republic of Korea, followed by 2.2 basis points in the PRC and 2.6 basis points in Malaysia. The tightening of bid–ask spreads in the region as a whole reflected the combined effects on overall market liquidity of economic stimulus programs, accommodative monetary policies and large capital inflows.

Liquidity can also be measured by the difference between bid–ask spreads for on-the-run and off-the-run bonds, given that the more liquid on-the-run benchmark bonds have tighter spreads. The largest differences between on-the-run and off-the-run bid–ask spreads were in the Philippines and Viet Nam. In some markets, such as the PRC, the Republic of Korea, and Singapore, the off-the-run market is very small. In fact, the majority of respondents from the PRC viewed the off-the-run market as the less meaningful of the two.

Average Transaction Size. Transaction size is a useful measure of market depth. It is an ex-post measure of the quantity of bonds that can be traded at the bid or ask price. In this survey, the average transaction size for on-the-run government bonds ranged from a low of USD1.9 million–USD2.0 million (equivalent) in Indonesia, Thailand, and Malaysia, to a high of USD16.9 million in the PRC. In Hong Kong, China, the average transaction size for on-the-run bonds was USD15.7 million, followed by USD8.6 million for both the Republic of Korea and Singapore. Average trading sizes for the Philippines and Viet Nam were lower, with average trading sizes of USD4.5 million and USD2.3 million, respectively.

These figures represent a significant increase from 2009 when the average trading sizes in the lower-bound markets were USD1.1 million in the Philippines, USD1.5 million in Indonesia, and USD1.6 million in Thailand, while the largest average trading size was USD14.3 million in the PRC. Some of these increases reflect capital inflows and a strengthening of local currencies against the United States (US) dollar. But in markets where bid–ask spreads have declined, trading desks have sought to trade in larger volumes to maintain the profitability of their trading activity.

Finally, the average trading size for off-the-run bonds was lower than for on-the-run bonds in most government bond markets in 2010, although not much lower in the more liquid markets.

Characteristics of Individual Government Bond Markets

As mentioned above, the survey also collected data on bid–ask spreads and average transaction sizes for the different types of bonds in the larger markets, as well as information on market structure developments.

People's Republic of China. Market liquidity greatly increased in the PRC over the last year, resulting in a drop in bid–ask spreads to 2–3 basis points, not only for treasury bonds but also for bonds issued by policy banks **(Table 10)**. Policy bank bonds trade on a basis roughly equivalent to treasury bonds, except that the tradable universe of treasury bonds tends to comprise those with maturities of 7–10 years, while the most tradable policy bank bonds tend to have tenors of 5–7 years.

Survey participants reported that bonds and bills issued by the People's Bank of China (PBOC) trade with bid–ask spreads of 0.5–2.0 basis points, depending on maturity. (PRC market participants view the benchmark PBOC bond as a "bill" and therefore see no practical difference between PBOC bonds and bills.) The shortest maturity for a PBOC bill is 3 months and the longest maturity for a PBOC bond is 3 years. PBOC bills and bonds are generally more liquid than policy bank bonds and treasury bills and bonds, with an average bid–ask spread of around 1.5 basis points and an average trading size of CNY285.9 million for PBOC bills and

Table 10: PRC Government Bond Survey Results

	Government Bonds	Policy Bank Bonds	PBOC Bonds	Government Bills	PBOC Bills
Bid–Ask Spread (bps)	2.2	2.8	1.5	2.3	1.5
Average Trading Size (CNY million)	113.3	109.2	290.6	141.7	285.9

bps = basis points, PBOC = People's Bank of China, PRC = People's Republic of China.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

CNY290.6 million for PBOC bonds. This compares with average trading sizes of CNY113.3 million for government bonds, CNY109.2 million for policy bank bonds, and CNY141.7 million for treasury bills. The bid–ask spread for treasury bills is roughly the same as for government bonds.

Since the survey was conducted, bid–ask spreads for government benchmark bonds have risen to levels as high as 3–6 basis points in response to recent policy rate hikes by the PBOC. Market observers, however, expect bid–ask spreads to settle down to about 3 basis points as the market adjusts to recent policy developments.

Trading in off-the-run bonds is very limited in the PRC at the present time. This reflects the issuance of most treasury and policy banks bonds in almost identical sizes of roughly CNY30 billion, as well as the ample liquidity generated by the PBOC's accommodative monetary policy of the last several years.

The most important hedging product in the PRC market is the interest rate swap (IRS) and the most important benchmark for the IRS market is the 7-day repo rate, which comprises about 50%–60% of the IRS market, followed by the 3-month Shanghai Interbank Offered Rate (SHIBOR), which comprises about 30%–40% of the IRS market.

Two interesting developments that may have a significant effect on the PRC's LCY bond market in 2011 are (i) the emergence of the offshore yuan market in Hong Kong, China; and (ii) a recent decision by the National Association of Financial Market Institutional Investors (NAFMII), which is a trade body set up by the PBOC, to launch its much-anticipated credit default swap (CDS) market. Regarding the first development, the Asian Development Bank (ADB) issued a CNY1.2 billion bond at a coupon of 2.8% in October to raise funds for its projects in the PRC and to establish a 10-year benchmark for yuan bond issuers in Hong Kong, China. Meanwhile, NAFMII has structured its CDS market to avoid the pitfalls of CDS markets in Europe and the US, which contributed heavily to the recent financial crisis, and to trade through the Shanghai interbank clearing system.

Republic of Korea. Bid–ask spreads for on-the-run Korean Treasury Bonds (KTBs) were little changed between 2009 and 2010 at 1.1 basis points, although the average trading size rose slightly to USD8.6 million from USD8.0 million last year (Table 9). Typical bid–ask spreads of 1.1 basis points for Bank of Korea (BOK) Monetary Stabilization Bonds (MSBs) were roughly the same as for KTBs, although the average trading size of KRW9.3 billion for MSBs was slightly less than KRW9.8 billion for on-the-run KTBs **(Table 11)**. In the off-the-run segment of the market, however, the typical bid–ask spread of 1.7 basis points for KTBs was modestly larger than 1.3 basis points for MSBs. As in the on-the-run market, the average trading size for off-the-run MSBs of KRW9.2 billion was less than the off-the-run trading size of

Table 11: Republic of Korea Government Bond Survey Results

	Treasury Bonds	MSB	BOK Bills
On-the-Run			
Bid–Ask Spread (bps)	1.1	1.1	1.5
Average Trading Size (KRW billion)	9.8	9.3	9.1
Off-the-Run			
Bid–Ask Spread (bps)	1.7	1.3	1.7
Average Trading Size (KRW billion)	9.7	9.2	9.1

bps = basis points, BOK = Bank of Korea, MSB = Monetary Stabilization Bonds.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

KRW9.7 billion for KTBs. Typical bid–ask spreads for BOK bills, however, were slightly higher: 1.5 basis points for on-the-run bills and 1.7 basis points for off-the-run bills. The average trading sizes for both on-the-run and off-the-run BOK bills were roughly the same at KRW9.1 billion.

As mentioned previously, liquidity for KTBs dramatically improved in 2010 in large part due to the high level of capital inflows into the Republic of Korea. KTBs are especially attractive to foreign investors because the government of the Republic of Korea has successfully consolidated issues by offering new bonds in larger sizes and frequently re-opens benchmark issues to improve their liquidity.

One of the more interesting structural changes under consideration in the KTB market includes a government plan to introduce the Republic of Korea treasury bills. The current short-term benchmark in the market is a 3-month certificate of deposit, which the government believes is not a sufficiently flexible monetary instrument since it fails to quickly respond to financial market changes.

The market is watching another government plan to effect structural change in the KTB market by introducing a 10-year KTB futures contract, although the current 3-year KTB futures contract is liquid and popular. In 3Q10, the number of 3-year KTB futures contracts traded rose 2.5% q-o-q and 30.2% year-on-year (y-o-y) to 6.6 million. Still, the government is seeking to establish a 10-year futures market for the purpose of supporting its efforts to extend the tenor on future KTB issues and has already taken supporting steps, such as making cash settlement available as a means for settling trades of 10-year futures contracts.

Thailand. The 2010 liquidity survey results for Thai government bonds showed an average on-the-run bid–ask spread of 3.1 basis points for benchmark treasury bonds **(Table 12)**. Bid–ask spreads for BOT bonds and bills were slightly wider than for treasury bonds, while the bid–ask spreads for treasury bills were slightly tighter than for treasury bonds. Average off-the-run bid–ask spreads were highest for treasury bonds at 7.7 basis points, while off-the-run BOT bonds were slightly less at 6.3 basis points. Treasury bills and BOT bills had a typical off-the-run bid–ask spread of 4.9 and 5.2 basis points, respectively. The average on-the-run transaction size for treasury bonds stood at THB56.4 million, with BOT bonds at a larger average size of THB68.6 million. Treasury bills and BOT bills had the largest average transaction sizes at around THB130 million.

Table 12: Thailand Government Bond Survey Results

	Treasury Bonds	BOT Bonds	Treasury Bills	BOT Bills
On-the-Run				
Bid–Ask Spread (bps)	3.1	3.6	3.0	3.2
Average Trading Size (THB million)	56.4	68.6	129.5	129.5
Off-the-Run				
Bid–Ask Spread (bps)	7.7	6.3	4.9	5.2
Average Trading Size (THB million)	35.5	46.6	76.6	76.6

bps = basis points, BOT = Bank of Thailand.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

Malaysia. The Malaysian government LCY bond market is subdivided into four major components **(Table 13)**. According to data from the Fully Automated System for Issuing/Tendering (FAST) of Bank Negara Malaysia (BNM), liquidity in recent months has been limited to only a few Malaysian Government Securities (MGS) and Government Investment Issues (GII) bonds. The most liquid segment of the bond market in 3Q10 consisted of central bank bills, with a turnover ratio of 1.89. Bid–ask spreads for MGS and GII bonds averaged 2.6 and 2.8 basis points, respectively. Average bid–ask spreads for both BNM bills and treasury bills were 4.9 basis points. Average trading sizes for these securities were around MYR6.2 million for MGS and around MYR13.0 million for BNM bills and treasury bills. Bid–ask spreads for off-the-run MGS and GII were significantly wider and average trading sizes somewhat lower than their on-the-run counterparts. Bid–ask spreads for off-the run BNM bills and treasury bills were also somewhat wider than for on-the-run bills, but average trading sizes were significantly lower.

Table 13: Malaysia Government Bond Survey Results

	MGS	GII	BNM Bills	Treasury Bills
On-the-Run				
Bid–Ask Spread (bps)	2.6	2.8	4.9	4.9
Average Trading Size (MYR million)	6.2	6.7	13.3	13.3
Off-the-Run				
Bid–Ask Spread (bps)	6.2	6.8	5.3	5.3
Average Trading Size (MYR million)	4.5	5.0	5.0	5.0

BNM = Bank Negara Malaysia, bps = basis points, GII = Government Investment Issues, MGS = Malaysian Government Securities.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

Qualitative Indicators for Government Bond Markets

Participants in the region's government and corporate bond markets were asked questions about market structure and ways to improve liquidity. The following spider charts capture market participants' perceived importance of the following bond market structure and policy issues:

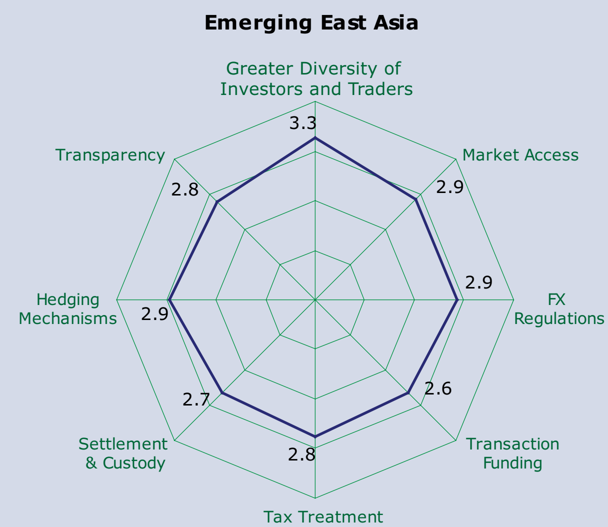
(i) greater diversity of investors and traders,
(ii) easing other restrictions on market access,
(iii) easing of foreign exchange regulations and restrictions,
(iv) funding availability for market participants,
(v) tax treatment,
(vi) settlement and custody,
(vii) more efficient hedging instruments, and
(viii) transparency.

Market participants were asked to assign a value between 1 and 4 to reflect the perceived importance of each issue in strengthening market structure and improving liquidity:

4 = Very important
3 = Important
2 = Somewhat important
1 = Not important

Figure 13 summarizes the results of the government bond market structure section of the 2010 *AsianBondsOnline* liquidity survey. It reveals that the most important structural issue for participants in the region's government bond markets was investor diversity, which had the highest score of 3.3, followed by hedging mechanisms, market access, and foreign exchange regulations, all with scores of 2.9. Comparing the 2010 survey results with 2009, market participants appeared to put more importance on structural issues this year.

Figure 13: Regional Averages—Government Bond Market Structural Issues



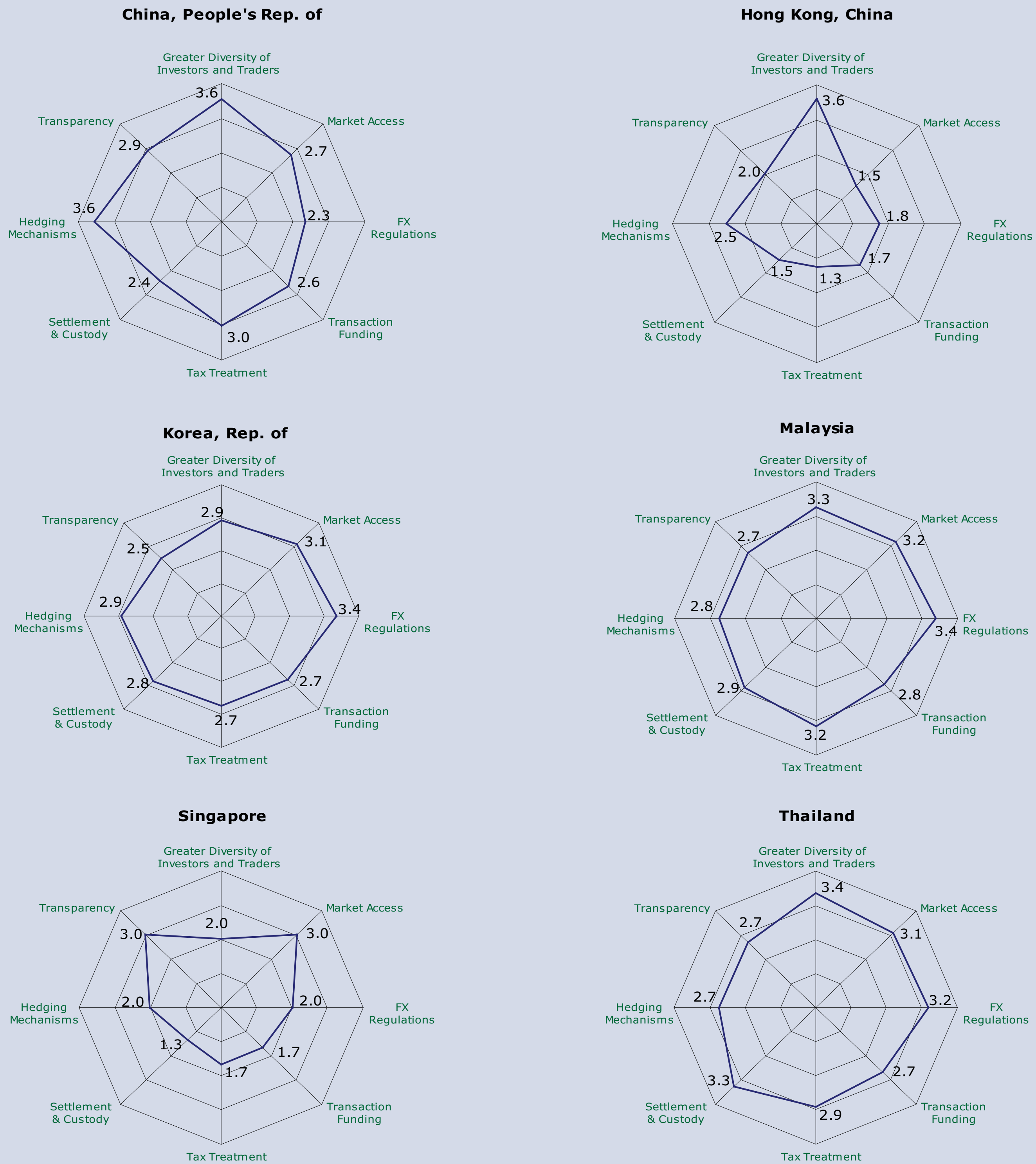
FX = foreign exchange.
Notes: Emerging East Asia comprises People's Republic of China; Hong Kong, China; Indonesia; Republic of Korea; Malaysia; Philippines; Singapore; Thailand; and Viet Nam.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

Figure 14 provides spider charts for each individual government bond market in emerging East Asia.

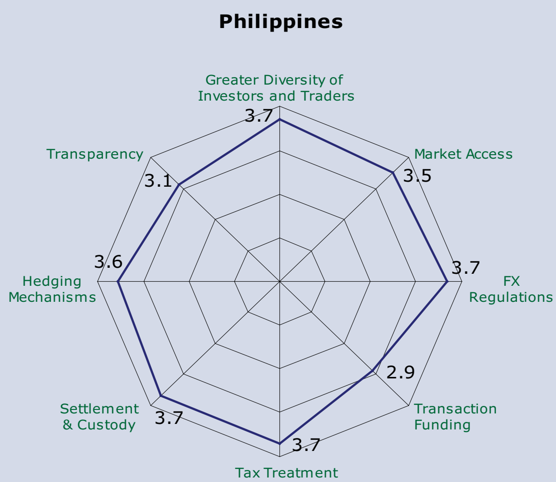
Greater Diversity of Investors and Traders

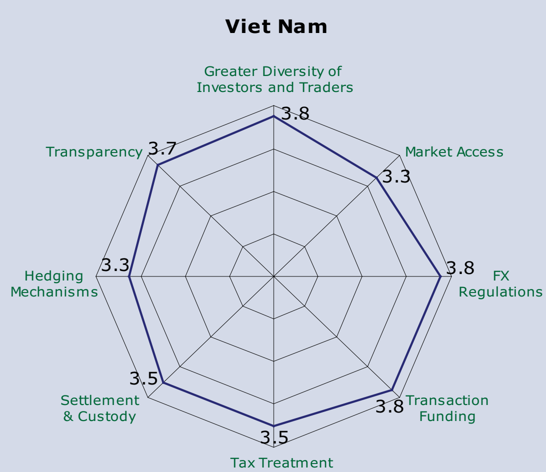
Greater investor diversity was viewed in most government bond markets in emerging East Asia as being important for promoting liquidity. This was especially true in Viet Nam, which registered the highest score for this indicator at 3.8, followed by the Philippines (3.7); the PRC (3.6) and

Figure 14: Structural Issues for Individual Government Bond Markets



FX = foreign exchange.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.





Hong Kong, China (3.6); Thailand (3.4); Malaysia (3.3); Indonesia (3.2); and the Republic of Korea (2.9). On the other hand, Singapore had the lowest score for this category at 2.0, indicating that greater investor diversity was only somewhat important for participants in this market.

Banks and other financial institutions continue to dominate most LCY government bond markets in emerging East Asia. As of June, banks' holdings of LCY treasury bonds in the PRC stood at about 60% of the total. Meanwhile, in the Republic of Korea, financial institutions—banks, insurance firms, pension funds, and other financial institutions—also held about 60% of all KRW-denominated government bonds.

Foreign investor holdings of LCY government bonds in some of the region's markets have risen rapidly over the last year, but these foreign holdings continue to be much smaller than the bond holdings of domestic investors.[5]

Hedging Mechanisms

The availability of hedging or derivative instruments (e.g., forwards, futures, options, swaps) had an average score of 2.9 across the region, suggesting that the increased availability of such mechanisms is an important requirement for promoting greater bond market liquidity. This criterion had the highest scores in the PRC and the Philippines at 3.6 each, followed by Indonesia and Viet Nam at 3.3 each. In Hong Kong, China and Singapore, however, the ratings were only 2.5 and 2.0, respectively.

Certain hedging instruments are currently available in emerging East Asian markets. For example, in Hong Kong, China, interest rate and cross-currency swaps are available and relatively liquid, as are 3-year Exchange Fund Note (EFN) futures. Interest rate and cross-currency swaps are also offered in the PRC. In the Republic of Korea, 3-, 5-, and 10-year KTB and MSB futures are offered, but only the 3-year KTB futures are currently liquid. Furthermore, the short-selling of government

[5] See Figure 3 in "Bond Market Developments in the Third Quarter of 2010."

securities is allowed under certain conditions in most emerging East Asian markets.

Foreign Exchange Regulations

Government bond market participants generally rated foreign exchange regulations as being important, with a regional average score of 2.9. Participants in several markets in particular highlighted the importance of the relationship between foreign exchange regulations and bond market liquidity, including Viet Nam (3.8), the Philippines (3.7), the Republic of Korea (3.4), Malaysia (3.4), and Thailand (3.2). However, for the PRC; Hong Kong, China; Indonesia; and Singapore, foreign exchange restrictions were considered to be only somewhat important.

Market Access

On average, market access was deemed an important issue by government bond market participants in the region, garnering a score of 2.9. Specifically, participants rated market access as important in the Philippines (3.5), Viet Nam (3.3), Malaysia (3.2), the Republic of Korea (3.1), Thailand (3.1), and Singapore (3.0). Market participants in the PRC (2.7) and Indonesia (2.5) felt less strongly about the importance of increasing market access. Finally, Hong Kong, China recorded the lowest score for this criterion at 1.5.

Other Indicators

The other indicators included in the survey on bond market liquidity—settlement and custody, tax treatment, transaction funding, and transparency—averaged between 2.6 and 2.8 across the region, suggesting that these issues were less important for market participants when compared with the four indicators detailed above.

Corporate Bond Market Trends

Corporate bond market participants were asked to respond to questions similar to the ones put to government bond market participants, with some slight variation. **Table 14** compiles the responses from corporate bond market participants with regard to average bid–ask spreads and trading sizes.

Bid–Ask Spreads. Bid–ask spreads for corporate bonds are typically much higher than those for government bonds, reflecting much lower levels of liquidity, which in many cases is limited to the months immediately following issuance. Emerging East Asia corporate bonds tend to be quickly absorbed by buy-and-hold investors. In Table 14, Indonesia had the highest average bid–ask spreads for corporate bonds at 99.7 basis points. The second highest bid–ask spread was 30.5 basis points for the Philippines. Other markets ranged between 5.7 basis points (PRC) and 25.0 basis points (Viet Nam).

Typical Transaction Size. Participants in the liquidity survey identified the largest average transaction sizes for corporate bond trades in Hong Kong, China (USD9.7 million) and the Republic of Korea (USD8.8 million). The PRC had the next largest average transaction size for corporate bond trades at USD6.4 million. Average transaction sizes in the region's other markets ranged from USD2.9 million in Malaysia to a low of USD0.3 million in the Philippines.

Inter-Market Comparisons

People's Republic of China. The most liquid elements of the PRC's corporate bond market in recent years have been its medium-term note (MTN) and commercial paper segments. In 3Q10, the stock of MTNs outstanding rose by 12.0% q-o-q and 73.8% y-o-y, while commercial papers outstanding increased by 9.0% q-o-q and 89.9% y-o-y. Robust growth in both of these segments has contributed to the relatively high turnover ratios for these types of securities **(Figure 15)**. By comparison, the turnover ratios for bonds issued by state-owned enterprises (SOEs) were much lower in 3Q10.

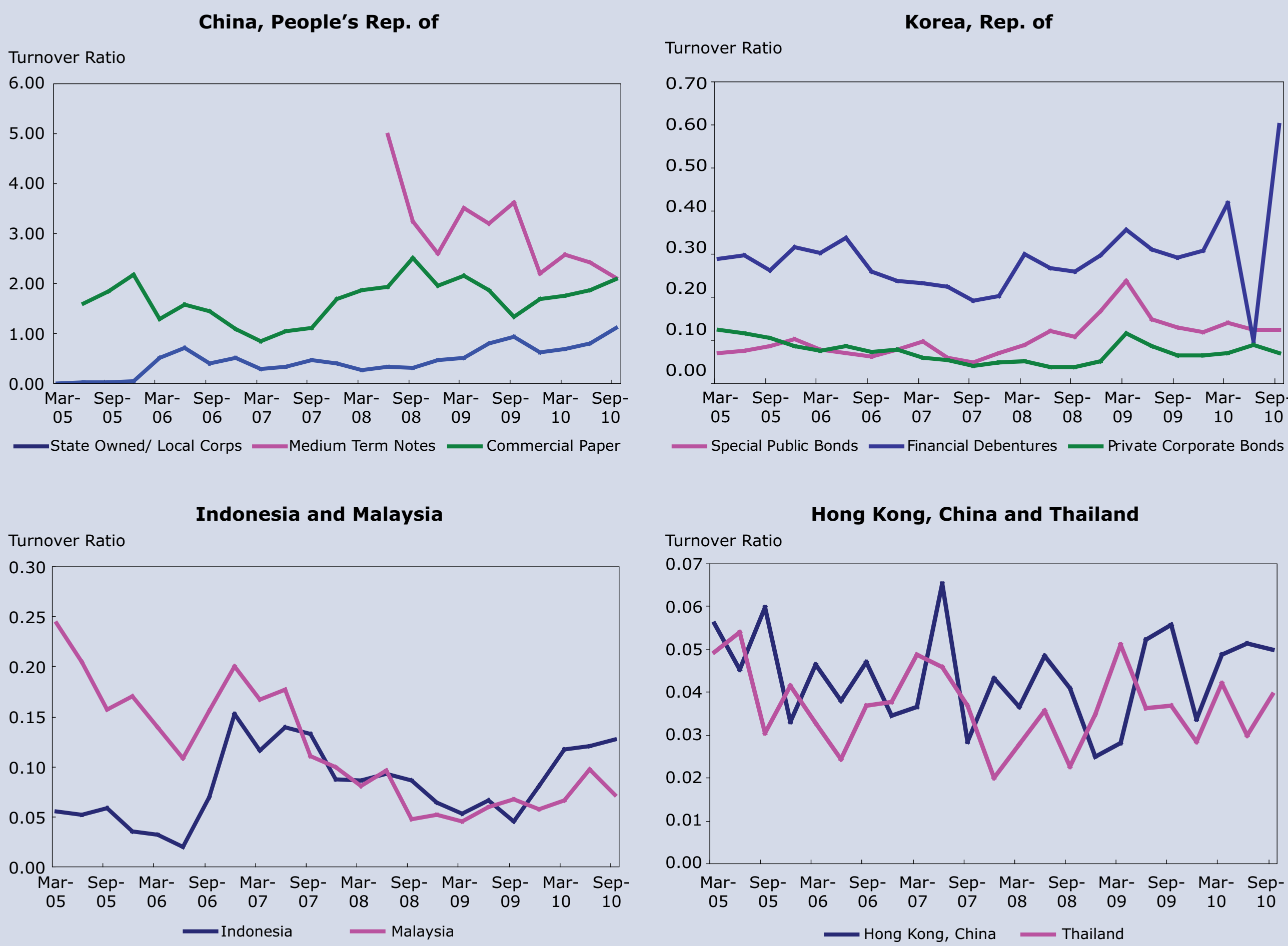
Overall, bid–ask spreads for MTNs and commercial papers were tighter than the bid–ask spreads for SOE and commercial bank bonds **(Table 15)**.

Table 14: Corporate Bond Market Quantitative Indicators

		PRC	HK	ID	KR	MY	PH	SG	TH	VN	Regional
Typical Issue Size of Corporate Bonds (USD million)	Average	458.8	48.3	123.4	50.4	131.8	127.9	193.0	115.4	84.7	148.2
Typical Bid–Ask Spread for New Corporate Issues (bps)	Average	5.7	12.5	99.7	2.6	16.0	30.5	10.4	11.1	25.0	23.7
	Count	6	2	8	6	5	5	6	10	3	51
	SD	1.5	10.6	46.6	1.0	2.2	5.7	4.6	6.3	5.0	29.8
Typical Transaction Size of LCY Corporate Bonds (USD million)	Average	6.4	9.7	0.8	8.8	2.9	0.3	2.8	0.7	2.6	3.9
	Count	6	2	8	6	5	5	6	10	3	51
	SD	2.6	4.6	0.2	-	1.4	0.2	0.8	0.4	-	3.5

— = not applicable; bps = basis points; HK = Hong Kong, China; ID = Indonesia; KR = Republic of Korea; LCY = local currency; MY = Malaysia; PH = Philippines; PRC = People's Republic of China; SD = standard deviation; SG = Singapore;TH = Thailand; VN = Viet Nam.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

Figure 15: Trends in Quarterly Corporate Turnover Ratios



Source: *AsianBondsOnline*.

MTNs and commercial papers also traded in larger sizes than SOE bonds do, according to the survey results. Trading sizes for commercial bank bonds were the largest within the PRC corporate bond market, but these issues consisted almost entirely of subordinated debt bonds, which are not particularly liquid.

Table 15: PRC Corporate Bond Survey Results

	SOE Bonds	MTNs	Commercial Bank Bonds	Commercial Paper
Bid–Ask Spread (bps)	5.7	3.9	7.1	3.8
Average Trading Size (CNY million)	42.5	54.2	58.3	57.5

bps = basis points, MTNs = medium-term notes, PRC = People's Republic of China, SOE = state-owned enterprise.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

Republic of Korea. Liquidity trends in the Republic of Korea corporate bond market have been relatively volatile over the past several years. Figure 15 shows that the turnover ratio for special public bonds, which are bonds issued by state agencies and government-owned corporations, rose between 4Q07 and 1Q09 before falling off. The turnover ratio for commercial bank debentures, which has historically been much higher than the ratio for special public bonds, rose sharply throughout 2009 and early 2010 before falling dramatically in 2Q10. This ratio subsequently made a quick recovery to rise to new highs at the end of 3Q10. Meanwhile, the turnover ratio for private sector bonds has historically been extremely low, averaging around 0.1.

The data collected on average bid–ask spreads and transaction sizes across the major types of LCY corporate bonds in the Republic of Korea are broadly consistent with the trends in turnover ratios described above. Financial debentures had the lowest average bid–ask spread at 2.2 basis points, followed by special public bonds at 2.6 basis points. Private corporate bonds had the highest average bid–ask spread at 3.6 basis points. Average transaction sizes, however, are the same across the three types of corporate bonds at KRW10.0 billion **(Table 16)**.

Table 16: Republic of Korea Corporate Bond Survey Results

	Special Public Funds	Financial Debentures	Private Corporate Bonds
Bid–Ask Spread (bps)	2.6	2.2	3.6
Average Trading Size (KRW billion)	10.0	10.0	10.0

bps = basis points.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

Philippines. Trading volume data was not available for the Philippine corporate bond market as a whole. Therefore, turnover ratios for Philippine corporate bonds cannot be calculated as a measure of liquidity.

The Philippines had been one of the most rapidly growing LCY corporate bond markets in Asia until 3Q10 when its growth rate fell to 1.7% q-o-q. Yet, the y-o-y growth rate in 3Q10 was still a robust 22.4%.

The Philippine Dealing and Exchange Corporation (PDEx) maintains a data base on the trading volume of large bonds and bond issuers. The bonds of the Power Sector Assets and Liabilities Management Corporation (PSALM) have become the most actively traded bonds on the PDEx this year. The trading volume of PSALM bonds stood at PHP15.0 billion in 3Q10, comprising 80% of the total trading volume of all PDEx-listed bonds **(Table 17)**. PSALM bonds are classified as government bonds since PSALM is a government company and all of its bonds carry a government guarantee. Thus, PSALM bonds are included in our data base for Philippine government issuance and bonds outstanding, but not in the turnover ratio for Philippine government bonds, which is limited to treasury bonds.

PDEx also provides data on the trading volumes of private sector bonds, such as San Miguel Brewery (PHP1.4 billion), Ayala Corporation (PHP721.8 million), Energy Development Corporation (PHP586.5 million), JG Summit (PHP283.7 million), Globe Telecom (PHP235.1 million), and Tanduay Distillers (PHP165.8 million).

Finally, the average bid–ask spread for Philippine corporate bonds was 30.5 basis points in 2010, down from 43.8 basis points in 2009. The average trading size roughly doubled over the same period from PHP6.3 million to PHP14.1 million (USD0.3 million), following the trend toward much larger trading sizes in the government bond sector, which more than quadrupled between 2009 and 2010.

Table 17: Trading Volume of Top Philippine LCY Corporate Bonds, 1Q10–3Q10

Corporate Bond Issues	1Q10	2Q10	3Q10
	(PHP million)		
Ayala Corp bonds due 2012 and 2017	229.2	238.5	721.8
Globe Telecom bonds due 2012 and 2014	46.3	49.6	235.1
San Miguel Brewery bonds due 2012	958.4	266.4	1,413.6
Energy Development Corp bonds due 2015 and 2016	469.4	707.3	586.5
PSALM bonds due 2015	—	17,567.4	14,982.7
JG Summit bonds due 2014	—	4.7	283.7
Tanduay Distillers bonds due 2015	—	0.0	165.8

— =not applicable, LCY= local currency, PSALM = Power Sector Assets and Liabilities Management Corp. (PSALM).
Source: Philippine Dealing and Exchange Corporation (PDEx)

Malaysia: Malaysian corporate bond liquidity was broadly in the average range for quarterly bond market turnover ratios (0.1 to 0.3) in emerging East Asia in 3Q10, as shown in Figure 15. However, the overall corporate bond market liquidity ratio masks a large difference between liquidity for financial companies and non-financial companies. According to data of the Fully Automated System for Issuing/Tendering (FAST) of BNM, the monthly number of trades for bonds of financial companies is typically two to three times higher than for non-financial companies.[6] The survey results show that the average bid–ask spread for a typical new corporate bond in Malaysia is around 16 basis points, somewhat higher than in the neighboring markets of Singapore and Thailand. The average transaction size was USD2.9 million, somewhat larger than in Singapore, and significantly larger than in Thailand or the Philippines.

Indonesia. Indonesia was the region's most rapidly growing bond market in 3Q10 outside of the PRC. The Indonesian corporate bond market's y-o-y growth rate was 30.7% compared with 50.5% for the PRC, and the Indonesian corporate bond market's q-o-q growth rate of 10.9% was identical to that of the PRC in 3Q10. The Indonesian corporate bond market's y-o-y issuance growth rates in 3Q10 was 325.8%—higher than any other corporate bond market in emerging East Asia on a y-o-y basis. The Indonesian corporate bond market's q-o-q issuance growth rate of 57.4% was exceeded only by that of Singapore (64.8%).

The three most notable issuers in 3Q10 were Indonesia Eximbank (formerly Bank Ekspor Indonesia), the state-owned electricity company PLN, and telecommunications company Telkom (52% state-owned). These three companies issued a series of bonds in 3Q10 for a total of IDR3.0 trillion (USD340 million) each. Most of these bonds carried coupons of 9%–10%. In addition, Bank CIMB Niaga issued IDR1.7 trillion of bonds. The typical bid–ask spread for Indonesian corporate bonds in 2010 was 99.7 compared with 112.5 in 2009, while the average transaction size of USD0.75 million in 2010 was approximately the same level as in 2009.

Singapore: Singapore's corporate bond market grew 7.1% q-o-q in 3Q10, making it the third most rapidly growing corporate bond market in the region on a q-o-q basis. Furthermore, Singapore's corporate bond issuance rose 64.8% q-o-q in 3Q10, the highest q-o-q issuance growth rate recorded for any corporate bond market in emerging East Asia. This impressive performance was driven by a series of issues notable for both their size and duration. The largest of these issues was the impressive SGD1.0 billion (USD159 million) 40-year issue of Temasek Financial. When this

[6] This situation is consistent with *AsiaBondOnline*'s analysis of the Malaysian corporate bond sector, which was published in the second chapter of the October edition of the Asia Bond Monitor (Corporate Bond Market Developments). **Figure 13** of the October edition (page 37) showed that a very large majority of corporate bonds issued in emerging East Asia are issued by financial companies, and this is especially true in Malaysia.

issue was announced in August of this year, it created a new long-dated benchmark for corporate bond issues in Singapore, effectively giving Singapore the longest duration of any corporate bond market in emerging East Asia. Other large issues in 3Q10 included SGD500 million each from City Developments, Ltd., Singapore Airlines (issued with a maturity of 10 years), and the Housing Development Board. Other notable bonds issued with maturities ranging from 10 to 15 years came from the Public Utilities Board, Capitaland, Neptune Orient Lines, SP Powerassets, and Sembcorp Financial Services.

Singapore's corporate bid–ask spreads averaged 10.4 basis points in 2010, down from 12.5 basis points in 2009, while the average transaction size more than doubled in 2010 to USD2.8 million.

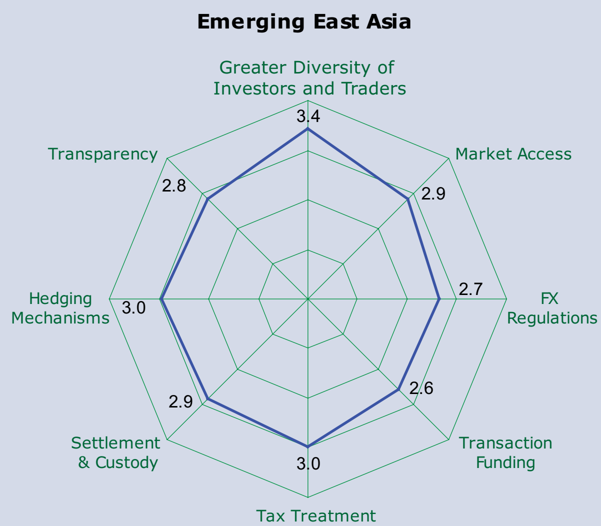
Qualitative Indicators for Corporate Bond Markets

Figure 16 summarizes the results of the corporate bond market structure section of the 2010 *AsianBondsOnline* Bond Market Liquidity Survey. The results are similar in many respects to the spider charts for the government bond market. For example, the most important structural issue for participants in the region's corporate bond market was investor diversity. The score of 3.4 for investor diversity in the corporate bond market survey was slightly higher than the 3.3 score in the government bond market survey. The responses of corporate bond market participants were also very similar to those of government bond market participants with respect to market access, transaction funding, hedging mechanisms, and transparency.

However, corporate bond market responses were higher than the government bond market responses for tax treatment (3.0 vs. 2.8), settlement and custody (2.9 vs. 2.7), and hedging mechanism (3.0 vs. 2.9).

The corporate bond market responses differ significantly across individual markets **(Figure 17)**.

Figure 16: Regional Averages—Corporate Bond Market Structural Issues



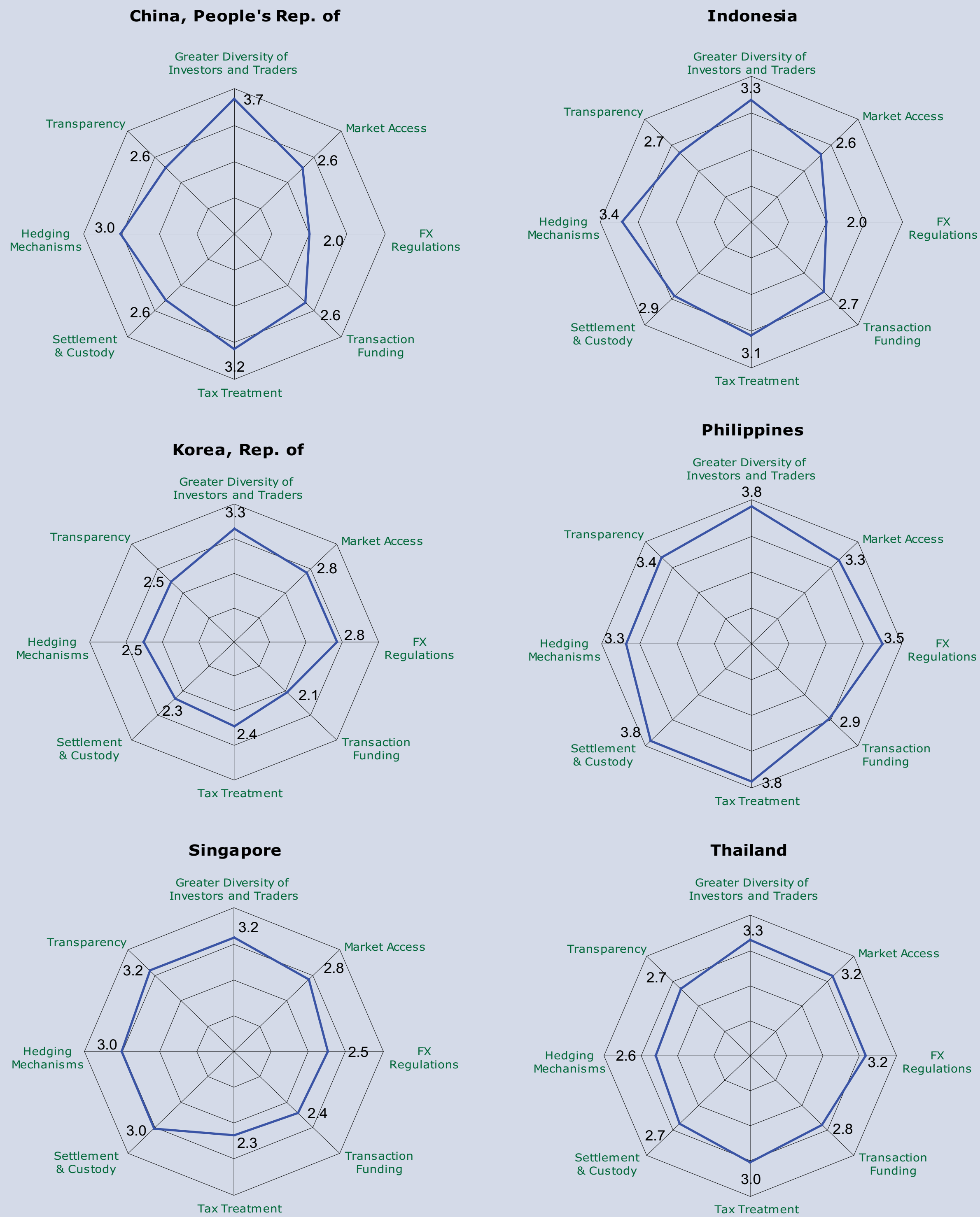
FX = foreign exchange.
Notes: Emerging East Asia comprises the People's Republic of China; Hong Kong, China; Indonesia; Republic of Korea; Malaysia; Philippines; Singapore; Thailand; and Viet Nam.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.

The two corporate bond markets where survey participants were seeking the most structural changes were in the Philippines and Thailand. Still, survey participants from Thailand gave scores ranging between 2.6–2.7 for transparency, availability of hedging mechanisms, and settlement custody. Respondents from the Philippines placed more weight on reforming market structure as evident by scores of 3.0–4.0 for all market structure categories, with the exception of transaction funding (2.9).

Average market structure scores for the corporate bond market in the Republic of Korea were the lowest among all markets surveyed, ranging between 2.0 and 3.0, with the exception of investor diversity, which had an average score of 3.3.

Scores for Indonesia, Singapore, and the PRC, which were the three most rapidly growing corporate bond markets in 3Q10, lay in a range of 2.0–3.0 for the majority of market structure categories. Market access, foreign exchange regulations, and transaction funding were criteria that generated scores of 2.8 or less in Indonesia, Singapore, and the PRC, which is to suggest that these issues were deemed as less than important by most participants in these markets. Other issues—such as tax treatment, settlement and custody, and transparency—generated scores that varied considerably across the three markets, reflecting differences in market structures and operating environments.

Figure 17: Structural Issues for Individual Corporate Bond Markets



FX = foreign exchange.
Source: *AsianBondsOnline* 2010 Local Currency Bond Market Survey.