AsianBondsOnline Annual Bond Market Liquidity Survey

Introduction

This year's *AsianBondsOnline* Bond Market Liquidity Survey was conducted in September and October for most markets in Emerging Asia.[8] This year's survey assessed the current state of liquidity in emerging Asia's local currency (LCY) bond markets by looking at major indicators of liquidity—turnover ratios, bid–ask spreads, representative trading sizes—as well as how market participants view potential changes in policies and improvements to market infrastructure.

The 2013 survey had 106 replies to the questionnaire for government bonds and 72 replies to the questionnaire for the corporate bond market **(Table 8)**. The replies came from a total of 107 respondents, representing trading desk staff and managers, portfolio managers, bond market analysts and strategists, and bond pricing agency staff. The number of responses from domestic-based and foreign firms was split 49 to 58, respectively.

In this year's survey the most important factors influencing market liquidity across Emerging Asia were external, including concerns about when the United States (US) Federal Reserve would begin to taper its asset purchase program and the recent delay by the US Congress in raising the borrowing limit of the federal government.

Market liquidity has also been driven by the rapidly growing presence of institutional investors such as pension funds, insurance companies, private banking institutions, and asset management companies. While government bond trading desks at commercial banks are still the largest and most important participants in most markets, institutional investors are assuming an increasingly important role in the larger and more well-developed markets.

Finally, issuance continued to be an important factor driving overall market liquidity in 2013, but its relative importance differed among market segments. Issuance from central governments,

Table 8: Number of Liquidity Survey Respondents

	Total Number of Respondents	Respondents for		Respondents from	
		Government Bond Market	Corporate Bond Market	Foreign Firms	Domestic Firms
China, People's Rep. of	17	17	13	9	8
Hong Kong, China	7	7	3	7	0
India	6	6	6	5	1
Indonesia	14	14	8	8	6
Korea, Rep. of	9	9	7	3	6
Malaysia	12	12	6	9	3
Philippines	15	15	10	4	11
Singapore	11	10	8	8	3
Thailand	12	12	7	5	7
Viet Nam	4	4	4	0	4
Total	**107**	**106**	**72**	**58**	**49**

Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

[8] Emerging Asia comprises the People's Republic of China; Hong Kong, China; India; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.

including treasuries and special purpose government entities, rose rapidly in the second and third quarters of 2013 as many governments in the region increased spending.

The growth rate for corporate bond issuance in emerging East Asia on a quarter-on-quarter (q-o-q) basis has been negative in recent quarters. However, corporate issuance in emerging East Asia was still substantial in nominal terms in 3Q13 at US$171 billion. Corporate bonds outstanding still grew rapidly in many markets. Furthermore, many large quasi-sovereign bonds in markets such as the Republic of Korea and Singapore are being issued with longer-dated maturities. Also, more frequent issuance of bonds by mid-sized companies in markets such as Singapore may help improve issuer diversity and liquidity over time.

A good number of survey participants, however, have pointed to structural changes as being more important to market development than the short-term developments described above. Many governments—as well as corporates—are issuing more longer-dated securities, thereby reducing their refinancing risk. Improvements in transparency and the appearance of more hedging and derivatives products are also important. The launch of a government bond futures market in the People's Republic of China (PRC) in September has been an important development, while discussions are underway in many markets for measures to develop more active repurchase (repo) markets. The PRC and India are undertaking measures to expand their quota systems for foreign investors, which is discussed in more detail in the "Market Summary" for each of these two markets. Thus, while market participants are concerned about the sharp fall in market liquidity this year, due largely to events in the US, they are in many cases optimistic about the underlying strength of the region's LCY bond market.

Recent Trends in Quarterly Turnover Ratios for LCY Government Bonds in Emerging Asia

Liquidity—as measured by quarterly turnover ratios—has weakened in most emerging Asian markets in 2013 on a year-to-date basis**.**

- In the PRC, quarterly turnover ratios for all types of government sector bonds, except policy bank bonds (whose turnover ratio has been falling since the middle of 2012), fell in 3Q13 after having risen in 2Q13. The sharpest fall in turnover ratios in 3Q13 was for central bank bonds issued by the People's Bank of China (PBOC), with the ratio falling to 1.22 from 3.06 in 2Q13 **(Figure 11a)**. The turnover ratios for policy bank and treasury bonds fell to almost identical levels of 1.89 and 1.87, respectively, in 3Q13.

- Repo turnover ratios have been holding up the average turnover ratio for all bond-trading transactions in the PRC. Spot turnover ratios for all types of PRC government sector bonds have been falling since the end of 2012, with the pace of this decline accelerating sharply in 3Q13. The turnover ratios for repo transactions actually rose in 2Q13, but have fallen since then by much more modest amounts than has been the case for spot turnover ratios. Repo turnover ratios for the PRC's central bank bonds, policy bank bonds, and treasury bonds are compared in **Figure 11b** with comparable turnover ratios for the same category of cash or spot bond transactions.

- The Republic of Korea has also seen its turnover ratios for central government bonds and central bank bonds fall in 3Q13, declining to similar levels of 0.93 for central government bonds and 0.92 for central bonk bonds. The turnover ratios for both central government and central bank bonds stood at identical levels of 1.06 at the end of 2012 **(Figure 11c)**.

Figure 11a: Trends in Quarterly Turnover Ratios for Spot and Repo Markets in the People's Republic of China

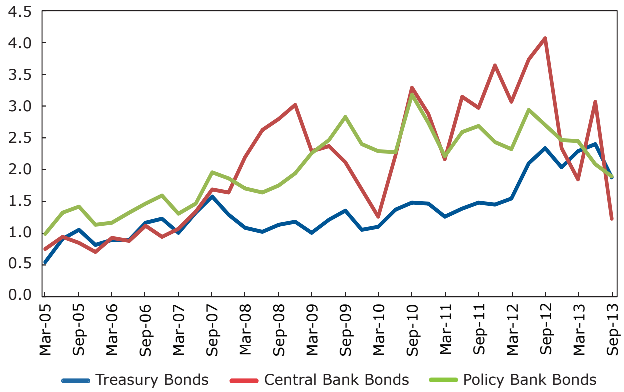


Figure 11b: Trends in Turnover Ratios for Spot and Repo Markets in the People's Republic of China

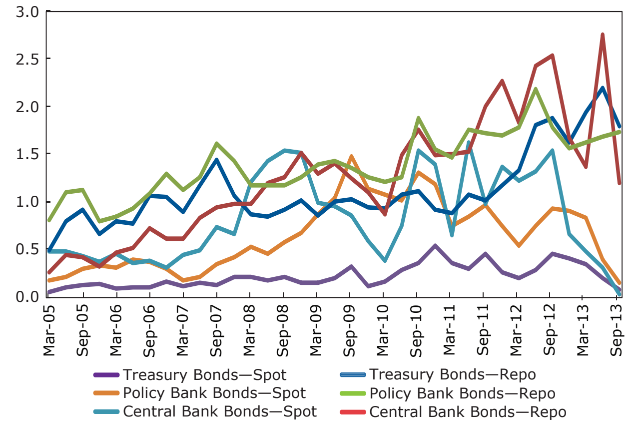


Figure 11c: Trends in Quarterly Turnover Ratios in the Republic of Korea

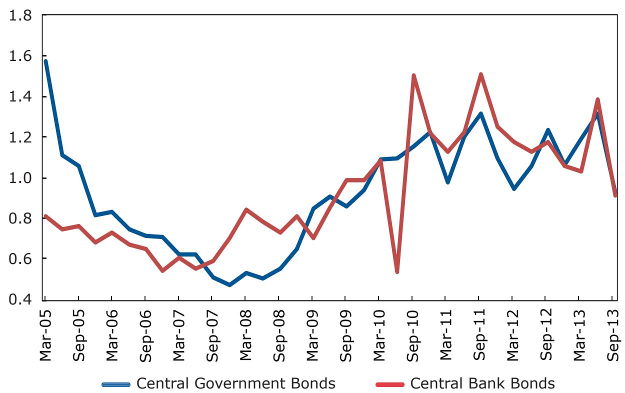


Figure 11d: Trends in Quarterly Turnover Ratios in Malaysia

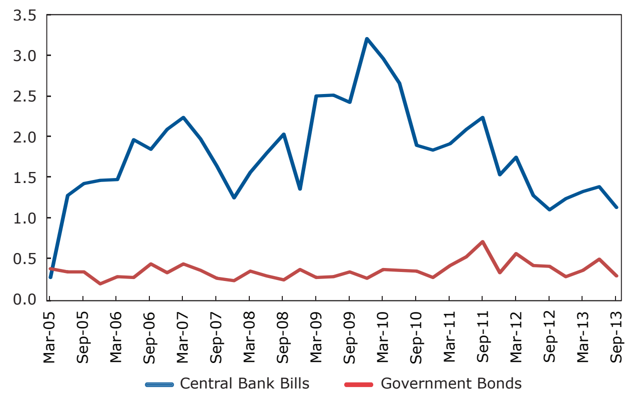


Figure 11e: Trends in Quarterly Turnover Ratios for Malaysian Government Securities

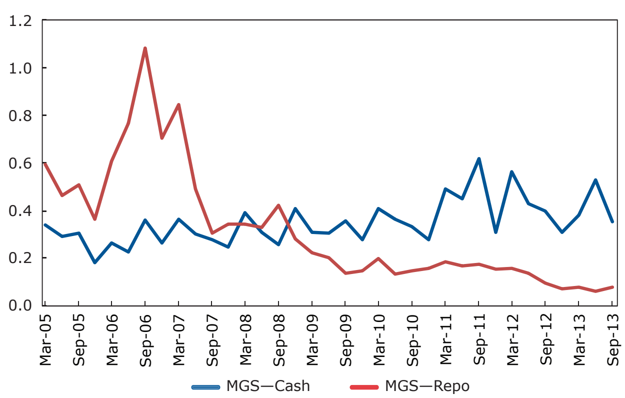
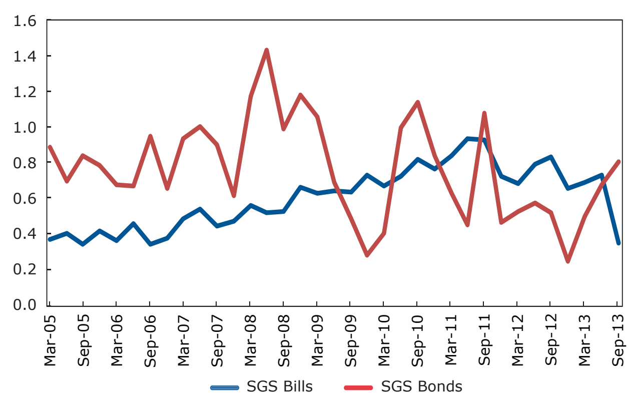


Figure 11f: Trends in Quarterly Turnover Ratios in Singapore



MGS = Malaysia Government Securities, Repo = repurchase, SGS = Singapore Government Securities.
Notes:
1. For the Republic of Korea, central government bonds include treasury bonds and National Housing Bonds.
2. For Malaysia, government bonds include Malaysian Government Securities (MGSs) and Government Investment Issues (GIIs).
3. Turnover ratios are calculated as LCY trading volume (sales amount only) divided by average LCY value of outstanding bonds during each 3-month period.
Source: *AsianBondsOnline*.

Figure 11g: Trends in Quarterly Turnover Ratios in the Philippines

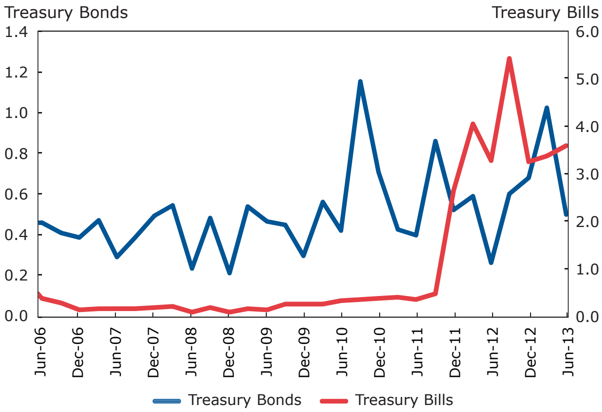


Figure 11h: Trends in Quarterly Turnover Ratios in Thailand

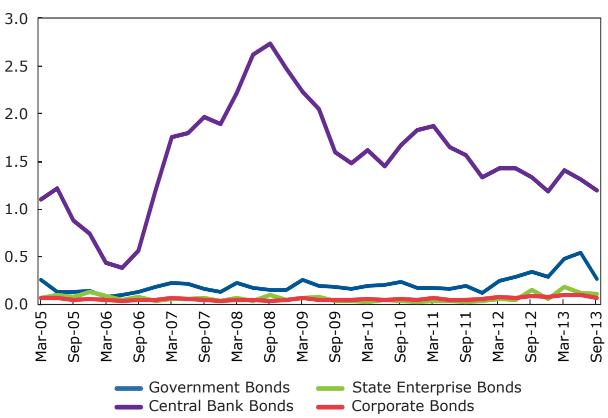
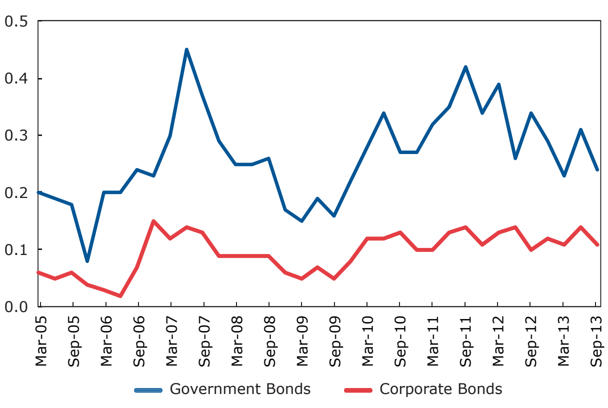


Figure 11i: Trends in Quarterly Turnover Ratios in Indonesia



Notes:
1. For Thailand, September 2013 data based on *AsianBondsOnline* estimates.
2. Turnover ratios are calculated as LCY trading volume (sales amount only) divided by average LCY value of outstanding bonds during each 3-month period.

Source: *AsianBondsOnline*.

- The turnover ratio for Malaysian government bonds declined to a level of 0.30 in 3Q13 from 0.51 in 2Q13, while the turnover ratio for Malaysia's central bank bills have also fallen, albeit from much higher levels of 1.39 in 2Q13 to 1.13 in 3Q13 **(Figure 11d)**.

- Some of the weakness in the turnover ratios for Malaysian government bonds reflects the decline in the turnover ratio for Malaysian Government Securities (MGS) repo bond transactions in 2013, continuing a trend in place since 2008 **(Figure 11e)**. The MGS cash turnover has been fluctuating in the same range in which it moved in 2012.

- Singapore's turnover ratios have been mixed over the last year **(Figure 11f)**. The turnover ratio for Singapore Government Securities (SGS) bills fell in 3Q13, while the turnover ratio for SGS bonds has trended upward. The SGS market is fairly stable with a relatively low turnover ratio.

- In the Philippines, the turnover ratio for treasury bonds rose to 1.03 at the end of 1Q13 before falling back to 0.51 at the end of 2Q13 **(Figure 11g)**. The turnover ratio for treasury bills has remained at much higher levels since early 2012, reflecting consistent demand for relatively small outstanding amounts, as the government has focused its issuance program on the longer-end of the curve.

- The highest turnover ratios in Thailand were for treasury bills (2.43) and central bank bonds and bills (1.18) in 3Q13. Turnover ratios for both government bonds and corporate bonds in Thailand were much lower **(Figure 11h)**. The turnover ratio for government bonds fell to 0.25 in 3Q13 from 0.53 in 2Q13, while the turnover ratio for corporate bonds stood at only 0.06 in 3Q13, reflecting the fact that corporate sector bonds are highly illiquid. Almost 50% of all corporate bonds are held by retail investors, who mainly purchase them on a buy-and-hold basis.

- The turnover ratio for Indonesian government bonds is relatively low, fluctuating in range below 0.5 over the last several years **(Figure 11i)**. The turnover ratio for corporate bonds has followed a similar pattern and was roughly one-half the ratio for government bonds in 3Q13.

Respondents were asked to give quantitative and qualitative feedback on measures of liquidity in emerging Asian LCY bond markets, as well as their views on the appropriate policies needed to improve market liquidity and efficiency. Market participants were asked to provide bid–ask spreads and typical transaction sizes for both "on-the-run" and "off-the-run" government bonds. In the case of corporate bonds, market participants were asked to provide bid–ask spreads at the time when a new bond is issued, as well as average transaction sizes. **Table 9** summarizes the survey results for the region's government bond markets.

Bid–ask Spreads. The bid–ask spread is one of the other most commonly used measures of market liquidity since it directly measures the cost of executing a trade. Bid–ask spreads, however, are only valid for market-accepted transaction sizes and for a limited amount of time. The average reported on-the-run bid–ask spread for a government benchmark bond (typically a treasury bond) in each of the 10 markets surveyed was 5.8 basis points (bps), which is identical to the average of 5.8 bps from the annual *AsianBondsOnline* survey in 2012. Although the region's overall average bid–ask spreads were the same in 2012 and 2013, there were considerable differences in average bid–ask spreads between 2012 and 2013 among individual markets. The lowest on-the-run bid–ask spreads in 2013 were found in the Republic of Korea and India (0.7 bps and 1.3 bps, respectively), followed by Thailand (2.4 bps), Singapore (2.6 bps), Malaysia (3.8 bps), and the PRC (4.1 bps). The widest on-the-run bid–ask spreads were in Viet Nam (21.7 bps); Indonesia (8.6 bps); and Hong Kong, China (7.3 bps). Bid–ask spreads tightened in 2013 in Viet Nam, Singapore, and Thailand, and widened in all other markets surveyed, reflecting the impact on the bond markets of emerging Asia of the 22 May statement of US Federal Reserve Chairman Ben Bernanke and the Federal Reserve's subsequent statement on 19 June. The markets have calmed

Table 9: LCY Government Bond Markets Quantitative Indicators

		PRC	HKG	IND	INO	KOR	MAL	PHI	SIN	THA	VIE	Regional
Typical Bid–Ask Spread "On-the-Run"	Average (bps)	4.1	7.3	1.3	8.6	0.7	3.8	5.4	2.6	2.4	21.7	5.8
	SD	2.7	6.2	0.6	3.3	0.3	2.2	4.3	1.2	1.2	5.8	6.1
	CV	0.6	0.8	0.4	0.4	0.5	0.6	0.8	0.5	0.5	0.3	1.1
Typical Bid–Ask Spread "Off-the-Run"	Average (bps)	6.0	8.0	7.4	13.6	1.3	9.0	16.8	4.3	5.4	40.0	11.2
	SD	3.3	6.4	1.7	4.2	0.8	6.1	8.3	3.1	2.1	10.0	11.1
	CV	0.6	0.8	0.2	0.3	0.7	0.7	0.5	0.7	0.4	0.3	1.0
Accepted LCY Bond Transaction Size "On-the-Run"	Average (US$ million)	11.8	5.1	2.9	2.0	9.3	4.8	1.4	6.2	1.9	3.2	4.8
	SD	7.3	2.9	3.7	1.3	0.0	3.9	0.4	2.1	1.7	0.7	3.4
	CV	0.6	0.6	1.3	0.6	0.0	0.8	0.3	0.3	0.9	0.2	0.7
Accepted LCY Bond Transaction Size "Off-the-Run"	Average (US$ million)	12.7	4.9	0.8	2.8	9.3	3.1	1.1	5.0	1.2	3.2	4.4
	SD	9.9	2.9	0.0	2.7	0.0	1.2	0.5	1.5	0.8	1.7	3.8
	CV	0.8	0.6	0.0	1.0	0.0	0.4	0.5	0.3	0.7	0.5	0.9

bps = basis points; CV = coefficient of variation; HKG = Hong Kong, China; IND = India; INO = Indonesia; KOR = Republic of Korea; LCY = local currency; MAL = Malaysia; PHI = Philippines; PRC = People's Republic of China; SD = standard deviation; SIN = Singapore; THA = Thailand; VIE = Viet Nam.
Note: The bid–ask spreads for Indonesian treasury bonds presented above are expressed in terms of yields or basis points to make them comparable with bid–ask spreads in other Asian markets. Bid–ask spreads for government bonds are most often expressed in terms of "cents" in the Indonesian market. In our 2013 survey, the average treasury bond bid–ask spread was 50.0 bps.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

somewhat since the US Federal Reserve suggested in mid-September that the tapering of its current bond-buying program would not occur in the near-term, and the deadlock over extending the US government's borrowing authority was resolved at least temporarily. Yet, market participants remain concerned that these issues will arise again.

Liquidity can also be measured by the difference between on-the-run and off-the-run bid–ask spreads. The greatest differences were in Viet Nam and the Philippines at 18.3 bps and 11.4 bps, respectively. Viet Nam and the Philippines also had the largest differences between their on-the-run and off-the-run bid–ask spreads last year as well at 10.0 bps and 9.6 bps, respectively. The differences between Viet Nam's on-the-run and off-the-run bid–ask spreads can be explained by the fact that it is still a small and illiquid market in which a large number of individually illiquid bonds are being issued. The difference in bid–ask spreads in the Philippines reflects the fact that liquidity is concentrated in just a few large-sized bonds with long-dated maturities.

The smallest differences between off-the-run and on-the-run bid–ask spreads in the 2013 survey were those for the Republic of Korea (0.6 bps); Hong Kong, China (0.7 bps); and Singapore (1.7 bps). These three markets have well-developed domestic financial markets, stable external financial positions, and assured access to international financial markets. The PRC also has a relatively small difference between its on-the-run and off-the-run bid–ask spreads (1.9 bps).

Table 10 shows that average bid–ask spreads in most government bond markets has increased over 2012 levels in most markets. This widening, however, is only a return to 2011 levels in most cases, revealing that the much narrower bid–ask spreads in 2012 were influenced by the large foreign capital inflows into emerging Asia at that time. Bid–ask spreads in 2009 and 2010, however, were lower than in 2007 and 2008, as bid–ask spreads fell on the back of monetary easing measures in response to the Lehman Brothers shock of 2008.

Average Transaction Size. Transaction size is also is a useful measure of market depth, given that it is an ex post measure of the quantity of bonds that can be traded at the bid or ask price. In this year's survey, average on-the-run transaction sizes (US$ equivalent) for government bonds ranged from a low of US$1.4 million and US$1.9 million for the Philippines and Thailand, respectively, to a high of US$11.8 million for the PRC, followed by US$9.3 million for the Republic of Korea and US$6.2 million for Singapore**.**

Table 10: LCY Government Bond Bid–Ask Spreads

	2006	2007	2008	2009	2010	2011	2012	2013
China, People's Rep. of	7.6	20.0	15.0	5.1	2.2	4.0	2.7	4.1
Hong Kong, China	3.0	8.0	4.0	4.3	5.1	4.7	6.4	7.3
India	–	–	–	–	–	1.0	0.6	1.3
Indonesia	16.9	42.0	24.5	26.6	31.7	32.9	38.8	50.0
Korea, Rep. of	1.4	4.5	1.7	1.1	1.1	0.7	0.6	0.7
Malaysia	2.3	1.5	12.2	2.3	2.6	3.3	2.7	3.8
Philippines	25.3	10.0	19.8	6.6	3.1	5.3	2.1	5.4
Singapore	2.7	3.4	20.0	2.9	3.0	3.8	3.1	2.6
Thailand	3.0	6.3	9.8	3.4	3.1	3.3	3.2	2.4
Viet Nam	–	20.6	75.0	25.6	13.2	33.5	30.5	21.7

– = data not available, LCY = local currency.
Note: Indonesian bid–ask spreads are expressed in "cents."
Source: *AsianBondsOnline* Annual LCY Bond Market Liquidity Survey.

Characteristics of Individual Government Bond Markets

People's Republic of China

Overall, bid−ask spreads and average trading sizes for the PRC in 2013 showed that liquidity worsened when compared with 2012 **(Table 11).** Liquidity in the PRC's bond market was affected by a combination of both domestic and external factors in the second half of 2013.

Central bank bonds were the most affected in 2013 in terms of liquidity. Based on the survey, the bid−ask spreads for PBOC bills and bonds were 2−3 basis bps higher than those for treasury bills and bonds, and policy bank bonds. PBOC bills and bonds also showed a much sharper rise in bid−ask spreads from the prior year, rising 5 bps and 3 bps. In contrast, the bid−ask spread for treasury bills rose less than 2 bps, while the spread for policy bank bonds rose 0.9 bps in the same period.

Average trading declined significantly in 2013. The average trading size for treasury bonds fell to CNY72 million from CNY146 million in the prior year. The policy bank bond average trading size fell to CNY74.3 million from CNY156.7 million, and for PBOC bonds the average fell to CNY84 million from CNY195 million.

More significantly, the spot trading of central bank bills and bonds was nearly zero in 3Q13, based on *ChinaBond* data, as the total trading volume was only 6% of 2Q13's central bank bills and bonds trading volume. In addition to the external and domestic shocks affecting the market, demand for central bank bills and bonds was also down due to a lack of interest from domestic participants given the low yields versus comparable treasury bonds in other markets.

External factors in the second half of the year came mostly from the US. In May, bond markets were rattled when the Federal Reserve began discussions over the tapering of its quantitative easing program. In September, concerns abated when the Federal Reserve announced it would not taper in the near-term. However, in October, the crisis over debt ceiling negotiations in the US added to market concerns before the federal government's extended borrowing authority was ultimately approved by the US Congress.

Yet, the biggest factors contributing to the decline of overall liquidity were mostly related to domestic issues. In June, liquidity was severely impacted by the SHIBOR shock event. At the beginning of June, the overnight SHIBOR was 4.6% and the 7-day interbank repo rate stood at 4.8%. By 8 June, liquidity demands had driven the overnight SHIBOR to 7.5% and the 7-day repo rate to 7.8%. The PBOC worsened conditions in choosing to mop up additional liquidity by issuing central bank bills on 18 June.

However, market participants responding to the liquidity survey said that the SHIBOR shock event was unlikely to be repeated and was therefore no longer a concern. The PBOC's move was meant to serve as a warning for banks to be more prudent

Table 11: LCY Government Bond Survey Results—People's Republic of China

	Treasury Bills	Treasury Bonds	Policy Bank Bonds	PBOC Bills	PBOC Bonds
On-the-Run					
Bid–Ask Spread (bps)	4.0	4.1	4.9	7.3	6.0
Average Trading Size (CNY million)	95.4	72.0	74.3	99.1	84.0
Off-the-Run					
Bid–Ask Spread (bps)	5.9	6.0	7.0	8.2	7.0
Average Trading Size (CNY million)	75.8	77.5	77.3	100.5	89.4

bps = basis points, LCY = local currency, PBOC = People's Bank of China.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

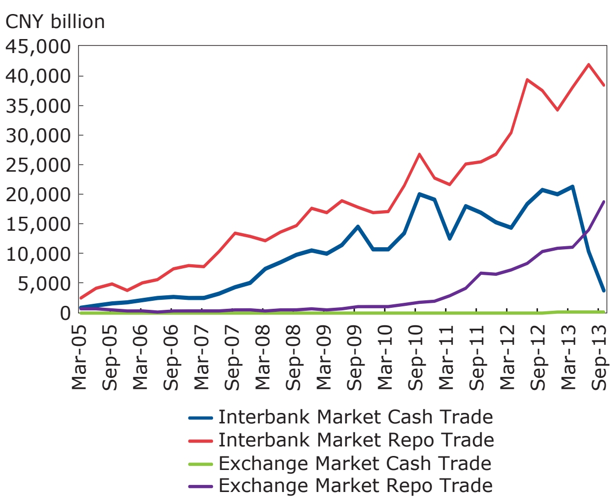
in their liquidity management. The PBOC also released a statement on 26 June saying that the rise in liquidity demand was due mostly to seasonal factors and loan growth, but that overall liquidity in the system was still healthy.

Despite money market rates recovering after the SHIBOR shock, overall trading volumes have yet to recover **(Figure 12)**. The decline in volumes is significant, with the Interbank Spot Market volume falling 51% quarter-on-quarter (q-o-q) in 2Q13. Trading volume fell again in 3Q13, this time by 62% q-o-q, so that the trading volume in 3Q13 was only 19% that of 1Q13.

The significant decline in trading volumes was due to a crackdown by regulators over illegal trade practices. In April, regulators arrested several bond traders for using trades to skim profits from client accounts. The practice involves using a technique called "substitute holding" where the trader temporarily transfers bonds to another account. In connection to this, in October, regulators banned Class C accounts, or non-financial accounts, from trading in the interbank bond market.

While the arrests have centered on individual bond trader improprieties, market participants said that regulators may be more concerned with potential risks from institutions as the practice of substitute holdings can be also used to manipulate trading profits or hide assets away from banking books.

Figure 12: Repurchase (Repo) and Cash Bond Trading Volumes in the PRC's Interbank and Exchange Bond Markets



Source: Wind.

Liquidity in the PRC's financial markets is also supported by a robust interest rate swap and repo market. The repo market is used mainly by participants as an alternative short-term funding source and is active in the PRC as shown by the much larger volumes in the repo market compared to spot trades. The volumes in the repo market show that it was not hampered by the PRC's crackdown on illegal bond trading. Also, a new product that is expected to help further market development was the launch of treasury bond futures in September. The new instrument will allow market participants to hedge their government bond exposures.

Overall, market participants expressed a fair degree of comfort and satisfaction with the condition of the market when the survey was conducted in mid-September, despite the volatility of the SHIBOR shock event in June and the decline in measured liquidity in 3Q13. However, they are mindful that market liquidity may tighten further this year.

More recently, the PBOC stopped injecting liquidity into the market by ceasing issuance of reverse repos on 17 October, leading to speculation that the PBOC will be tightening monetary policy. Interbank money market rates have been rising again. At the start of October, the 1-week SHIBOR was 4.4%, and by 28 October it had risen to 4.9%. The 1-week interbank repo rate rose from 4.4% to 5.6% in the same period. To help calm markets, the PBOC resumed issuance of reverse repos in the last week of October.

Hong Kong, China

The Hong Kong, China liquidity survey shows that Exchange Fund Bills (EFBs) are the most liquid government bond **(Table 12)**. Bid−asks spreads for Hong Kong, China's EFBs are 4 bps−5bps lower than those for Exchange Fund Notes (EFNs) and HKSAR Bonds. Outstanding amounts of

Table 12: LCY Government Bond Survey Results—Hong Kong, China

	Exchange Fund Bills	Exchange Fund Notes	HKSAR Bonds
On-the-Run			
Bid–Ask Spread (bps)	2.9	7.3	7.7
Average Trading Size (CNY million)	132.7	39.5	23.6
Off-the-Run			
Bid–Ask Spread (bps)	2.8	8.0	8.6
Average Trading Size (CNY million)	119.3	37.8	19.6

bps = basis points, HKSAR = Hong Kong Special Administrative Region, LCY = local currency.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

EFBs are also significantly larger than the other two. Secondary trading volumes and average trading sizes of EFBs are again significantly larger than for EFNs and HKSAR Bonds, as is the overall size of the sector in terms of bonds outstanding.

Market participants have noted that demand for bonds in the Hong Kong, China government space has been limited in 3Q13. Demand has also been lower this year versus the prior year, partly due to lower yields. Market participants have noted that institutional investors have little incentive to hold Hong Kong, China government bonds given the fixed exchange rate, making US Treasuries more attractive because of their liquidity. Hong Kong, China yields are also highly correlated with US interest rate movements. Investments in Hong Kong, China government bonds are mostly for regulatory purposes such as meeting liquidity ratio requirements.

Of the three government bond types, HKSAR bonds are the least liquid. One reason for this is that the Hong Kong Monetary Authority (HKMA) provides a repo facility for banks to raise liquidity but collateral is limited to EFBs and EFNs. Market participants have also noted that the Hong Kong, China local market did not see significant outflows in recent months as fears mounted over the expected tapering of US Federal Reserve bond purchases. Participants said one reason for this was Hong Kong, China's status as a developed economy and strong financial sector. Markets that suffered the most from the tapering fears were those that were vulnerable to current account deficits and capital flow volatility.

India

The 2013 survey results reveal that Government of India (GOI) securities—which are medium- to long-term debt instruments issued to meet the government's financing requirements, especially the financing of the fiscal deficit and infrastructure projects—continue to have the lowest bid–ask spread, as the average for their on-the-run bonds stood at 1.3 bps in 3Q13 **(Table 13)**. This was followed by treasury bills with an average spread of 6.0 bps. Special government bonds—which are special securities issued to entities such as fertilizer companies, the Food Corporation of India, and oil marketing companies to serve as compensation in lieu of cash subsidies—recorded an average spread of 8.0 bps.

The survey results for India also show that treasury bills posted the highest trading size across these three types of sovereign bonds, recording an average of INR212.5 million compared with GOI bonds' INR179.2 million and special government bonds' INR90 million. Compared with the 2012 survey results, the average trading size for this year's survey was higher for GOI bonds, but lower for treasury bills and special government bonds.

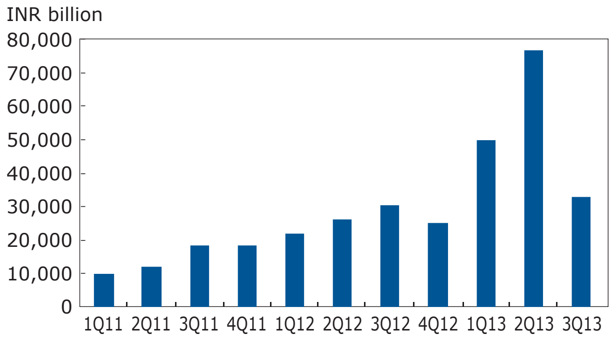
Table 13: LCY Government Bond Survey Results—India

	Treasury Bills	Government of India Bonds	Special Government Bonds
On-the-Run			
Bid–Ask Spread (bps)	6.0	1.3	8.0
Average Trading Size (INR million)	212.5	179.2	90.0

bps = basis points, LCY = local currency.
Note: Special government bonds are issued by the government to entities such as fertilizer companies, oil marketing companies, and the Food Corporation of India as compensation in lieu of cash subsidies.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Meanwhile, the trading volume of LCY government securities—comprising GOI bonds and treasury bills—dropped 57.5% q-o-q to INR32.4 trillion in 3Q13; it was, however, up 8.1% year-on-year (y-o-y) **(Figure 13)**. In the first 3 quarters of the year, the trading volume of LCY government securities stood at INR157.8 trillion, which was up sharply by 104.2% y-o-y, supporting the sentiment of most survey respondents that liquidity in the LCY government securities market has improved over the last year.

Figure 13: Trading Volume for LCY Government Securities in India



LCY = local currency.
Source: Reserve Bank of India.

Most survey respondents from the Indian market pointed out that (i) the 10-year benchmark GOI bond is the most liquid, (ii) treasury bills are generally liquid, and (iii) special government bonds are illiquid. Several respondents also shared their views that liquidity in the government bond market has improved overall this year compared with the previous year. However, some have commented that concerns over the planned tapering of the US Federal Reserve's asset purchase program in recent months resulted in a sharp depreciation in the Indian rupee and the outflow of foreign capital from the LCY bond market. One respondent commented that the foreign exchange pressures led the central bank to defend the rupee by raising short-term interest rates in July, which in turn resulted in an inverted yield curve for LCY government bonds.

Some participants have identified certain measures being undertaken in India that would help preserve liquidity in the LCY bond market, and these include (i) the central bank's open market operations, (ii) development of the money and derivatives markets, (iii) inclusion of LCY government bonds in international bond indices, and (iv) reforms to the debt limit allocation and registration norms of foreign investors. In September, the Securities and Exchange Board of India (SEBI) decided to permit foreign institutional investors (FIIs) to invest in government debt without buying debt limits until the overall investment reaches 90%, after which an auction will be initiated to allocate the remaining limits.

Indonesia

Liquidity remains concentrated in the fixed-rate benchmark series of treasury bonds: FR0066, FR0063, FR0064, and FR065, with maturities of 5, 10, 15, and 20 years, respectively. More recently, however, increased trading activity has been noted among FR0069, FR0070, FR0071, and FR0068, which will make up the new benchmark bonds for 2014. Each year, the Indonesia Debt Management Office assigns the benchmark series for the year. Generally, these benchmark series attract the most liquidity in any given year.

Bond market liquidity in Indonesia worsened this year compared with 2012, as the economy has been negatively affected by both domestic issues—such as rising inflation expectations, a widening current account deficit, and a weakening Indonesian rupiah—as well as concerns over the US Federal Reserve's expected tapering of its quantitative easing program. Both domestic and external factors contributed to the widening of bid–ask spreads this year. On-the run bid–ask spreads for treasury bonds averaged 8.6 bps, up from 6.6 bps in the 2012 survey **(Table 14)**.

Bid–ask spreads for short-term instruments were much higher compared with treasury bonds. However, bid–ask spreads have tightened for treasury bills and *Sertifikat* Bank Indonesia (SBI) in 2013 compared with the 2012 survey. There is hardly any activity in these short-term instruments due to their relatively small size compared with

Table 14: LCY Government Bond Survey Results—Indonesia

	Treasury Bills	Treasury Bonds	SBI
On-the-Run			
Bid–Ask Spread (bps)	19.1	8.6	23.8
Average Trading Size (IDR billion)	36.7	23.3	41.3
Off-the-Run			
Bid–Ask Spread (bps)	32.3	13.6	36.0
Average Trading Size (IDR billion)	63.3	31.9	35.0

bps = basis points, LCY = local currency, SBI = *Sertifikat* Bank Indonesia.
Note: The bid–ask spreads for Indonesian treasury bonds presented above are expressed in terms of yield or basis points to make them comparable with bid–ask spreads in other Asian markets. Bid–ask spreads for government bonds are most often expressed in terms of "cents" in the Indonesian market. In the 2013 survey, the average treasury bond bid–ask spread was 50 cents. The Indonesian market quotes bid–ask spread for treasury bills and SBI in terms of yield or basis points.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

treasury bonds. Also, interest in SBI remains limited, despite Bank Indonesia's (BI) decision to reduce the minimum holding period from 6 months to 1 month in August.

Despite the market volatility mentioned above, most market participants remain optimistic in their outlook for the Indonesian bond market in the remaining months of the year and next year. Coordinated efforts by the central bank and the government are showing positive signs of stabilizing the economy as inflation eased in September and a trade surplus was posted in August, abating the decline in the rupiah exchange rate. Some survey respondents say there is still room for another rate hike, but believe it will be unlikely as economic fundamentals have started to improve. Market participants in Indonesia unanimously agree with the central bank's policy of raising policy rates in recent months, citing it as necessary to dampen the high inflation expectations.

Overall, the average on-the-run transaction size was higher this year for treasury bonds and treasury bills. The average on-the-run transaction size for treasury bonds rose to IDR23.3 billion, compared with only IDR17.6 billion in 2012. The average transaction size for treasury bills increased to IDR36.7 billion this year compared with IDR30.3 billion in the previous year's survey. On the other hand, the average transaction size for SBI declined to IDR41.3 billion this year from an average of IDR52 billion in 2012.

The turnover ratio for government bonds in Indonesia remains low at below 0.5. In 3Q13, the government bond turnover ratio fell to 0.24 due to thinner trade volume. Trade volumes dropped significantly in July and August on concerns over the Federal Reserve's anticipated withdrawal of its quantitative easing program. Coupled with domestic factors, this resulted in some foreign funds pulling out from the rupiah bond market. Foreign investors play a significant role in the Indonesian bond market as they hold nearly a third of government bonds. Foreign participation in the bond market was weak in 3Q13 as noted by market participants responding to the survey.

Thus, the need to develop the domestic investor base is very important to ensure that in times of capital flight, there is still adequate support for the market. Most of the survey respondents noted that local investors normally choose to take a "wait-and-see" attitude during times of market pressure. To help develop the local investor base, the government should provide support by giving incentives for local investors to invest in government bonds. For instance, some institutional investors used to be tax-free. But changes in tax policies levied a withholding tax on mutual funds of 5% in 2011–2013, and 15% thereafter. This is a disincentive for mutual funds to invest in bonds. Also, survey respondents cited market education and improving ease of market access as important factors in developing the domestic investor base, especially with regard to retail investors.

Finally, while having a well-developed repo market helps to improve liquidity, this issue remains a challenge for Indonesia. Until now, the standardized repo transaction terms and legal agreement based on the Global Master Repo Agreement (GMRA) have yet to be finalized. Most market participants undertake repo transactions only through bilateral agreements, which sometimes tend to be costly, or through transactions with the central bank, which are limited to banking institutions as counterparties. Other non-bank financial institutions—such as mutual funds, pension funds, and insurance companies—cannot participate in repo transactions with Bank Indonesia (BI). Market participants said that the standard repo agreement is unlikely to be finalized in the near-term.

Republic of Korea

Korea Treasury Bonds (KTBs) and central bank bonds appear to be more liquid government bond instruments, based on their relatively low bid–ask spreads, than short-term sovereign debt instruments. The average on-the-run bid–ask spread was lowest for KTBs at 0.7 bps, followed by central bank bonds at 0.8 bps. Bid–ask spreads were 1.1 bps and 1.2 bps for treasury bills and central bank bills, respectively **(Table 15).** Similarly, the average off-the-run bid–ask spread was lowest for KTBs at 1.3 bps, followed by central bank bonds at 1.4 bps, treasury bills at 1.5 bps, and central bank bills at 1.6 bps. By tenor, most survey respondents participating in the Republic of Korea's LCY bond market indicated the 5-year KTB benchmark and the 2-year Monetary Stabilization Bond (MSB), issued by The Bank of Korea, to be the most liquid sovereign debt securities.

Table 15: LCY Government Bond Survey Results—Republic of Korea

	Treasury Bonds	Treasury Bills	Central Bank Bonds	Central Bank Bills
On-the-Run				
Bid–Ask Spread (bps)	0.7	1.1	0.8	1.2
Average Trading Size (KRW billion)	10.0	10.0	10.0	10.0
Off-the-Run				
Bid–Ask Spread (bps)	1.3	1.5	1.4	1.6
Average Trading Size (KRW billion)	10.0	10.0	10.0	10.0

bps = basis points, LCY = local currency.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Compared with the previous year's survey results, bid–ask spreads in the 2013 survey were higher for on-the-run KTBs, treasury bills, and central bank bills, while the spread for central bank bonds remained the same. Bid–ask spreads were also higher for all off-the-run sovereign bills and bonds. Meanwhile, the 3Q13 trading volume and the turnover ratio for LCY government bonds in the Republic of Korea were down on both a quarterly and an annual basis. These trends may indicate a tightening in the liquidity conditions in the Republic of Korea's LCY government bond market, specifically during 3Q13, partly due to market concerns over the expected tapering in the asset purchase program of the US Federal Reserve. Some market participants involved in the survey commented that these concerns have put upward pressure on LCY government bond yields.

The average trading sizes in 2013 for on-the-run and off-the-run KTBs, central bank bills and bonds, and treasury bills were all the same: KRW10 billion.

The Republic of Korea's Ministry of Strategy and Finance (MOSF) announced in July amendments to regulations on the KTB issuance system and primary dealer system in order to generate more primary dealer participation in both the primary and secondary markets. MOSF also reported in April that a supplementary budget of KRW17.3 trillion will be utilized to help stimulate the domestic economy through the remainder of 2013. Most survey respondents, however, commented that these policy measures appear to have not had a strong impact on issuance and liquidity conditions in the LCY government bond market.

Malaysia

The 2013 survey results show that Bank Negara Malaysia (BNM) bills are the most liquid type of government bonds in Malaysia as measured by bid–ask spreads **(Table 16)**. BNM bills experienced the smallest increase in bid–ask spreads in 2013 among government securities at 3.4 bps compared with 3.1 bps a year earlier. The average bid–ask spreads of treasury bills and MGSs widened to

Table 16: LCY Government Bond Survey Results—Malaysia

	MGSs	GIIs	BNM Bills	Treasury Bills
On-the-Run				
Bid–Ask Spread (bps)	3.8	4.7	3.4	3.6
Average Trading Size (MYR million)	15.5	10.6	36.0	14.8
Off-the-Run				
Bid–Ask Spread (bps)	9.0	10.2	5.5	4.8
Average Trading Size (MYR million)	10.0	9.4	29.3	12.9

BNM = Bank Negara Malaysia, bps = basis points, GIIs = Government Investment Issues, LCY = local currency, MGSs = Malaysian Government Securities.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

3.6 bps and 3.8 bps, respectively, from 2.9 bps and 2.7 bps in 2012. The largest increase in bid–ask spreads was for Government Investment Issues (GIIs), which climbed to 4.7 bps from 2.9 bps in 2012.

The turnover ratio for Malaysia's most prominent government bonds—MGSs and GIIs—fell to 0.23 in 3Q13 from 0.27 in 3Q12 in the case of MGSs, and to 0.07 from 0.15 in the case of GIIs. Market analysts attribute the lower liquidity of Islamic bonds, when compared with MGSs, to (i) the unfamiliarity of offshore investors with the GII structure and credit concepts; (ii) the fact that GIIs are not included in any government bond benchmarking indices; and (iii) the scarcity of Islamic paper, which encourages market participants to buy and hold.

Meanwhile, the average trading size has fallen between 24% and 50% for all government securities since 2012. Although BNM bills continued to have the highest average trading size, the market accepted transaction size for this instrument dropped 41% to MYR36 million from MYR61.4 million in 2012. The average trading size of MGSs has become broadly comparable to treasury bills due to a decline of 50% in its accepted transaction size compared with a year ago.

The 2014 budget statement released on 25 October resonated with market analyst expectations on Goods and Services Tax (GST) reforms (see Policy, Institutional, and Regulatory Developments for more details). Market participants were asked about measures to trim the budget deficit. They were in agreement that implementing GST is critical to bridge the gap of a growing budget deficit. GST was deemed necessary to provide better revenue-generating mechanisms for the government and to lighten the burden on personal income tax payers to promote growth in the economy. Other policies mentioned were the securitization of government civil servant loans and the streamlining of tax collection revenues.

Malaysian market analysts see liberalization measures as adding to the liquidity of the LCY government bond market. Key issues highlighted among survey respondents included (i) cross-border issuance through the Islamic fund management industry; (ii) liberalization of the foreign exchange market by making the Malaysian ringgit available off-shore and freely floating; (iii) deepening the bond futures market as a hedging tool; (iv) developing a more active repo market; (v) developing CDS markets, hybrids, and hedging instruments; and (vi) establishing a few liquid benchmark bonds.

Philippines

The average bid–ask spread for on-the-run Philippine treasury bonds increased in 2013 to 5.4 bps from 2.1 bps in 2012, while the bid–ask spread for treasury bills rose to 20.9 bps from 8.0 bps **(Table 17)**. This rise in bid–ask spreads and the deterioration of underlying market liquidity reflected market concern that the US Federal Reserve would start to taper its quantitative easing program. Moreover, liquidity in the Philippine market during the latter part of September was affected by the release of Bangko Sentral ng Pilipinas (BSP) Circular 813 that amended rules on the valuation of government securities held by banks and non-bank financial institutions. Anticipation of negative mark-to-market valuations by market participants induced a sell-off on longer-dated bonds.

The rise in the bid–ask spread for on-the-run treasury bonds increased to 5.4 bps and

Table 17: LCY Government Bond Survey Results—Philippines

	Treasury Bonds	Treasury Bills
On-the-Run		
Bid–Ask Spread (bps)	5.4	20.9
Average Trading Size (PHP million)	61.0	81.3
Off-the-Run		
Bid–Ask Spread (bps)	16.8	21.9
Average Trading Size (PHP million)	48.3	41.4

bps = basis points, LCY = local currency.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

was within the range of average bid–ask spreads in 2009–2011 of between 3.1 bps and 6.6 bps. Meanwhile, the average trading size for treasury bonds fell to PHP61 million in 2013 from PHP126.6 million in 2012. The average trading size for treasury bills, however, rose to PHP81.3 million in 2013 from PHP58.7 million in 2012, as demand for short-term paper increased relative to the long-term bonds given the uncertainty in the market.

Bid–ask spreads for off-the-run government securities also increased in 2013. The average bid–ask spread for off-the-run treasury bills rose to 21.9 bps in 2013 from 12.5 bps in 2012. Off-the-run treasury bonds' average bid–ask spread also increased to 16.8 bps from 11.7 bps. Average trading sizes of off-the-run treasury bills slightly increased to PHP41.4 million in 2013 from PHP40.3 million in 2012, while the average trading size of off-the-run treasury bonds fell to PHP48.3 million from PHP56.9 million.

Despite the volatility in the market this year, market participants responding to the survey view market liquidity as being much improved. The Bureau of the Treasury's debt liability management program, which includes bond swaps and re-issuances, has deepened liquidity in the LCY bond market. Banks have been able to convert their illiquid holdings to liquid benchmark securities, thus increasing trading volume in the LCY bond market. Moreover, this has also led to the lengthening of the maturities of issued securities, which has allowed the market to diversify holdings in terms of tenor. As a result, the most actively traded securities are at the longer-end of the curve, specifically FXTN 20-17, FXTN 25-8, RTB 25-1, and RTB 20-1.

Moreover, market participants are impressed by the fact that the Philippines' strong economic fundamentals have capped the rise in bid–ask spreads, limiting the rise to what had been normal prior to the unusually liquid market in 2012, which was largely a product of massive capital inflows. Inflation remains benign, which has allowed BSP to maintain its policy rates at low levels, and the Philippines surpassed expectations after posting 7.6% gross domestic product (GDP) growth in the first half of 2013. Finally, the recent credit rating upgrades to investment grade by S&P, R&I, and Moody's have underscored these positive factors.

In addition to trading volume and bid–ask spread, the market considers issue size as another indicator of the liquidity of a particular bond. Such has been the case for Retail Treasury Bond (RTB) issuance in the Philippines in past years. On average, RTBs remain liquid from 6 months to 1 year after issuance, given their large issue size, which allows the larger trading counterparties to remain active in trading these securities.

The majority of survey respondents cited the further development of the repo market as an important tool to improve liquidity in the market. In particular, a repo market to allow the short-selling of securities would be beneficial. Industry players have been in consultations with the relevant government regulators on the establishment of the repo market's formal pricing and trading guidelines.

Singapore

The average on-the-run bid–ask spreads for SGS bonds and MAS bills were both 2.6 bps, while SGS bills' average spread was higher at 2.9 bps, according to this year's bond market liquidity survey for Singapore **(Table 18)**. These averages compare with 2012, when the average bid–ask

Table 18: LCY Government Bond Survey Results—Singapore

	SGS Bonds	SGS Bills	MAS Bills
On-the-Run			
Bid–Ask Spread (bps)	2.6	2.9	2.6
Average Trading Size (SGD million)	7.8	27.5	27.5
Off-the-Run			
Bid–Ask Spread (bps)	4.3	3.2	2.8
Average Trading Size (SGD million)	6.3	35.6	35.6

bps = basis points, LCY = local currency, MAS = Monetary Authority of Singapore, SGS = Singapore Government Securities.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

spreads for SGS bonds, SGS bills, and MAS bills were 3.1 bps, 3.4bps, and 3.0 bps, respectively,

In terms of average off-the-run bid–ask spreads, the liquidity situation for the three types of government bonds varies. In 2013, average bid–ask spreads for off-the-run SGS bonds were higher at 4.3 bps compared with 3.6 in 2012. Average bid–ask spreads for off-the-run SGS bills came in slightly lower at 3.2 bps compared with 3.4 bps in 2012. Lastly, off-the-run MAS bills had slightly better liquidity this year at 2.8 bps from 3.0 bps last year.

The liquidity of SGS bonds is maintained across all tenors due to mandatory quoting by all primary dealers in Singapore. The SGS were initially issued to meet banks' needs for a risk-free asset in their liquid asset portfolios and to develop a benchmark to encourage domestic corporate bond market development, as the Singaporean government runs a consistent surplus and has no funding needs of its own. Investment in the government bond market is most attractive during periods when the Singapore dollar is appreciating. The MAS intervenes in the foreign exchange market in order to maintain the Singapore dollar nominal effective exchange rate (NEER) within its policy band.

Average trading sizes have fallen in 2013. The average trading size for on-the-run SGS bonds was SGD7.8 million compared with SGD9.7 million in 2012. Similarly, off-the-run SGS bonds were also traded at a lower average size of SGD6.3 million compared with SGD9.4 million in 2012. Finally, SGS bills and MAS bills were traded at the same levels in 2013 at SGD27.5 million for the on-the-run and SGD35.6 million for off-the-run.

Thailand

Average bid–ask spreads, based on 2013 survey results, were relatively low for short-term sovereign debt securities, specifically, treasury bills and Bank of Thailand (BOT) bills when compared with government bonds and BOT bonds **(Table 19)**. (This same trend was also evident in the 2012 survey results.) For on-the-run sovereign debt instruments, the average bid–ask spread was lowest at 2.1 bps for BOT bills. This was followed by treasury bills at 2.2 bps, government bonds at 2.4 bps, and BOT bonds at 3.4 bps. Compared with the previous year's survey results, on-the-run bid–ask spreads narrowed for BOT bills, government bonds, and treasury bills, while they widened for BOT bonds. Meanwhile, off-the-run bid–ask spreads narrowed for all four types of sovereign debt securities in Thailand in 2013. Meanwhile, the average trading size for both on-the-run and of-the-run sovereign debt instruments was largest for BOT bills and smallest for government bonds.

Table 19: LCY Government Bond Survey Results—Thailand

	Govern-ment Bonds	Treasury Bills	BOT Bonds	BOT Bills
On-the-Run				
Bid–Ask Spread (bps)	2.4	2.2	3.4	2.1
Average Trading Size (THB million)	60.0	91.4	90.5	118.6
Off-the-Run				
Bid–Ask Spread (bps)	5.4	3.2	5.7	3.2
Average Trading Size (THB million)	38.9	81.3	78.9	86.6

BOT = Bank of Thailand, bps = basis points, LCY = local currency.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

The turnover ratio for LCY government bonds fell to 0.65 in 3Q13 from 0.84 in 2Q13 and 0.80 in 3Q12. By government bond type, the turnover ratios for LCY bonds issued by the central government and the central bank dropped in 3Q13 from 2Q13 and 3Q12, as the trading volume of these bonds in 3Q13 also dropped on both a q-o-q and y-o-y basis. Some survey respondents shared their view that concerns over the planned tapering of the US Federal Reserve's asset purchase program resulted in an increase in LCY government bond yields and lower bond trading activity in 3Q13. Indeed, 3Q13 saw net outflows of foreign capital from the LCY bond market amid expectations of the US Federal Reserve's asset purchase program tapering and a slowdown in Thailand's economic growth.

Most survey respondents commented, however, that liquidity conditions in the LCY government bond market are still better this year overall compared with the previous year. According to ThaiBMA data, the trading volume of LCY government debt securities—which comprise treasury bills, government bonds, central bank bonds, and state-owned enterprise (SOE) bonds—stood at THB16.2 trillion in the first 9 months of 2013, compared with THB15.2 trillion in the same period in 2012. By government security type, the y-o-y increases in trading volume in the first 9 months of the year were most evident for government bonds at 66.6% and SOE bonds at 115.7%, while the trading volumes for treasury bills and central bank bonds recorded annual declines of 53.2% and 1.3%, respectively.

Viet Nam

Viet Nam's slowing rate of GDP growth—5.1% y-o-y in 3Q13 and 4.9% in 2Q13—has motivated the government to expand its economic stimulus programs and finance much of this effort with LCY government bond issuance, leading to 24.8% y-o-y growth in the government bond sector in 3Q13. The government's stimulus program also is motivated by a relatively low loan growth rate for the banking system, as many banks have faced credit quality problems over the last year and have had to reduce their lending programs. Market appetite for new government bond issuance, however, has been limited. Many government bond issuances this year have been undersubscribed, and the government has steadily reduced the maturities of its issuance to satisfy an increasingly risk-adverse investor base.

The 2013 survey results show that the tenors with the most liquidity are 2-years for treasury bonds and 3-years for SOE bonds. Between treasury and SOE bonds, the former are more liquid based on bid–ask spreads. The average bid–ask spread for treasury bonds was 21.7 bps, compared with 25 bps for SOE bonds. Market participants reported that bid–ask spreads for treasury bonds often change daily or weekly. Meanwhile, the average market transaction size of a government bond traded on the Hanoi Stock Exchange is VND66.7 billion (US$3.2 million).

Market analysts responding to the survey state that investor diversity is the most important key to enhancing the liquidity of Viet Nam's LCY bond market. Investors like banks, insurance companies, and individuals typically purchase bonds at initial auctions and hold them until maturity. In the absence of pension funds, only the banks are currently trading bonds while other institutional investors such as insurance companies adopt a passive investment strategy. Survey respondents believe that public pension reform is an important element in promoting the development of Viet Nam's government bond market. Other measures mentioned include launching a mandatory benchmark bond and creating an active, well-developed repo market and a money market derivatives market.

Qualitative Indicators for Government Bond Markets

The 2013 *AsianBondsOnline* Bond Market Liquidity Survey asked participants in the region's LCY government and corporate bond markets for their views on market structure and ways to improve liquidity. The "spider charts" included in this section capture market participants' perceptions of the importance of the following structural and policy issues in strengthening and deepening LCY bond markets:

(i) **Greater Diversity of Investor Profile**: the need for a more diversified investor base in terms of residence (domestic or foreign), classification (individual or institutional), and type of industry (e.g., banking, insurance, industrial), as well as greater trader participation in the LCY bond market. In some markets, most government bonds are held by commercial banks, which are focused on generating trading profits or have shorter holding periods. Greater involvement of institutional investors, who have a need to hold longer-dated securities and may be more interested in holding different types of bonds, such as inflation-adjusted securities and perpetuals, contributes greatly to the development of the market.

(ii) **Market Access**: the degree of ease or difficulty for investors to access the bond market, taking into account investor registration and investment quotas. Many markets limit participation from some types of institutional investors and foreign investors. Permitting a greater variety of financial institutions and investors to participate in a market improves its liquidity.

(iii) **Foreign Exchange Regulations**: the extent of liberal or restrictive foreign exchange and repatriation policies, as well as degree of capital mobility in the bond market. Foreign exchange regulations can reduce market liquidity by preventing or reducing the participation of foreign investors in the market, and can also impede the ability of domestic investors to re-allocate their funds to offshore investments when market conditions justify doing so.

(iv) **Transaction Funding**: the role of funding availability in the money market, and the importance of having an active or developed repo market. Market participants other than commercial banks can sometimes find it difficult to secure funding for their bond investments, either due to regulations limiting or forbidding financial institutions and private investors from lending to bond market participants. The absence of a repo market, or the absence of a well-functioning repo market, is a significant problem in some markets.

(v) **Tax Treatment**: the role of reducing withholding taxes on interest income and capital gains from LCY bond investments. The absence or existence of taxation on bond holdings can be an important factor in either promoting or hindering liquidity in a given bond market. Also, different tax treatment for different types of investors is another obstacle to improving bond market liquidity. Taxes due on governments are waived for certain types of investors in a number of jurisdictions, but corporate bonds are rarely tax exempt.

(vi) **Settlement and Custody**: the importance of straight-through processing of bond transactions, timely settlements of bond trades, and existence of a global or accredited custodian(s). The role of custodians and regulations on their operations are critical to the liquidity of any bond market. The timeliness of settlement (ideally t+1) is an important factor, as are structures to prevent failed trades. However, settlement and custody practices differ greatly among the bond markets of emerging Asia, and are an obstacle to the creation of a more integrated regional bond market.

(vii) **Hedging Mechanisms**: the importance of having a more efficient and active derivatives market. The emergence of a greater range of derivative products in individual markets has been an important development in recent years since derivatives are financial contracts that commit counterparties to exchange cash payments related to the value of a commodity or financial asset (underlying asset) with no actual delivery of the underlying asset.There are four major types of financial contracts: futures, forwards, swaps, and options. Development of these products is still in its early stages in many markets, but new derivative products are beginning to emerge on an almost yearly basis for the region as a whole. The launch of a government bond futures contract in the PRC in September is a recent example.

(viii) **Transparency**: the significance of having transparent bond prices and ratings, as well as bond market regulatory procedures. Clarity of bond pricing and regulatory procedures are an important element in the development of LCY bond markets. Bond pricing agencies have an important role to play in this process.

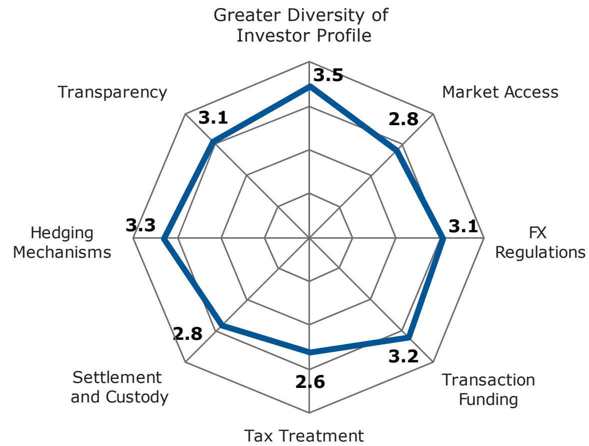
Market participants were asked to characterize each of these issues by degree of importance:

(1) Not important
(2) Somewhat Important
(3) Important
(4) Very Important

Numerical values were assigned for each issue, ranging from 1 (Not Important) to 4 (Very important) in order to construct the following spider charts.

Figure 14 summarizes the results as they relate to the region's LCY government bond market as a whole. The most important structural issue for market participants was investor diversity, which had a score of 3.5, followed by hedging mechanisms (3.3), transaction funding (3.2), foreign exchange regulations and transparency (3.1 each), market access and settlement and custody (2.8 each), and tax treatment (2.6). It is interesting to note that transaction funding had an average rating of 3.1 in last year's survey. This year, however, the average rating for transaction funding rose to 3.2, while the average ratings for foreign exchange regulations and transparency remained at 3.1 each.

Figure 14: Regional Averages—LCY Government Bond Market Structural Issues



FX = foreign exchange, LCY = local currency.
Note: Emerging Asia comprises the People's Republic of China; Hong Kong, China; India; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Greater Diversity of Investors and Traders. Greater diversity of investors and traders was assigned an average importance rating of 3.8 in India, the Philippines, and Viet Nam, and an average importance rating of 3.6 in Indonesia, Malaysia, and Thailand **(Figure 15)**. Banks still hold a dominant share of treasury bonds (77.3%) in the PRC, and their share of treasury bonds is slowly rising. Banks' share of treasury bonds in other markets, however, is much lower and falling. In the Republic of Korea, banks' share of government bonds has fallen to 18%, while other types of financial institutions hold 21% of the total, and insurance companies and pension funds have increased their share of total government bond holdings to 27%. In Malaysia, financial institutions as a group hold 45% of government bonds, social security institutions and insurance companies together hold 24% of the total, and foreigners hold 31%.

Hedging Mechanisms. Hedging mechanisms received their highest ranking in importance in Viet Nam (4.0), the PRC (3.8), and India and Malaysia (3.5 each). A number of hedging mechanisms are currently available in emerging

Figure 15: Structural Issues for Individual LCY Government Bond Markets

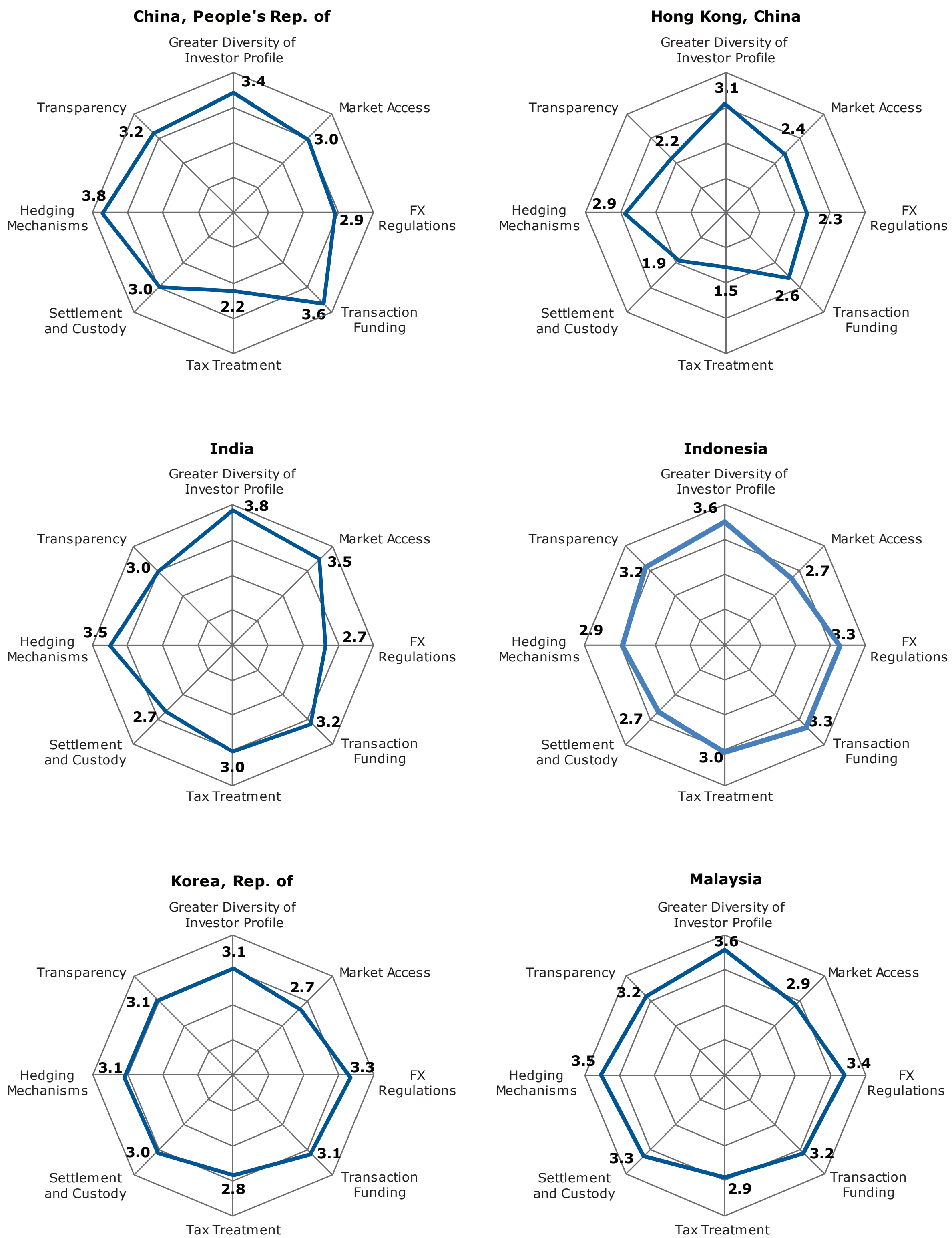


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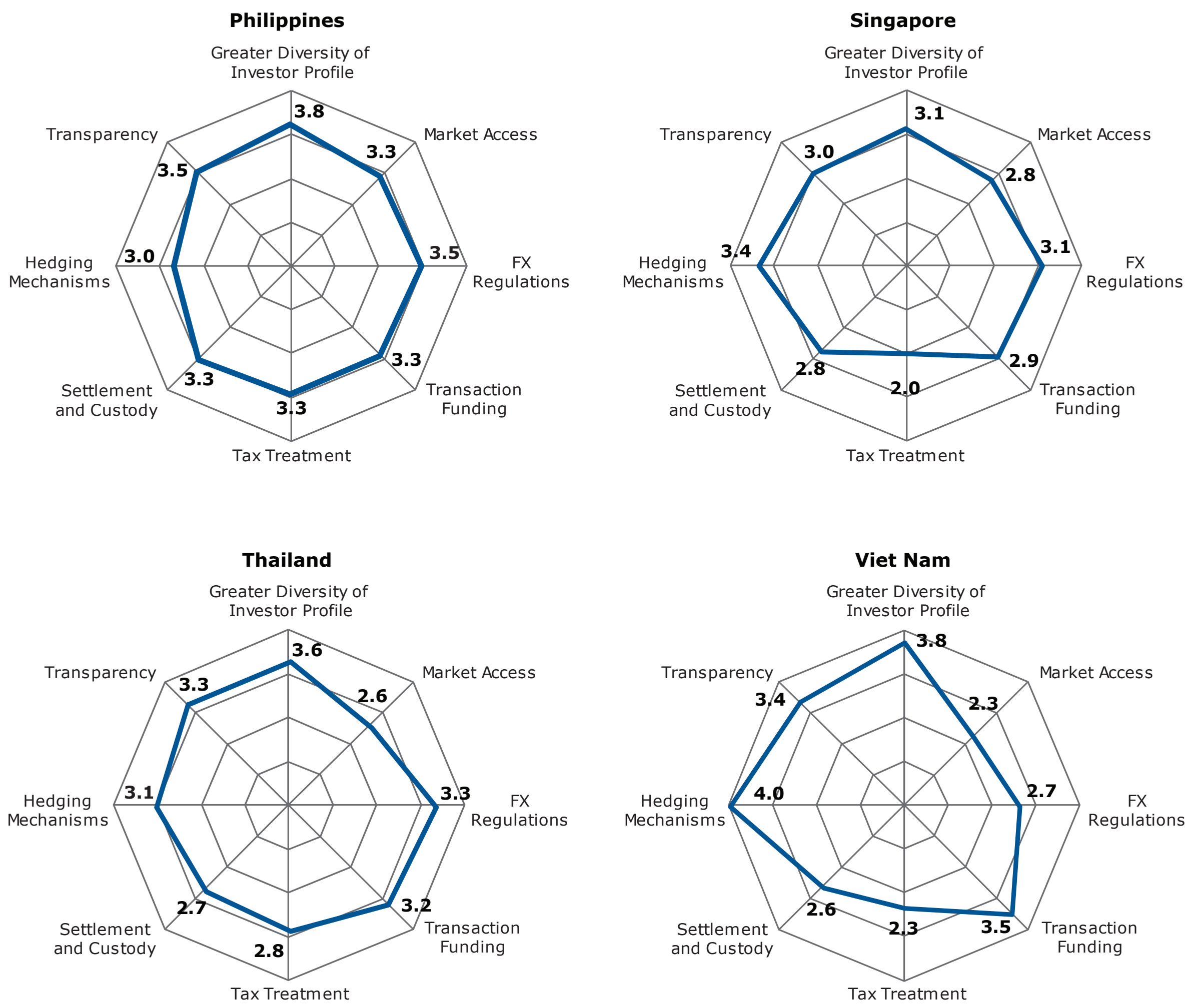
Figure 15 *continued*



FX = foreign exchange, LCY = local currency.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Asian markets. For example, the PRC recently launched a government bond futures market. In Hong Kong, China, interest rate and cross-currency swaps are available and relatively liquid, as are 3-year EFN futures. In the Republic of Korea, 3- and 10-year KTB futures serve as important hedging instruments for the KTB market.

Transaction Funding. Transaction funding was identified as an important issue this year in the PRC (3.6); Viet Nam (3.5); the Philippines and Indonesia (3.3 each); and India, Malaysia, and Thailand (3.2 each). Transaction funding was considered moderately important in the Republic of Korea (3.1) and Singapore (2.9), and considered somewhat less important in Hong Kong, China (2.6). Transaction funding in the PRC was seen as an important issue, because of the SHIBOR shock event in June and continued liquidity shortages since then. Viet Nam's market also has faced poor participation in government bond auctions and market liquidity has been hampered by the restructuring of some weaker financial institutions by the Viet Nam Asset Management Company.

Additionally, repo transactions are still not operational in Indonesia.

Foreign exchange regulations. Participants in several major markets—the Philippines, Malaysia, the Republic of Korea, and Indonesia—rated foreign exchange regulations as important in a range of 3.3 to 3.5. Participants from the PRC, India, Singapore, and Viet Nam rated the importance of foreign exchange regulations in a range of 3.1 to 2.7, implying that foreign exchange regulations are still an important, but not necessarily a critical, issue in these markets. Finally, market participants from Hong Kong, China rated foreign exchange regulations as somewhat important (2.3). Some of these ratings (Philippines; Malaysia; Hong Kong, China; Singapore; and Viet Nam) are lower than last year's ratings, suggesting that market participants either are managing their operations so that the limitations of local foreign exchange regulations do not materially impede their businesses or, perhaps, that the uncertainties of the global financial markets this year have relegated foreign exchange regulations to a lower level of concern.

The rating of foreign exchange regulations by Thai survey participants at an average level of 3.3 would seem to reflect the influence of the BOT's Capital Account Liberalization Master Plan announced in October 2012 to encourage both companies and depositors to diversify their investments and enhance business efficiency as part of BOT's goal of creating an environment that supports more balanced capital flows and more rapid financial market development en route to further economic integration under the Association of Southeast Asian Nations (ASEAN) Economic Community (AEC) by 2015.

Survey participants from the PRC were somewhat less concerned about foreign exchange regulations, with an average rating of 2.9 for this issue. Nevertheless, some significant new measures have been announced by the State Administration of Foreign Exchange (SAFE) regarding the Qualified Domestic Institutional Investors (QDII) program. The changes to be implemented include relaxation of the types of foreign currency to be used as well as a simplified exchange quota application process and simplified foreign exchange settlement. Also the PRC's newly launched Shanghai Free Trade Zone is mainly a space for investment activity. Nevertheless, the free trade zone is expected to allow financial institutions to set their own interest rates for borrowing and lending, and eventually permit freer conversion of the renminbi. Cross-border portfolio investment regulations in select emerging Asian markets are summarized in **Table 20**.

Transparency. Transparency was deemed an important issue by most government bond market participants in emerging Asia, garnering a score of 3.1 for the region as a whole. Specifically, participants rated transparency as being very important or important in the Philippines (3.5); Viet Nam (3.4); Thailand (3.3); and the PRC, Indonesia, and Malaysia (3.2 each). Other markets had an average rating suggesting transparency is relatively less important. Specifically, the Republic of Korea was at 3.1, while the average rating for transparency in India and Singapore was 3.0. Hong Kong, China had the lowest average rating for transparency at only 2.2.

Other Indicators. The other structural and regulatory indicators for government bond markets in this survey—market access, tax treatment, and settlement and custody—were rated as less important issues for market participants than the five indicators detailed above. Market access and settlement and custody were rated 2.8 in the region as a whole, while tax treatment was rated 2.6. **Table 21** provides a summary of tax treatments among domestic bond markets in the region.

Corporate Bond Markets

Corporate bonds are generally less liquid than government bond markets. Corporate bonds, often issued in smaller sizes, trade for only 1–2 months after issue before they are bought up by buy-and-hold investors, and may have structural features

Table 20: Cross-Border Portfolio Investment Regulation in Select Emerging Asian Markets

Market	Capital Inflow			Capital Outflow	
	Money Market Instruments	Bond Market Instruments	Equity Instruments	Resident Investors	Nonresident Investors
China, People's Republic of	Nonresidents are not allowed to invest in money market instruments.	Qualified Foreign Institutional Investors (QFII) are allowed to invest in listed bonds subject to quotas. As of July 2013, the total aggregate quota (covering both bond and equity investments) authorized for all QFIIs was US$150 billion. Renminbi Qualified Foreign Institutional Investors (RQFII) are allowed to invest in listed bonds and equities subject to quotas. RQFIIs are allowed to fund investments using renminbi sourced abroad. The first participants were financial institutions from Hong Kong, China. As of December 2012, the total aggregate quota was CNY270 billion. Eligible financial institutions may invest in the interbank bond market subject to limits. Eligible institutions include foreign central banks engaged in cross-border renminbi settlement; Hong Kong, China's and Macau, China's central banks; and other monetary authorities seeking renminbi to diversify financial reserves.	QFIIs are allowed to invest in A-shares subject to quotas. No single QFII may hold more than 10% of a listed company. As of July 2013, the total aggregate quota (covering both equity and bond investments) authorized for all QFIIs was US$150 billion. Renminbi Qualified Foreign Institutional Investors (RQFII) are allowed to invest in listed bonds and equities subject to quotas. RQFIIs are allowed to fund investments using renminbi sourced abroad. The first participants are financial institutions from Hong Kong, China. As of December 2012, the total aggregate quota was CNY270 billion.	Qualified Domestic Institutional Investors (QDII) are allowed to buy and hold offshore securities subject to certain quotas.	QFII pension and insurance funds, mutual funds, charitable foundations, endowment funds, government investment management companies, and open-end funds have a principal lock-up of 3-months. Other QFIIs are required to keep their investments in the People's Republic of China (PRC) for 1 year. For listed bonds, there is no holding period. Repatriation of foreign exchange requires the approval of the State Administration for Foreign Exchange.
Hong Kong, China	There are no specific restrictions on portfolio investments and foreign investors may place funds directly in money market instruments.	Nonresidents are free to purchase debt instruments.	Nonresidents are free to purchase equity securities. Investment in banks requires Hong Kong Monetary Authority (HKMA) approval.	Residents are generally free to invest abroad. Overseas investment by institutional investors (e.g., insurance companies, banks) must be within certain limits and may require HKMA approval.	No restrictions on repatriation of capital and profits.

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Table 20 *continued*

Market	Capital Inflow			Capital Outflow	
	Money Market Instruments	Bond Market Instruments	Equity Instruments	Resident Investors	Nonresident Investors
India	Non-Resident Indians (NRIs) may invest in money market mutual funds floated by commercial banks and other public or private financial institutions that are duly authorized by the Securities and Exchange Board of India (SEBI) on a repatriation basis.	Registered foreign institutional investors (FIIs) and non-residents are allowed to invest in local currency (LCY)-denominated perpetual bonds and other bonds issued by banks subject to certain conditions. FII investment in government and corporate debt securities is allowed and is subject to certain limits. Nonresidents can invest in bonds issued by infrastructure debt funds (IDFs).	FIIs have to be registered with SEBI in order to invest in the equity market. There is no cap on FII investment in shares of an Indian company, but the holdings of FIIs in any Indian company are subject to a certain ceiling.	Residents may remit up to the equivalent of US$200,000 per financial year for any permissible current or capital account transaction, or a combination of both.	All foreign investments are freely repatriable except in cases where: (i) the foreign investment is subject to a lock-in period and (ii) NRIs choose to invest specifically under non-repatriable schemes.
Indonesia	Foreign investors are allowed to purchase money market instruments locally.	Foreign investors are allowed to purchase debt securities without limit except for retail bonds for which they are only allowed to purchase in the secondary market. Nonresidents may not purchase more than 1% of any investment fund.	Foreign investors are allowed to purchase shares without limit with the exception of shares in finance company joint ventures. Nonresidents may not purchase more than 1% of any investment fund.	Resident banks are not allowed to invest in LCY-denominated securities issued by nonresidents. Pension funds are not allowed to invest in securities abroad while mutual funds may invest up to 15% of their net asset value. Insurance and reinsurance companies are allowed to invest abroad in shares listed on a stock exchange, bonds and medium-term notes rated A or higher, and private placements.	No restrictions apply to repatriation of capital, remittance of dividends, and profits.
Japan	Nonresidents are free to purchase money market securities.	Nonresidents are free to purchase debt securities.	Controls will only apply if the purchase of equity instruments is affected by inward direct investment laws.	Controls will apply to an insurance company's purchase of securities issued on a foreign financial market if it would result FCY-denominated assets exceeding 30% of its total assets.	No restrictions on repatriation of capital, profits, dividends, and interest.

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Table 20 *continued*

Market	Capital Inflow			Capital Outflow	
	Money Market Instruments	Bond Market Instruments	Equity Instruments	Resident Investors	Nonresident Investors
Korea, Republic of	Nonresidents are allowed to invest in domestic money market instruments. The sale of FCY-denominated money market instruments abroad requires notification to a designated foreign exchange bank. Sale of FCY-denominated money market instruments exceeding US$30 million or LCY-denominated money market instruments by residents abroad requires notification to the Ministry of Strategy and Finance (MOSF).	Nonresidents are allowed to buy bonds and other debt securities sold by residents, but notification to a foreign exchange bank or The Bank of Korea is required if the purchase is not made through an account exclusively for investment.	Nonresidents are freely allowed to invest in shares of local companies, but notification to a foreign exchange bank or The Bank of Korea is required if the purchase is not made through an account exclusively for investment. The purchase of listed shares issued by resident public sector utilities in the process of privatization is subject to controls.	Residents are allowed to buy bonds issued abroad, but notification to The Bank of Korea is required if the purchase is not made through an account exclusively for investment.	Proceeds from capital transactions in excess of US$500,000 or its equivalent must be repatriated within 1.5 years of the settlement date.
Malaysia	Nonresidents are allowed to purchase money market instruments without any restrictions.	Nonresidents are allowed to purchase bond market instruments without any restrictions.	Nonresidents are allowed to purchase equity instruments without any restrictions.	Resident with domestic borrowing may invest abroad subject to certain limits. Unit trust management companies, fund management companies, insurers and *takaful* (Islamic insurance) operators' investment abroad are subject to limits.	Nonresidents are free to repatriate funds from divestment of LCY-denominated assets or profits and dividends arising from investments.
Philippines	There are no restrictions on the purchase of money market instruments.	There are no restrictions on the purchase of bonds.	There are no restrictions on the purchase of shares in the local stock market.	A resident's investments abroad in excess of US$60 million a year requires prior regulatory approval. Registration is required if foreign exchange used for investments will be purchased from Bangko Sentral ng Pilipinas (BSP) authorized agent banks (AABs) and/or AAB-foreign exchange corporations.	Regulatory approval and registration are required if the foreign exchange needed to service the capital repatriation of dividend, profits, and earnings is sourced from BSP AABs and/or AAB-foreign exchange corporations.
Singapore	No restrictions on nonresidents purchasing money market instruments.	No restrictions on nonresidents purchasing bond market instruments.	No restrictions on nonresidents purchasing equity instruments.	No restrictions on investments by residents abroad.	Nonresident financial entities must convert Singapore dollar proceeds from Singapore dollar loans (exceeding SGD5 million), equity listings, and bond issuances into FCY before using such funds to finance activities outside Singapore.

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Table 20 *continued*

Market	Capital Inflow			Capital Outflow	
	Money Market Instruments	Bond Market Instruments	Equity Instruments	Resident Investors	Nonresident Investors
Thailand	Nonresidents are allowed to invest in LCY money market instruments, but their investment in instruments issued by local financial institutions is subject to a certain borrowing limit.	Nonresidents are allowed to invest in LCY bonds, but their investment in LCY bonds issued by local financial institutions is subject to a borrowing limit.	Nonresidents are allowed to buy shares of a local company, but their equity participation may be limited to various thresholds if the company is subject to the provisions of the Foreign Business Act or other related laws.	Institutional investors—the Government Pension Fund, Social Security Fund, insurance companies, mutual funds, provident funds, securities companies, specialized financial institutions, and Thai firms with asset size of at least THB5 billion—can invest without limit in securities issued abroad by Thai juridical persons as well as in foreign securities issued by nonresidents of up to US$50 million (per investor) without Bank of Thailand (BOT) approval. Individual and corporate investors can invest in foreign securities via private funds or securities companies per rules of the Securities and Exchange Commission (SEC) subject to BOT approval.	Proceeds of up to US$50,000 or its equivalent can be retained abroad, while proceeds exceeding the threshold must be repatriated on receipt and within 360 days of the transaction date.
Viet Nam	Foreign investors are allowed to purchase money market instruments locally.	Foreign investors are required to open a VND-denominated securities trading account to sell or purchase debt securities.	Foreign investors are required to open a VND-denominated securities trading account to sell or purchase listed securities on the stock exchange. Foreign investors are allowed to hold up to 49% of a company's current shares, except in the banking sector, which has a limit of 30%.	Residents may invest in shares and bonds abroad subject to certain limits. Institutional investors are not allowed to invest in securities issued by nonresidents.	Repatriation of profits is allowed within 60 days of the end of the fiscal year during which the investment took place.

Sources: International Monetary Fund's Annual Report on Exchange Arrangements and Exchange Restrictions 2012, and local market sources.

Table 21: Tax Treatments in Emerging East Asian Markets

Market	Withholding Tax on Interest Income	
	Government	Corporate
China, People's Rep. of	Exempt from tax	Non-resident investors are subject to 10.0% withholding tax, which may be reduced due to tax treaties.
Hong Kong, China	Exempt from tax	Individuals are exempt from tax. Corporations are subject to a 17.5% profits tax.
Indonesia	Residents and permanent establishments are subject to 15.0% tax on bonds and 20.0% tax on *Sertifikat* Bank Indonesia. Non-residents are subject to 20.0% tax, which is subject to reductions based on treaty. For mutual funds registered with Bapepam LK, the tax rate is 5% for 2011 to 2013, and 15% thereafter.	Residents and permanent establishments are subject to 15.0% tax. Non-residents are subject to 20.0% tax, which is subject to reductions based on treaty. For mutual funds registered with Bapepam LK, the tax rate is 5% for 2011 to 2013, and 15% thereafter.
Korea, Republic of	Domestic institutional investors are subject to 14.0% withholding tax. Individual resident investors are subject to 15.4% withholding tax.[a] Non-resident investors are subject to 14.0% withholding tax on interest income.	Domestic institutional investors are subject to 14.0% withholding tax. Individual resident investors are subject to 15.4% withholding tax.[a] Non-resident investors are subject to 14.0% withholding tax on interest income.
Malaysia	Exempt from tax	Exempt from tax
Philippines	Subject to 20% tax withheld at source. Foreign corporations are subject to 30% tax on the gross amount of income derived within the Philippines. Non-resident individuals not engaged in trade or business are subject to 25% tax on the gross amount of income derived in the Philippines.	Standard rate of withholding tax on income payments from corporate bonds is 20%.
Singapore	Exempt from tax	Individual investors are tax exempt. Resident and non-resident institutional investors are exempt from withholding tax, subject to qualifying conditions.
Thailand	Individual resident investors are subject to 15.0% withholding tax. Institutional resident investors are subject to 1.0% withholding tax. Non-resident investors are except from tax.	Individual resident investors and non-resident investors are subject to 15.0% withholding tax.
Viet Nam	Subject to 5% withholding tax	Subject to 10% withholding tax.

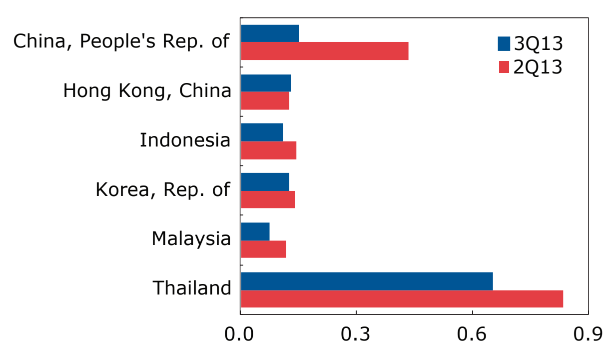
[a] 1.4% local tax is added to 14% national income tax.
Source: *AsianBondsOnline*.

that make them less liquid. Perpetual bonds and *sukuk* (Islamic bonds) would be examples of this. **Figure 16** graphs recent quarterly turnover ratios for corporate bonds in the region. Trading volume data is not available for Singapore or the Philippines.

Corporate bond market participants were asked to respond to questions similar to ones put to government bond market participants. **Table 22** compiles responses from corporate bond market participants with regard to average issue sizes, bid–ask spreads, and average trading sizes.

Average Issue Size. The average issue size for corporate bonds declined in 2013 for six out of the 10 markets surveyed. Lower average issue sizes were noted for Indonesia, the Republic of

Figure 16 : LCY Corporate Bond Turnover Ratios



LCY = local currency.
Note: Turnover ratios are calculated as LCY trading volume (sales amount only) divided by average LCY value of outstanding bonds during each 3-month period.
Sources: People's Republic of China (*ChinaBond*); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Indonesia Stock Exchange); Republic of Korea (EDAILY *Bondweb* and The Bank of Korea); Malaysia (Bank Negara Malaysia); and Thailand (Bank of Thailand and Thai Bond Market Association).

Table 22: LCY Corporate Bond Markets Quantitative Indicators

		PRC	HKG	IND	INO	KOR	MAL	PHI	SIN	THA	VIE	Regional
Typical Issue Size of Corporate Bonds	Average (US$ million)	722.9	54.8	123.8	84.7	60.0	120.3	126.5	142.7	91.5	130.3	165.7
Typical Bid–Ask Spread for New Corporate Issues	Average (bps)	11.4	31.9	11.1	26.1	4.4	9.8	36.6	21.9	8.6	–	18.0
	SD	4.7	21.0	3.4	13.2	4.7	6.0	29.0	15.6	4.0	–	12.2
	CV	0.4	0.7	0.3	0.5	1.1	0.6	0.8	0.7	0.5	–	0.8
Typical Transaction Size of LCY Corporate Bonds	Average (US$ million)	5.3	3.4	3.2	0.6	9.3	2.3	0.2	1.2	0.7	14.2	4.0
	SD	2.2	2.9	1.3	0.6	0.0	1.7	0.2	0.7	0.5	–	4.5
	CV	0.4	0.8	0.4	0.9	0.0	0.7	0.9	0.6	0.7	–	1.1

– = not applicable, bps = basis points; CV = coefficient of variation; HKG = Hong Kong, China; IND = India; INO = Indonesia; KOR = Republic of Korea; LCY = local currency; MAL = Malaysia; PHI = Philippines; PRC = People's Republic of China; SD = standard deviation; SIN = Singapore; THA = Thailand; VIE = Viet Nam.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Korea, Malaysia, the Philippines, Singapore, and Thailand. The largest average issue size was recorded in the PRC (US$722.9 million), followed by Singapore (US$142.7 million) and Viet Nam (US$130.3 million). The smallest average sizes were in Hong Kong, China (US$54.8 million); the Republic of Korea (US$60.0 million); and Indonesia (US$84.7 million).

Bid–ask Spreads. Bid–ask spreads for a newly issued corporate bond were wider for all markets this year compared with 2012 except for Thailand, where bid–ask spreads fell to 8.6 bps. The highest bid–ask spreads this year came from the Philippines at 36.6 bps, followed by Hong Kong, China at 31.9 bps and Indonesia at 26.1 bps. The lowest bid–ask spreads were noted in the Republic of Korea at 4.4 bps, Thailand at 8.6 bps, and Malaysia at 9.8 bps.

Bid–ask spreads for corporate bonds are typically wider vis-à-vis government bonds, due to their low levels of liquidity. In most markets, corporate bond liquidity only lasts for a few months (or even just a few weeks in some cases) after issuance.

Average Trading Size. The average transaction size for corporate bonds rose in four markets in 2013—Hong Kong, China; India; the Republic of Korea; and Singapore—while falling in four—the PRC, Malaysia, the Philippines, and Thailand. Meanwhile, average transaction size was unchanged in Indonesia at US$0.6 million. The largest average transaction sizes were noted in the Republic of Korea at US$9.3 million, Viet Nam at US$14.2 million, and the PRC at US$5.3 million. The smallest trading sizes were found in the Philippines at US$0.2 million, Indonesia at US$0.6 million, and Thailand at US$0.7 million.

Inter-Market Comparisons

People's Republic of China

Market participants said that the most traded corporate bonds in the PRC are commercial paper and medium-term notes. This is evident in the bid–ask spreads as well **(Table 23)**. Corporate bond turnover ratios also show that medium-term notes are the most highly traded bonds **(Figure 17)**.

SOE bonds have low bid–ask spreads as a result of the larger SOEs, which carry very high credit ratings and are known as "Golden AAA." Examples include the State Grid Corporation of China and the China National Petroleum Corporation. While carrying no government guarantee, the market expects that these institutions carry such economic significance that the government will take steps to ensure that they do not default.

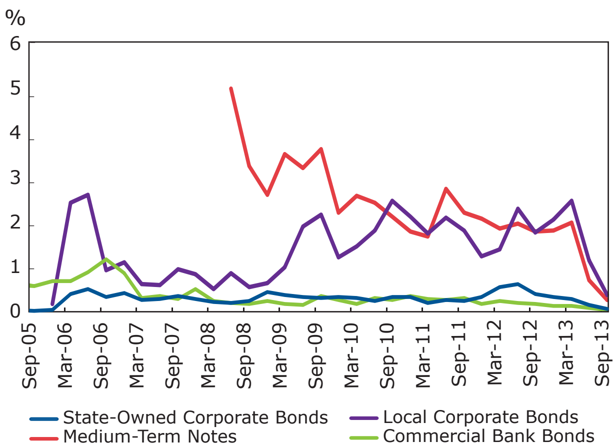
The custodianship and settlement of medium-term notes and commercial paper has been moved from *ChinaBond* to the Shanghai Clearing House.

Table 23: LCY Corporate Bond Survey Results—People's Republic of China

	SOE Bonds	Local Corporate Bonds	MTNs	Commercial Bank Bonds	Commercial Paper
Average Issue Size (CNY million)	11,375.0	4,425.0	4,725.0	19,000.0	9,062.5
Bid–Ask Spread (bps)	7.4	11.4	9.5	14.4	8.7
Average Trading Size (CNY million)	47.7	32.5	47.2	58.0	43.3

bps = basis points, LCY = local currency, MTNs = medium-term notes, SOE = state-owned enterprise.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Figure 17: Trends in the PRC's LCY Corporate Bond Turnover Ratios



LCY = local currency, PRC = People's Republic of China.
Source: *ChinaBond*.

The Shanghai Clearing House is also responsible for settling trades on the Shanghai Exchange Market. The exchange market allows for the use of corporate bonds in the use of repo transactions and the removal of counterparty risk.

India

The average bid−ask spread for LCY corporate bonds in India is about 11.1 bps, based on the 2013 survey results. This was, however higher than the average spread from the survey results in the previous year. By type of corporate bond, the bid−ask spread for bonds issued by financial institutions averaged 7.9 bps, less than the 11.3 bps for bonds issued by industrial companies and the 16.7 bps for bonds issued by non-financial and non-industrial corporates **(Table 24)**. These results indicate that financial bonds appear to be the most liquid type of corporate bond.

In terms of the average trading size of LCY corporate bonds, the survey results showed an average of INR202.8 million, which was larger than the previous year's average. Furthermore, the results reveal that average trading sizes were the same for bonds issued by financial institutions and industrial firms. Among bonds issued by financial institutions, market participants in the survey identified those of the Housing Development Finance Corporation, Power Finance Corporation, and Rural Electrification Corporation as among the most frequently traded bonds. For bonds issued by industrial companies, the most commonly traded names include Hindalco Industries and Sterlite Industries.

Based on data from the Securities and Exchange Board of India (SEBI), the trading volume for LCY corporate bonds fell 24.2% q-o-q, but rose 27.9% y-o-y to reach INR2.4 trillion in 3Q13 **(Figure 18)**.

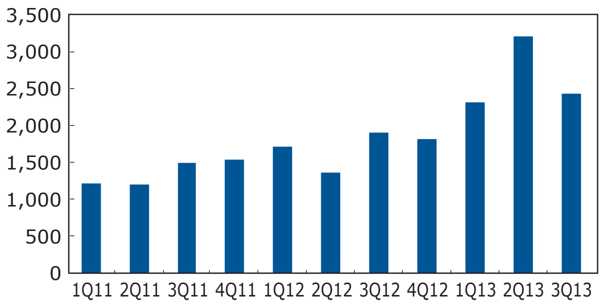
Market participants in the survey have shared their thoughts on the potential impact of higher interest rates on LCY corporate issuers in India. There is a view that there is a limited probability of default in the market as it comprises mostly

Table 24: LCY Corporate Bond Survey Results—India

	Financial Institutions	Industrials	Other Corporates
Average Issue Size (INR million)	11,972.2	5,083.3	4,916.7
Bid–Ask Spread (bps)	7.9	11.3	16.7
Average Trading Size (INR million)	216.7	216.7	100.0

bps = basis points, LCY = local currency.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Figure 18: Trading Volume for LCY Corporate Bonds in India



LCY = local currency.
Source: Securities and Exchange Board of India.

high-grade issuers such as quasi-government entities and large corporates. However, those corporates that have low credit ratings and/or high leverage ratios are believed to be in a more difficult position amid high interest rates. Moreover, market participants expressed their concern that the banking system appears to be under more stress recently as shown by a rise in its non-performing assets (NPAs).

In the survey, some market players have proposed measures that they believe can contribute to the further development of India's LCY corporate bond market. These include (i) deepening the interest rate derivatives market and providing an appropriate benchmark for interest rate swaps; (ii) establishing a centralized information source for corporate bonds and addressing the problem of asymmetric information in the market; (iii) promoting the use of credit default swaps as a hedging tool; and (iv) increasing the participation of individual retail investors, provident and pension funds, and foreign institutional investors (FIIs). In October, SEBI released a circular mandating that the two securities depository institutions—National Securities Depository Limited (NSDL) and Central Depository Services Limited (CDSL)—jointly create, host, maintain, and disseminate a centralized database for corporate bonds. In April, SEBI decided to permit FIIs to invest in corporate debt without buying debt limits until the total investment reaches 90%, after which an auction mechanism will be initiated to allocate the remaining limits.

Republic of Korea

In the Republic of Korea's LCY corporate bond market, special public bonds and financial debentures appear to be more liquid than corporate bonds issued by private sector companies. The 2013 survey results show that the lowest average bid–ask spread stood at 1.9 bps, for both special public bonds and financial debentures, while the average spread was relatively high for private corporate bonds at 5.4 bps **(Table 25)**. Compared with the previous year's survey results, the bid–ask spreads for all three corporate bond types were higher in 2013, implying a tightening of liquidity conditions in the LCY corporate bond market. Average trading sizes stood at KRW10 billion for all three types of corporate bonds, the same level in the previous year. In addition, average issue sizes were about the same for special public bonds and financial debentures at KRW70 billion, while the average issue size for private corporate bonds was a lower KRW53 billion.

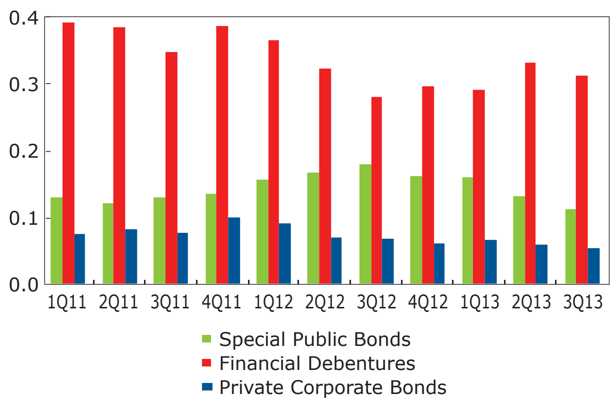
This view of corporate sector liquidity is broadly consistent with the turnover ratios for the different types of corporate bonds. The turnover ratios for special public bonds, financial debentures, and private corporate bonds in 3Q13 stood at 0.11, 0.31, and 0.05, and these were all lower compared with 2Q13 and 3Q12—except for financial debentures, which recorded an annual

Table 25: LCY Corporate Bond Survey Results—Republic of Korea

	Special Public Bonds	Financial Debentures	Private Corporate Bonds
Average Issue Size (KRW billion)	70.0	70.0	53.3
Bid–Ask Spread (bps)	1.9	1.9	5.4
Average Trading Size (KRW billion)	10.0	10.0	10.0

bps = basis points, LCY = local currency.
Note: Special public bonds are bonds issued by state-owned enterprises, financial debentures are issued mostly by banks and financing companies, and private corporate bonds are issued mostly securities companies and by private non-financial corporates.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Figure 19: Turnover Ratio for Special Public Bonds, Financial Debentures, and Private Corporate Bonds in the Republic of Korea



Source: EDAILY *BondWeb*.

increase in the turnover ratio **(Figure 19)**. For LCY corporate bonds as a whole, the turnover ratio slipped to 0.13 in 3Q13 from 0.14 in 2Q13 and 0.15 in 3Q12.

Most survey respondents from the Republic of Korea's LCY corporate bond market cited bonds issued by the Korea Electric Power Corporation (KEPCO) and Korea Deposit Insurance Corporation (KDIC) as two of the most commonly traded special public bond types. For bonds issued by banks, most respondents identified Korea Development Bank (KDB) bonds as one of the most traded. And for private corporate bonds, those issued by POSCO were among the most traded, according to the market participants surveyed.

In July, the Financial Services Commission (FSC) announced measures to invigorate the LCY corporate bond market and prevent the worsening of corporate funding conditions. Specifically, these measures include (i) a liquidity support program through government issuance of primary collateralized bond obligations, (ii) tax incentives for dividends of corporate bond funds with more than 30% of bonds rated BBB− or below, (iii) improvements in the Qualified Institutional Buyer system, (iv) easing of relevant regulations to boost demand for corporate bonds, (v) revisions to the regulations on asset-backed securities, (vi) reforms in the credit rating system, (vii) enhancements to the system of corporate bond issuance, (viii) improvements to the system of corporate bond management, and (ix) strengthened effectiveness and transparency of the bond distribution system. A majority of survey respondents shared their view that these measures would be beneficial in developing the LCY corporate bond market.

FSC also made an announcement in August that Basel III capital regulations will be applied to bank holding companies effective 1 December 2013. The regulations provide that the minimum capital requirement ratios for these companies be set at 4.5% for common equity capital, 6.0% for Tier 1 capital, and 8.0% for total capital. In addition, a capital conservation buffer will be introduced to bank holding companies starting in 2016. However, some survey respondents expect that such measures may reduce the issuance of financial debentures.

Several survey responses have indicated that the rise in interest rates and the tightening of liquidity conditions will have potential negative effects for certain sectors in the Republic of Korea. One respondent opined that this will put an increased financial burden on households. Another felt that a few conglomerates may encounter more difficulties in meeting their interest payments, and that such trends may not just impact negatively on corporate profitability but also on corporate credit ratings and funding costs. Another believed that this phenomenon of tighter liquidity and higher rates may hurt SMEs.

Malaysia

Malaysia's corporate bond market turnover ratio fell to 0.07 in 3Q13 from 0.12 in 2Q13. The lower turnover ratio shows that the extent of corporate bond trading in the secondary market relative to the bonds outstanding has been less active in previous months. The decline in liquidity was more pronounced in Islamic instruments than in conventional bonds, as the majority of private debt securities (PDSs) have Islamic structures. Trading activity for *sukuk* accounted for 67% of the trading volume in 3Q13 compared with 74% in 2Q13. In absolute terms, the trading of *sukuk* dropped to MYR20.6 billion in 3Q13 from MYR35 billion in 2Q13, resulting in a decline in the turnover ratio for Islamic bonds to 0.05 from 0.09 in the previous quarter.

By instrument, trading volume tends to concentrate in MTNs, both conventional and Islamic. Islamic medium-term notes (IMTNs) comprised 57% of total corporate bond trading volume, while MTNs represented 23%. The turnover ratio for IMTNs tumbled to 0.04 in 3Q13 from 0.07 in 2Q13, as the trading volume of IMTNs plummeted to MYR17.4 billion in 3Q13 from MYR29.8 billion in the previous quarter.

Average bid–ask spreads for Malaysian corporate bonds widened to 9.8 bps in 2013 from 9.4 bps in 2012. Bonds (conventional and Islamic) had a bid–ask spread of 9.2 bps, while MTNs (conventional and Islamic) had a spread of 11.5 bps **(Table 26)**.

Most of the PDSs have an average trading size of MYR8.1 million except for conventional bonds, which have an average transaction size of MYR7.5 million.

Market analysts observed that liquidity for newly issued LCY corporate bonds dries up quickly, usually within 2 weeks, unless the lead arrangers provide a two-way price quote. Liquidity may re-emerge depending on market conditions and the trading interest of participants. On the other hand, liquidity can remain meaningful beyond a few weeks for bonds with an issuance size of at least MYR1 billion and a credit rating of AA1 to AAA.

Table 26: LCY Corporate Bond Survey Results—Malaysia

	Conventional Bonds	Islamic Bonds	MTNs	Islamic MTNs
On-the-Run				
Bid–Ask Spread (bps)	9.2	9.2	11.5	11.5
Average Trading Size (MYR million)	7.5	8.1	8.1	8.1
Off-the-Run				
Bid–Ask Spread (bps)	15.6	15.6	14.2	14.2
Average Trading Size (MYR million)	6.9	6.9	6.9	6.9

bps = basis points, LCY = local currency, MTNs = medium-term notes.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Potential improvements to the market include the application of a range of policies and measures to achieve ample liquidity. Many of these policies and measures have been aimed at widening the investor base and improving transparency. To enhance investor diversity, market participants cited the standardization of regulations and tax regimes to facilitate intra-ASEAN trading and investments, and a reduction in the standard trading lot to MYR1 million from MYR5 million to encourage retail investor participation. For greater transparency, survey respondents mentioned effective price discovery at primary (issuance) levels and more reliable domestic bond pricing data.

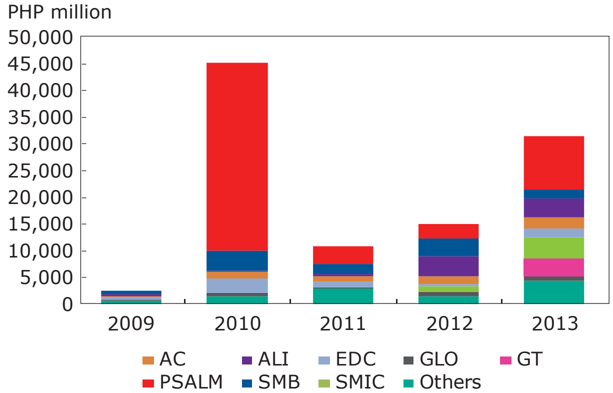
Other desired policies and measures identified by respondents support the deepening of the bond market. Examples include the creation of a market for distressed issues and other fixed-income products, such as a high-yield bond market, and the enhancement of information infrastructure, such as a one-stop resource for primary and secondary market information.

Philippines

The average bid–ask spread for Philippine corporate bonds increased slightly to 37 bps in 2013 from 35 bps in 2012, while the average trading size fell to PHP9.7 million from PHP20.9 million in 2012. The average issue size for corporate bonds also fell to PHP5.5 million in 2013 from PHP6.1 billion in 2012.

Trading volume data is not available for the Philippine corporate bond market as a whole. However, PDEx maintains a database on the secondary trading of corporate bonds listed on its

Figure 20: PDEx Trading Volume Trends—Corporate Bonds in the Philippines



AC = Ayala Corporation; ALI = Ayala Land, Inc.; EDC = Energy Development Corporation; GLO = Globe Telecom; GT = GT Capital Holdings; PDEx = Philippine Dealing and Exchange Corporation; PSALM = Power Sector Assets and Liabilities Management Corp.; SMB = San Miguel Brewery, Inc.; SMIC = SM Investment Corp.
Note: PDEx reports one side of the trade only.
Source: Philippine Dealing and Exchange Corporation (PDEx).

platform **(Figure 20)**. At the end of 3Q13, there were 20 Philippine companies that had their bonds listed with the exchange. This includes bonds issued by the National Home Mortgage Finance Corporation, known as *Bahay* Bonds 2, and Power Sector Assets and Liabilities Management Corporation (PSALM) bonds. *AsianBondsOnline* classifies the issuances of these two companies under government securities, since they are government-owned or -controlled corporations.

The secondary trading volume of corporate bonds is negligible compared to that of government securities, accounting for less than 1% of total bonds (government and corporate) traded in 2013. Nevertheless, the volume of secondary trading of corporate bonds grew to PHP31 billion in the first 9 months of 2013, up 141% compared with the same period in 2012.

Trading volume in 2010 was centered on PSALM bonds, comprising almost 78% of total trades that year. From 2011 to 2013, the trading volume of PSALM bonds declined to levels more comparable with those of the leading private sector issuers. The three companies with the highest trading volumes in 2013 were (i) SM Investment Corporation (PHP3.8 billion), (ii) Ayala Land, Inc. (PHP3.4 billion), and (iii) GT Capital Holdings (PHP3.3 billion).

Liquidity in the Philippine corporate bond market is very limited, since it is still a buy-and-hold market. Most investors tend to hold the corporate bonds up to maturity, due to yields that are better than most money market instruments presently available in the market.

Singapore

The average bid–ask spread for corporate bonds in Singapore widened to 21.9 bps in 2013 from 15.9 bps in 2012. Although the average trading size has increased slightly this year to SGD1.5 million from SGD1.4 million in 2012. The average issue size, on the other hand, has decreased to SGD179.2 million in 2013 from SGD194.5 million in 2012 **(Table 27)**.

Survey participants placed the typical tenor for a corporate bond in a range of around 5 years and made the following points:

- About 80% of Singapore corporate bonds remained unrated;
- Institutional investors (e.g., commercial banks) create their own internal ratings of select corporate issues, but this rating information is not made publicly available;
- Issuance by mid-sized companies became more frequent in 2013 due to demand for higher-yielding assets among private bank clients;

Table 27: LCY Corporate Bond Survey Results—Singapore

	Corporate Bonds
Average Issue Size (SGD million)	179.2
Bid–Ask Spread (bps)	21.9
Average Trading Size (SGD million)	1.5

bps = basis points, LCY = local currency.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

- Since the loan-to-deposits ratio for Singaporean banks has risen above 100%, banks are less eager to expand their loan books for smaller-sized companies;
- One constraint to the further participation of private banking clients in the corporate bond market is a regulation limiting the minimum trading size to SGD250,000 for securities on offer to institutional and sophisticated private investors; and
- If this limit could be reduced to a lower level, such as SGD125,000, it would improve market liquidity among the private banking client base, but regulators are unlikely to allow this.

Generally, the Singapore corporate bond market has evolved from one dominated by issuance from government–linked companies (e.g., Housing and Development Board) and blue chip private corporates to a market where mid-sized companies, high–yield corporates, and foreign issuers play an increasingly important role.

According to survey participants, the Singapore corporate bond market can be classified into four different sectors:

(i) large blue chips, including government-linked corporations (e.g., Housing and Development Board, Land and Transport Authority, and Public Utilities Board);

(ii) prominent local corporates, most of which are not government-linked corporations (e.g., UOB Bank, DBS Bank, Mapletree, Singtel, and Singapore Airlines);

(iii) mid-tier corporations, including companies that have established parent companies (e.g., Neptune Orient Lines, Hyflux, and Goodpack); and

(iv) corporations with higher-yielding bonds, most of which are mid–sized companies (e.g., Ezion Holdings, Aspial Corporation, Oxley Holdings, Hiap Hoe, and Mencast).

Perpetual bonds have also been highly successful in Singapore. Examples of perpetual issues in recent quarters include a SGD200 million perpetual bond issued by Sembcorp Industries at a coupon of 5.0% and a SGD850 million perpetual bond issued by UOB Bank at a coupon of 4.9%.

Foreign issuers have developed an appetite for issuance in Singapore, as Singapore dollar bonds provide cheap funding in a relatively stable currency. Quite a number of Indian corporations have issued SGD-denominated bonds—such as Tata Industries, Indian Oil Corporation, and ICICI Bank—to take advantage of this cheap funding. However, according to the survey participants, the performance of these bonds tends to lag US$-denominated bonds in any sell-off and recovery cycle. Liquidity in the Singapore dollar bond market is not as deep as the US dollar bond market.

In 2013, renminbi-denominated bonds are in the process of being introduced into Singapore's corporate bond market. Singapore has become the third offshore center for renminbi-denominated bonds in May of this year with issuance by HSBC, Standard Chartered, and the DBS Group. Renminbi-denominated bonds and SGD-denominated bonds share one important characteristic: investor interest in both types of bonds is driven in large part by expectations of currency appreciation. If Singapore-based banks and investment houses can offer a choice of either renminbi- or SGD-denominated bonds, they can greatly expand their product range.

Recently, the PRC and Singapore agreed on a set of initiatives to strengthen cooperation on financial sector development and regulation. One of these initiatives is for the PRC to extend its Renminbi Qualified Foreign Institutional Investor (RQFII) program to Singapore, with an aggregate quota of CNY50 billion, in order to allow qualified Singapore-based institutional investors to channel offshore renminbi from Singapore into the PRC's onshore securities markets.

Survey participants offered a number of policy prescriptions to help improve liquidity in Singapore's bond market:

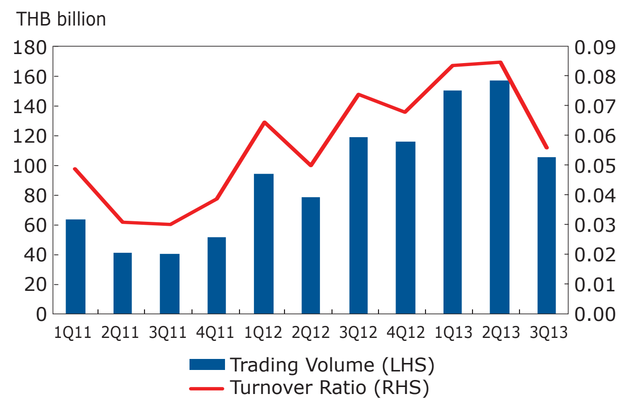
- more transparency in terms of price and volume (e.g., listing all bonds on the stock exchange);
- analysis of the investor base of corporate bonds;
- more corporate benchmarks as currently only HSBC offers local corporate benchmark, which comprises mostly high-grade names;
- reduced bond swap spreads to allow cross-border flows;
- public ratings to help improve corporate transparency and liquidity, and reduce capital charges for insurance companies;
- greater diversity of issuers and sectors involved in the bond market;
- a minimum benchmark size for new issues as a means of improving liquidity;
- broadened hedging avenues, especially for foreign investors;
- further development of the repo market, with repos extended into the corporate bond market;
- more comprehensive bond covenants; and
- increased investor education, especially with regard to complex-structured transactions.

THAILAND

The 2013 survey results show the average bid–ask spread for Thai LCY corporate bonds to be 8.6 bps, while the average trading size for on-the-run corporate debt stood at THB20.8 million, which was down from THB34.5 million in 2012. Meanwhile, the turnover ratio for LCY corporate bonds fell to 0.06 in 3Q13 from 0.08 in 2Q13 and 0.07 in 3Q12, with 3Q13's trading volume falling 32.8% q-o-q and 11.4% y-o-y **(Figure 21)**. Overall, these trends appear to reflect a tightening of liquidity in the Thai LCY corporate bond market in 3Q13. However, in the first 9 months of 2013, it appears that liquidity improved based on Thai Bond Market Association (ThaiBMA) data showing the trading volume of LCY corporate bonds in January–September reaching THB409.4 billion, up from THB288.8 billion in the same period in 2012.

A majority of survey respondents identified PTT Global Chemical as one of the most commonly traded names in the LCY corporate bond market. Other corporate names mentioned in the survey include Ayudhya Capital Auto Lease and Siam Cement. Some market participants believe that a rise in interest rates amid tighter liquidity conditions would raise funding costs and refinancing risks for corporates. Several respondents also shared the view that a tapering of the US Federal Reserve's asset purchase program would result in capital outflows from its LCY corporate bond market, restrain corporate debt issuance, and tighten market liquidity. Some survey respondents suggested that there was a need to entice more investors to participate in the market, develop

Figure 21: Turnover Ratio for LCY Corporate Bonds in Thailand



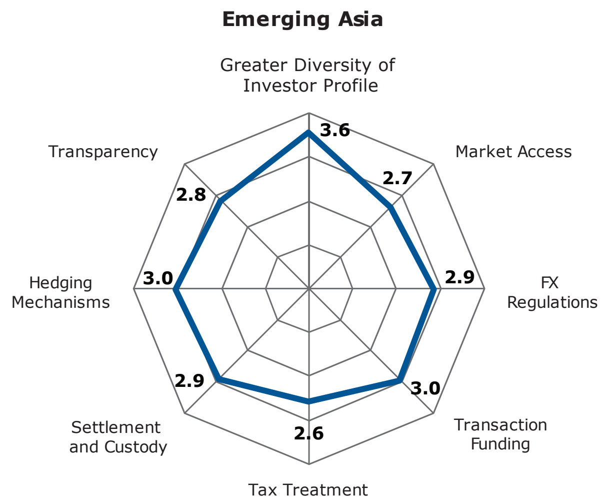
LCY = local currency.
Source: Bank of Thailand and The Thai Bond Market Association (ThaiBMA).

the repo market, and create more hedging instruments to deepen the market.

Qualitative Indicators for Corporate Bond Markets

Figure 22 summarizes the feedback of market participants on the structural and regulatory issues of the corporate bond markets in the region. The results for the region are similar to those from the government bond market survey, but the relative importance of the various types of structural issues are generally rated at lower levels for the corporate bond market than for the government bond market. Two exceptions to this, however are: greater diversity of investors and traders (3.6 for the corporate bond market and 3.5 for the government bond market) and settlement and custody (2.9 for the corporate bond market and 2.8 for the government bond market)

Figure 22: Regional Averages—LCY Corporate Bond Market Structural Issues



FX = foreign exchange, LCY = local currency.
Note: Emerging Asia comprises the People's Republic of China; Hong Kong, China; India; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Greater Diversity of Investors and Traders. While participants rate greater diversity of investors and traders as the most important factor for both government and corporate bond markets, participants rated investor diversity slightly higher for corporate bond markets (3.6) than for government bond markets (3.5). One reason for this is that corporate bonds tend to be more heterogeneous than government bonds. Thus, greater diversity, among investors, with differing standards for returns and credit quality, would help promote further development of the corporate bond sector.

Hedging Mechanisms. Hedging mechanisms were rated less important in the corporate bond market (3.0) than in the government bond market (3.3). Hedging mechanisms have less of an impact on corporate bonds because a large part of corporate bond risk tends to be idiosyncratic or issuer-specific in nature, making them less suitable for typical hedging instruments. Participants are also more tolerant of the risks in corporate bond markets than in government bond markets as they accept this fact in order to improve returns. Hedging mechanisms received their highest ratings in the corporate bond markets of Malaysia (3.7) and the PRC (3.5), and the lowest ratings in the Philippines and Viet Nam (2.5 each), and Hong Kong, China (2.3) **(Figure 23)**.

Transaction Funding. Transaction funding was rated as one of the more important structural issues (3.0) for the region's corporate bond market as a whole, although its rating was slightly less than the 3.2 rating for the region's government bond market. The highest rating for transaction funding was in the PRC (3.8) and would seem to reflect the liquidity concerns generated by the SHIBOR shock event in June.

Foreign Exchange Regulations.Foreign exchange regulations were rated less important for the region's corporate bond market (2.9) than the government bond market (3.1). These scores show that preferences for corporate bond investors are quite different from government bond investors and they typically have a much broader set of concerns.

Figure 23: Structural Issues for Individual LCY Corporate Bond Markets

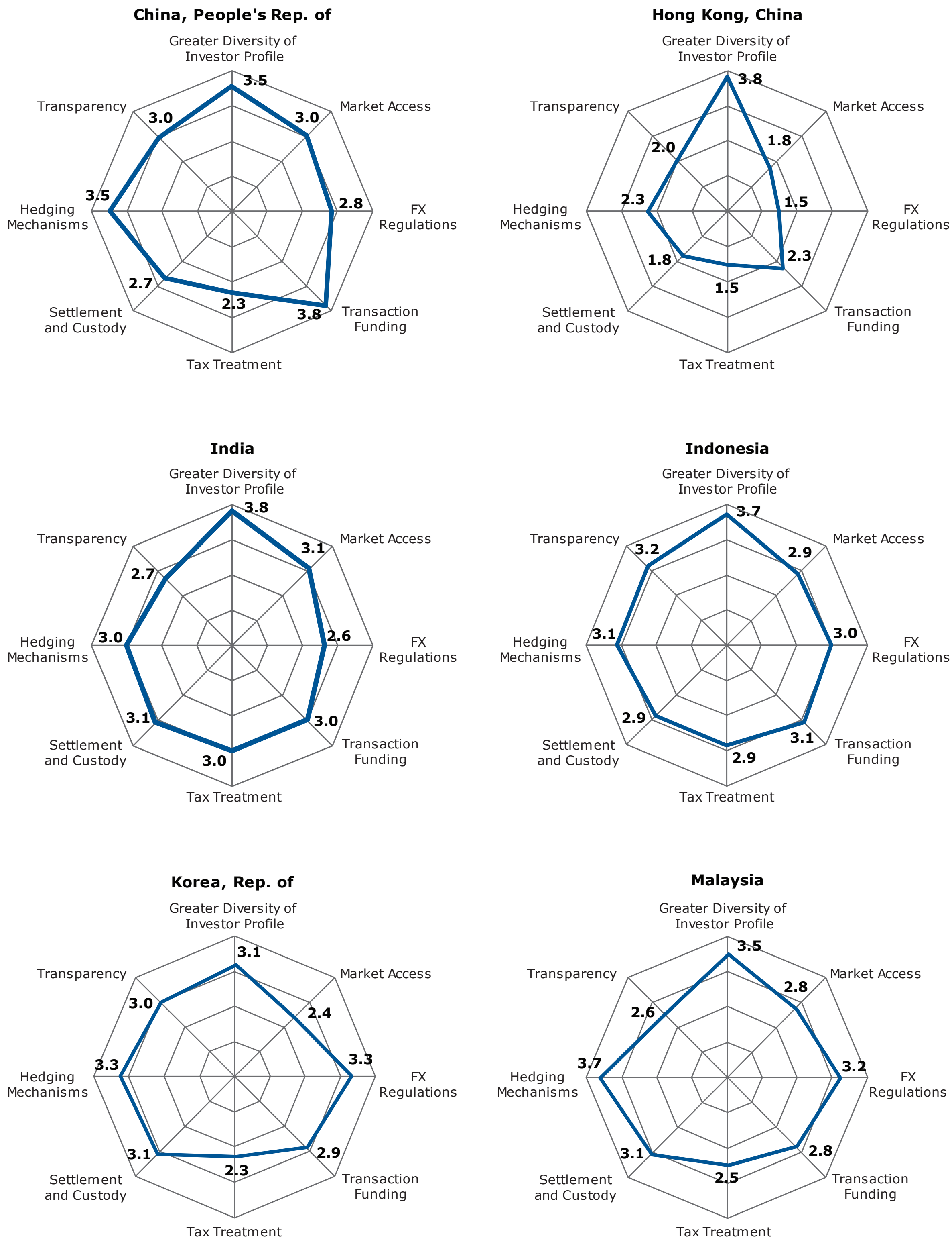


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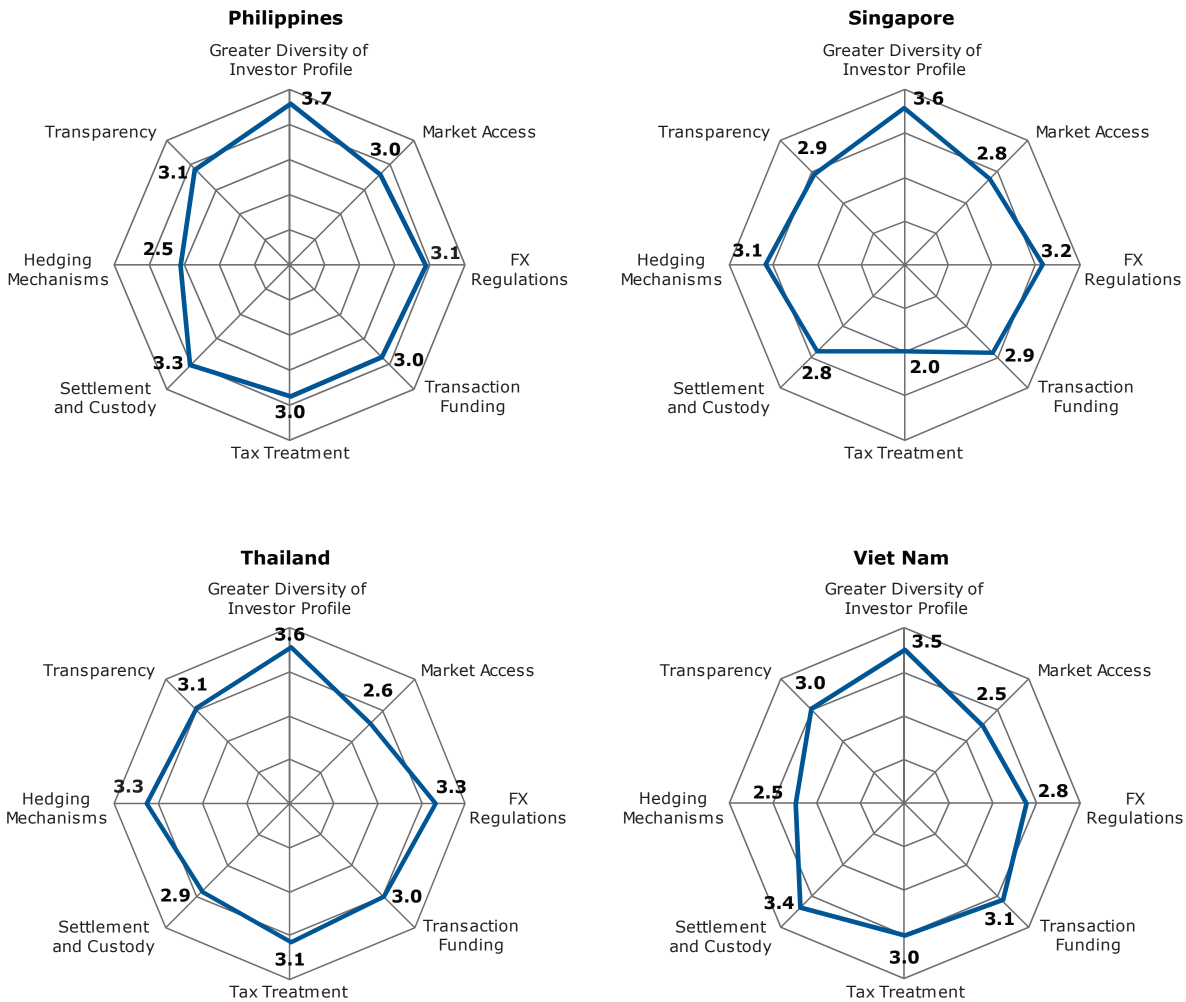
Figure 23 *continued*



FX = foreign exchange, LCY = local currency.
Source: *AsianBondsOnline* 2013 LCY Bond Market Liquidity Survey.

Settlement and Custody. Settlement and custody was rated as slightly more important in the corporate bond market (2.9) than in the government bond market (2.8). The infrastructure for trading and settlement tends to be more developed for government bonds than corporate bonds. One reason is that some governments will develop the infrastructure for government bond trading since this is used as a funding source. Government bond markets also tend to develop first, with the corporate bond market development lagging behind.

Market Access. The importance of market access in the region's corporate bond market (2.7) was rated below that of the government bond market (2.8).

Transparency and Tax Treatment. Transparency received a lower score in corporate bond markets (2.8) than in government bond markets (3.1), while tax treatment in both markets was rated similarly (2.6).

Responses on structural issues differed considerably among individual corporate bond markets:

- In 2013, PRC market participants rated transaction funding very highly at 3.8. As mentioned above, this score reflects the liquidity concerns in the PRC's corporate bond market arising from the SHIBOR shock event in June. The transaction funding rating in the PRC corporate bond market in 2012 was lower, albeit still significant, at 3.3.

- Hong Kong, China rates almost all categories of structural issues at low levels, reflecting its status as one of the most open capital markets in Asia.

- In the Republic of Korea, foreign exchange regulations are rated highly at 3.3, reflecting the government's macroprudential measures on capital flows. This is also the reason why hedging mechanisms were rated highly (3.3) in the Republic of Korea.

- In Singapore, foreign exchange regulations were the second highest qualitative liquidity indicator in its market, with a rating of 3.2, demonstrating the importance of the Singapore corporate bond market as a funding platform for foreign issuers.