AsianBondsOnline Annual Bond Market Liquidity Survey

Once a year, *AsianBondsOnline* undertakes a bond market survey to assess liquidity conditions in local currency (LCY) bond markets in emerging East Asia.[10] The survey aims to provide an updated evaluation of the state of liquidity for each market in the region and identify potential areas for development. It is our mission to provide meaningful perspectives to help bond market participants, particularly regulators and policymakers, address needed areas by drafting policy reforms and structural regulations for the further deepening and strengthening of LCY bond markets in the region.

As in past years, the survey was conducted through meeting interviews, phone interviews, and e-mail correspondence with bond market participants in each market in emerging East Asia. The participants included, among others, fixed-income sales and research desks, brokers, portfolio and fund managers, bond market strategists, bond pricing agencies, and other supervisory institutions. The survey was conducted simultaneously across all markets between the last week of September and the middle of October 2017. The survey was conducted after the United States (US) Federal Reserve meeting in September, after which it was announced that balance sheet normalization would take effect beginning in October.

The survey was structured to comprise two sections covering both quantitative and qualitative issues affecting bond market liquidity, as well as market-specific supplementary questions. In the quantitative section, survey respondents were requested to provide their views on certain liquidity indicators, particularly bid–ask spreads and single-trade transaction sizes. They were also asked to provide insights on whether liquidity conditions have improved over the last year. In the qualitative section, participants were asked to provide their perceptions of how their respective markets fared on a range of structural issues we identified.

For this year's survey, the overall assessment of market participants pointed to improved liquidity in five out of nine markets in emerging East Asia: Hong Kong, China; Indonesia; Singapore; Thailand; and Viet Nam. For Hong Kong, China and Singapore, liquidity was boosted by rising interest rates in the US. In Indonesia and Thailand, liquidity was enhanced by positive investor sentiments as foreign fund flows increased in both markets. Viet Nam's liquidity condition was buoyed by a stable macroeconomic outlook.

On the other hand, liquidity conditions were roughly unchanged to tighter in the People's Republic of China (PRC), the Republic of Korea, Malaysia, and the Philippines. In the PRC, liquidity conditions tightened amid the deleveraging measures of the government. Survey respondents in the Philippines noted that liquidity conditions had not improved from 2016 as investors remained cautious on account of the Federal Reserve's monetary tightening measures. Liquidity conditions were largely unchanged from the previous year in the Republic of Korea and Malaysia given uncertainties arising from both global and domestic factors.

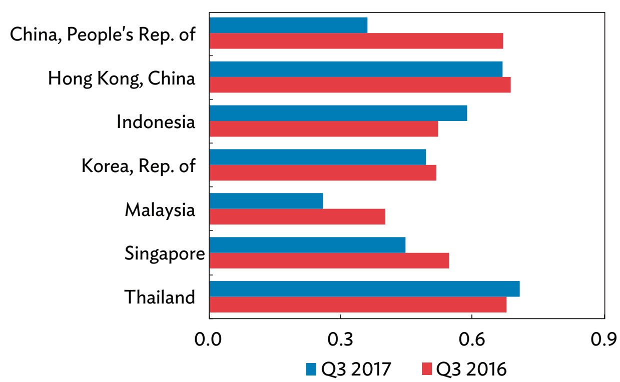
Quantitative Indicators for Government Bond Markets

There are several metrics that may be used as a gauge for assessing liquidity conditions in the bond market. Data on trading volume is used to measure market activity by providing the amount of transactions exchanged in the secondary market. *AsianBondsOnline* data on trading volume refers to the aggregate volume of transactions for a particular quarter, counting only one side of the trade or the sales side only. However, in a period when the size of a market is rapidly expanding, the turnover ratio may be considered as a better gauge for liquidity as it quantifies trading activity versus the overall size of the market. *AsianBondsOnline* computes the quarterly turnover ratio by taking the trading volume in a given quarter and dividing it by the average outstanding bonds for two consecutive quarters (current and immediately preceding quarters). Typically, a higher turnover ratio is an indication of a more liquid market.

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

The government bond turnover ratios for emerging East Asian markets for which data are available are provided in **Figure 14**. Both Indonesia and Thailand recorded higher government bond turnover ratios in the third quarter (Q3) of 2017 than in Q3 2016 amid increased demand for government bonds from foreign investors. In both markets, the foreign holdings' share has steadily risen this year. In terms of turnover ratio, the most active markets in the region in Q3 2017 were those of Thailand (0.70); Hong Kong, China (0.67); and Indonesia (0.59).

Figure 14: Local Currency Government Bond Turnover Ratios



Q3 = third quarter.
Notes:
1. Turnover ratios are calculated as local currency trading volume (sales amount only) for the quarter divided by the average local currency value of outstanding bonds between the preceding and current quarters.
2. For the Republic of Korea and Thailand, Q3 2017 data are based on *AsianBondsOnline* estimates.

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); Singapore (Monetary Authority of Singapore and Singapore Government Securities); and Thailand (Bank of Thailand and Thai Bond Market Association).

Another indicator used for measuring liquidity in bond markets is bid–ask spread or bid–offer spread, which indicates the cost of executing a trade transaction. The bid–ask spread is the difference between the ask and bid price of a bond, normally quoted in terms of yield and measured in basis points (bps). However, some markets quote the bid–ask spread in terms of price, such as Indonesia's, in which case it is measured in cents. Therefore, we convert the bid–ask spread provided (in terms of price) to make it comparable with other markets in the region. A narrow or small bid–ask spread indicates good liquidity conditions. Also, bid–ask spreads for on-the-run issues generally tend to be smaller compared with off-the-run issues.

Based on this year's survey, the bid–ask spreads for Treasury bonds in emerging East Asia are detailed in **Table 5**. The regional average bid–ask spread for on-the-run government securities narrowed to 3.2 bps in this year's survey from 3.8 bps in the 2016 survey. Most markets in the region posted a narrower bid–ask spread this year, with the largest declines noted in Viet Nam and Indonesia. In the PRC, the Republic of Korea and

Table 5: Local Currency Government Bond Markets Quantitative Indicators

		PRC	HKG	INO	KOR	MAL	PHI	SIN	THA	VIE	Regional
Typical Bid–Ask Spread On-the-Run	Average (bps)	1.0	9.0	3.3	0.5	1.9	3.7	3.0	1.8	5.0	3.2
	SD	0.0	8.5	1.1	0.4	0.4	1.3	0.9	0.4	0.0	2.6
	CV	0.0	0.9	0.3	0.8	0.2	0.3	0.3	0.2	0.0	0.8
Typical Bid–Ask Spread Off-the-Run	Average (bps)	3.9	9.0	8.6	0.9	4.8	12.0	3.5	5.3	10.0	6.4
	SD	1.3	8.5	3.3	0.5	0.4	4.7	0.8	1.8	0.0	3.6
	CV	0.3	0.9	0.4	0.6	0.1	0.4	0.2	0.3	0.0	0.6
Accepted LCY Bond Transaction Size On-the-Run	Average (USD million)	7.8	8.0	1.9	7.1	4.6	1.7	7.4	4.3	2.7	5.0
	SD	3.4	2.3	1.4	4.2	2.7	1.1	1.5	1.9	0.8	2.6
	CV	0.4	0.3	0.7	0.6	0.6	0.6	0.2	0.4	0.3	0.5
Accepted LCY Bond Transaction Size Off-the-Run	Average (USD million)	6.8	8.0	1.3	9.0	3.6	0.9	4.6	1.9	2.2	4.2
	SD	3.9	2.3	0.9	0.6	2.4	0.3	1.1	0.7	0.0	3.0
	CV	0.6	0.3	0.7	0.1	0.7	0.4	0.2	0.4	0.0	0.7

bps = basis points; CV = coefficient of variation; HKG = Hong Kong, China; 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; USD = United States dollar; 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 emerging East Asian markets.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

Singapore, the bid–ask spreads were unchanged from last year's survey. The only market where the bid–ask spread widened was in Hong Kong, China (9.0 bps), where market participants noted that Hong Kong Special Administrative Region (HKSAR) bonds were deemed to be less liquid compared with other government securities. (We used HKSAR bonds for Hong Kong, China as the Hong Kong Monetary Authority no longer issues Exchange Fund Notes [EFNs] with maturities greater than 2 years.)

The lowest on-the-run bid–ask spreads in the region were seen in the Republic of Korea (0.5 bps) and the PRC (1.0 bp), which is reflective of these two markets being the largest government bond markets in the region. (The PRC's government bond market is the largest in emerging East Asia, followed by the Republic of Korea's.) The widest bid–ask spread in emerging East Asia was observed in Hong Kong, China.

The regional average for off-the-run government bonds for this year's survey narrowed to 6.4 bps from 6.6 bps in 2017, with most markets in the region posting lower spreads this year. It was only in the PRC (3.9 bps) and Viet Nam (10.0 bps) where the off-the-run bid–ask spread widened. Meanwhile, it was unchanged in Singapore (3.5 bps).

Another indicator for assessing liquidity is the average value of a single transaction or trade. The larger the average size of a single trade, the greater the capacity of the market to execute large-size transactions. For this year's survey, the regional average for single-trade transaction size for on-the-run government securities was USD5.0 million, slightly lower than in the 2016 survey. The largest declines were noted in the PRC and the Republic of Korea. In the PRC, liquidity conditions tightened largely due to deleveraging, while in the Republic of Korea, this was mostly due to increased investor caution amid rising geopolitical risks.

Characteristics of Individual Government Bond Markets

People's Republic of China

Respondents in the PRC to the *AsianBondsOnline* liquidity survey noted an overall decline in liquidity for 2017 versus the prior year. Survey participants noted that the overall decline in liquidity was largely due to the government's efforts to deleverage, which resulted in higher interest rates.

The PRC has largely been engaged in a deleveraging scheme in order to reduce financial risk in its asset markets. Much of the risk stems from rapid credit growth and overall debt levels in the PRC. As part of its efforts to reduce risk and curb debt levels, the People's Bank of China has pushed interest rates up in the interbank market, raising financing costs. Among the measures that the central bank has engaged in is raising interest rates in its open market operations such as its lending facilities and reverse repurchase agreements. As a result, the rise in financing costs and higher interest rates on bonds led to a reduction in bond market liquidity.

Despite the PRC's efforts, international rating agencies remain concerned over rising debt levels. In May 2017, Moody's downgraded the PRC's long-term sovereign rating to A1 from Aa3. In September 2017, S&P Global downgraded the PRC's credit rating to A+ from AA-. Only Fitch Ratings, in July 2017, affirmed the PRC's credit rating at A+. Both S&P Global and Moody's cited rising debt levels as a key reason for the downgrade.

While debt leverage remains a concern, participants noted that the international rating agencies downgrading of the PRC has had little impact on the local bond market. Survey participants mentioned that it could impact liquidity coming from foreign investors in cases where international credit ratings may guide their investment mandates, but the impact is likely to be limited given that foreign investor participation in the local bond market is still small (albeit rising in response to the PRC's efforts to open up its bond market).

The PRC has taken other steps that have also reduced liquidity. It has sought to reign in financial risk brought about by a rise in wealth management products. In July 2017, some banks were reportedly told by the China Banking Regulatory Commission to reduce the rates of return being offered on their wealth management products.

More recently, participants indicated that interbank liquidity is being affected by the PRC authorities imposing additional restrictions on money market funds, including investment limits from a single issuer. This reduces interbank liquidity as a large portion of money market funds invest in bank deposits.

The deleveraging activities of the PRC caused trading activity to decline in 2017 and increased trading costs for some bonds (**Table 6**). On-the-run bid–ask spreads were largely unchanged for policy bank bonds and Treasury bonds, but the spread for Treasury bills rose slightly to 1.8 bps in 2017 from 1.3 bps in 2016.

Table 6: Local Currency Government Bond Survey Results—People's Republic of China

	Treasury Bills	Treasury Bonds	Policy Bank Bonds
On-the-Run			
Bid–Ask Spread (bps)	1.8	1.0	1.1
Average Trading Size (CNY million)	58.3	51.7	51.7
Off-the-Run			
Bid–Ask Spread (bps)	4.3	3.9	4.3
Average Trading Size (CNY million)	51.7	45.0	45.0

bps = basis points, CNY = Chinese renminbi.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

Off-the-run bid–ask spreads were much more affected, with the bid–ask spread of off-the-run Treasury bills rising to 4.3 bps from 1.9 bps in the same period. The off-the-run Treasury bonds bid–ask spread rose to 3.9 bps in 2017 from 2.0 bps in 2016, while the policy bank bonds bid–ask spread rose to 4.3 bps from 2.3 bps.

Liquidity for policy bank bonds is quite good, being comparable to Treasury bills and bonds, which are usually the most liquid bond instruments for most markets. In some cases, policy bank bonds have better liquidity owing to having a much larger supply pool.

The decline in government bond liquidity also led to reduced trading sizes in 2017. The average trading size of on-the-run Treasury bills fell to CNY58.3 million in 2017 from CNY208 million in 2016, reflecting the large increase in bid–ask spreads for Treasury bills this year.

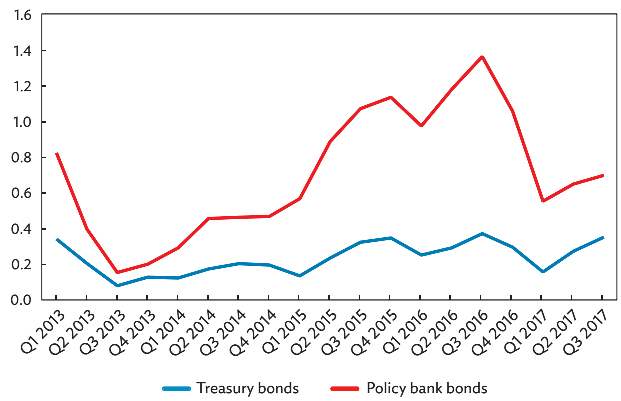
The average trading size for Treasury bonds fell to CNY51.7 million in 2017 from CNY73.8 million in 2016, while the average trading size for policy bank bonds fell to CNY51.7 million from CNY108.1 billion.

The liquidity of local government bonds still tends to be poor despite their rapid growth in issuance. Participants said that trading activity in local government bonds tends to be limited with most investors tending to buy and hold.

Issuance of local government bonds is also expected to slow with the end of the local government debt swap program in 2018.

The turnover ratios for both Treasury bonds and policy bank bonds for the first 2 quarters of 2017 were lower than the ratios in 2016 as trading volume declined (**Figure 15**). There was some recovery, however, in Q3 2017 when trading activity improved.

Figure 15: Turnover Ratios for the Spot Market in the People's Republic of China



Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter.
Source: *ChinaBond*.

Hong Kong, China

Participants in Hong Kong, China's government bond market noted that liquidity conditions have been relatively stable this year. As Hong Kong, China's government bond market is relatively well developed, liquidity conditions remained generally good and without significant changes.

However, participants noted that while the market has been stable, there has been an increase in activity in the government bond market due to portfolio reallocations among provident funds following the new regulations requiring the establishment of a default investment strategy.

In addition, ample liquidity has been in place since last year, resulting in strong demand for government bonds and an increase in their trading despite a rise in interest rates after the Federal Reserve began the process of policy normalization.

Ample liquidity has led the Hong Kong Monetary Authority to issue additional Exchange Fund Bills (EFB) to meet the demand for bonds.

Nevertheless, there has been an overall rise in bid–ask spreads for Hong Kong, China's government bonds (**Table 7**). The bid–ask spread for on-the-run EFBs rose to 5.0 bps in 2017 from 3.0 bps in 2016. The average trading size also declined to HKD266.7 million in 2017 from HKD437.5 million in the previous year.

Table 7: Local Currency Government Bond Survey Results—Hong Kong, China

	Exchange Fund Bills	Exchange Fund Notes	HKSAR Bonds
On-the-Run			
Bid–Ask Spread (bps)	5.0	7.8	9.0
Average Trading Size (HKD million)	266.7	108.3	62.5
Off-the-Run			
Bid–Ask Spread (bps)	5.5	9.0	9.0
Average Trading Size (HKD million)	233.3	75.0	62.5

bps = basis points, HKD = Hong Kong dollar, HKSAR = Hong Kong Special Administrative Region.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

There were similar movements in off-the-run EFBs, with the bid–ask spread rising to 5.5 bps in 2017 from 3.3 bps in 2016. The average trading size fell to HKD233.3 billion from HKD437.5 billion in the same period.

Exchange Fund Notes (EFNs) also experienced a rise in bid–ask spreads with the on-the-run bid–ask spread rising to 7.8 bps in 2017 from 6.0 bps in 2016 and the off-the-run bid–ask spread rising to 9.0 bps from 6.5 bps in the same period.

In contrast, the average trading size of on-the-run EFNs rose to HKD108.3 million from HKD75 million while off-the-run EFN trading volume remained unchanged. Market participants indicated there was still good demand for EFNs but liquidity had been affected by the lack of issuance EFNs with tenors of more than 2 years as the government sought to instead increase the liquidity of Hong Kong Special Administrative Region (HKSAR) bonds.

HKSAR bonds saw a slight rise in bid–ask spreads between 2016 and 2017, with the on-the-run bid–ask spread rising to 9.0 bps in 2017 from 8.3 bps in the prior year while the off-the-run bid–ask spread fell slightly to 9.0 bps from 10.0 bps. There was also an increase in the average trading size in 2017 to HKD62.5 million for both on-the-run and off-the run issues from HKD48.3 million in the previous year. Market participants indicated that HKSAR bonds remained illiquid versus the other two government bond categories due to a lack of interest in the market. Survey respondents, however, noted there was some interest in HKSAR bonds but this was due to the absence of issuance of EFNs with maturities of over 2 years. HKSAR bonds suffer a number of disadvantages compared to EFNs such as the fact that market participants cannot short HKSAR bonds. HKSAR bonds are also not issued as frequently as EFBs.

Indonesia

Liquidity conditions in Indonesia's LCY bond market further improved in 2017, sustained by continued foreign fund flows. Market optimism buoyed foreign investor interest as stable macroeconomic fundamentals contributed to their demand for Indonesian LCY government bonds. In May, S&P Global upgraded Indonesia's sovereign rating to investment grade, further fueling interest in its LCY bond market.

Most survey respondents noted that while the sovereign rating upgrade by S&P Global had already been priced in by the market, it led to additional interest from new offshore investors. Some survey participants noted the influx of investors from Japan and the Republic of Korea, who typically follow a conservative strategy in their investment decisions by only purchasing bonds rated as investment grade. Investors from both economies reportedly tapped the Indonesian bond market following the upgrade from S&P Global.

At the end of September, the foreign holdings share in Indonesia's LCY government bond market had risen to 40.0% from 39.2% in the same period a year earlier and from 39.5% at the end of June. While a high share of foreign investor holdings may pose the risk of capital flight, market participants believed that the government has set up sufficient measures to support the bond market in times of a sell-off by foreign investors.

Liquidity conditions were further enhanced by actions taken in the domestic market. The regulation on the minimum investment requirement for government bonds for nonbank financial institutions, such as insurance companies and pension funds, contributed to more active trading. In 2017, the minimum investment requirement for government bonds for these institutions was raised from 20% to 30% of their assets.

Banking institutions also increased their holdings of government bonds as they sought higher-yield investments in which to park their excess funds and generate more trading gains. Bank Indonesia reduced its policy rate once each in August and September, cutting the 7-day reverse repurchase (repo) rate to 4.25%.

Reflective of the overall improvement in liquidity was the narrower bid–ask spread for Treasury bonds quoted by market participants in this year's survey compared with 2016 (**Table 8**). The average bid–ask spread for on-the-run Treasury bonds dropped to 3.3 bps from 5.2 bps, while it fell slightly for off-the-run Treasury bonds. For Treasury bills, however, the average bid–ask spread inched up slightly to 18.3 bps from 15.0 bps. While there were only a few market participants who provided quotes for off-the-run bid–ask spreads for Treasury bills, most mentioned that, given their short tenors, there was no distinction for on-the-run and off-the-run spreads when it comes to Treasury bills.

Survey results indicated an increase in 2017 in the size of an average trade for both Treasury bills and Treasury bonds. The single-trade transaction size for on-the-run and off-the-run Treasury bills climbed to IDR78.6 billion and IDR35.0 billion, respectively, partly due to increased issuance of Treasury bills in 2017. For Treasury bonds, the on-the-run single-trade transaction size rose to IDR25.0 billion in 2017, while it was unchanged at IDR17.0 billion for off-the-run bonds.

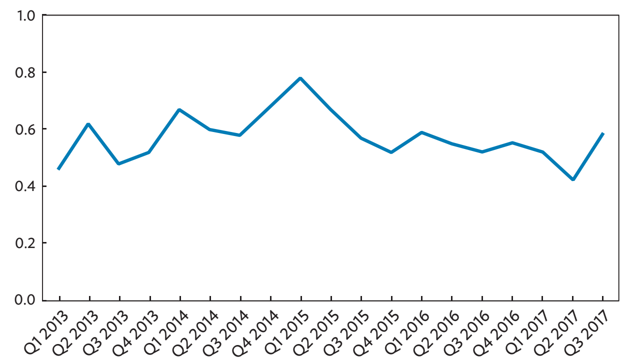
Table 8: Local Currency Government Bond Survey Results—Indonesia

	Treasury Bills	Treasury Bonds
On-the-Run		
Bid–Ask Spread (bps)	18.3	3.3
Average Trading Size (IDR billion)	78.6	25.0
Off-the-Run		
Bid–Ask Spread (bps)	15.0	8.6
Average Trading Size (IDR billion)	35.0	17.0

bps = basis points, IDR = Indonesian rupiah.
Notes: 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 emerging East Asian markets. Bid–ask spreads for government bonds are most often expressed in terms of "cents" in the Indonesian market. The Indonesian market quotes bid–ask spread for Treasury bills in terms of yields or basis points.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

A marked improvement was also seen in trading volume and the turnover ratio in Q3 2017 (**Figure 16**). The quarterly bond trading volume for Treasury instruments climbed to a record-high IDR1,176 trillion in Q3 2017. The bond turnover ratio rose to 0.59 in Q3 2017 from 0.52 in Q3 2016 and from 0.42 in the second quarter (Q2) of 2017.

Figure 16: Quarterly Government Bond Turnover Ratio in Indonesia



Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter.
Sources: Indonesia Stock Exchange and *AsianBondsOnline*.

Market participants remain positive in their outlook for Indonesia's bond market, citing relatively slower inflation that allowed Bank Indonesia to ease its monetary policy. While most survey participants noted that there is still room for another rate cut, they discounted a further reduction this year as the policy rate is already deemed low relative to inflation. Most survey participants are expecting a possible policy rate adjustment in the first quarter of 2018.

Indonesia's bond market is very sensitive to developments in the global market given that foreign investors account for the largest share of government bond holdings among all regional markets. However, market participants noted that ongoing monetary tightening measures by the Federal Reserve had been mostly priced in and would have limited additional impact on the bond market. Market participants, though, cautioned that problems could arise if the pace of tightening were conducted more quickly than expected.

To improve liquidity in the bond market, market participants cited the need to further develop the repo market. While the Global Master Repurchase Agreement was finalized last year, most participants noted that further enhancements are needed to encourage its use. Some participants noted the need for further fine-tuning of the standard terms and agreement.

Republic of Korea

In the Republic of Korea, survey respondents noted liquidity conditions in the LCY government bond market were unchanged from the previous year. Uncertainties arising from both domestic and foreign macroeconomic policies have resulted in cautious behavior among market participants. The average bid–ask spreads for on-the-run and off-the-run Korea Treasury Bonds (KTBs) were unchanged in 2017 at 0.5 bp and 0.9 bp, respectively (**Table 9**). The average trading size for on-the-run KTBs was lower in 2017 at KRW8.1 billion versus KRW10 billion, and was slightly higher for off-the-run KTBs at KRW10.4 billion versus KRW10 billion. The bid–ask spreads and average trading sizes for on-the run and off-the-run Monetary Stabilization Bonds were almost at par with the results from last year's survey.

Table 9: Local Currency Government Bond Survey Results—Republic of Korea

	Treasury Bonds	Central Bank Bonds
On-the-Run		
Bid–Ask Spread (bps)	0.5	0.4
Average Trading Size (KRW billion)	8.1	9.5
Off-the-Run		
Bid–Ask Spread (bps)	0.9	0.7
Average Trading Size (KRW billion)	10.4	9.6

bps = basis points, KRW = Korean won.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

Monetary policy developments in advanced economies have contributed to uncertainties in the market. Market participants have anticipated the rate hikes by the Federal Reserve and taken into account the announcement of its balance sheet reduction program. However, the timing and pace of monetary policy normalization will continue to be data-dependent. The announcement by the European Central Bank of the start of the tapering of its quantitative easing program also added to volatility in the market. For the Bank of Korea, these developments have added to pressures to implement a tighter monetary stance considering the narrowing interest rate differentials with advanced-economy markets.

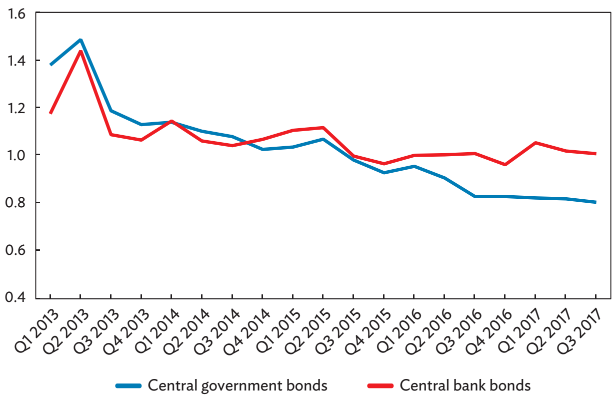
On the domestic front, uncertainties arose as the market anticipated increased spending by the new administration. Some survey participants noted the possibility of an increased bond supply to fund the 5-year economic plan, as well as additional debt issuance by government agencies. Meanwhile, others stated that the increase in the bond supply will be minimal as funding will be sourced from a tax surplus.

Expectations of a rate hike by the Bank of Korea in the first half of 2018 has increased among market participants. A rate hike is also expected to help curb the continued rise in household debt as some survey participants noted that despite the announcement of new regulatory measures to address this issue, real estate prices have not stabilized. As to the possibility of a further rate hike, survey participants noted that the slow recovery of domestic demand will be a major factor in the Bank of Korea's decision.

There has been a rise in market volatility in recent months, particularly in August and September as a result of heightened geopolitical tensions with the Democratic People's Republic of Korea. This year saw high levels of net foreign inflows into the LCY government bond market through July. The month of August saw net foreign outflow of KRW2.2 trillion, and an even higher net outflow of KRW3.7 trillion in September. The outflows were partly due to increased geopolitical tensions and the redemption of maturing bonds. Moreover, large foreign funds have been reducing their holdings of the Republic of Korea's government bonds. The most noteworthy were the massive sell-offs in July and in the last week of September.

The continued decline in the turnover ratio of central governments bonds reflected less trading activity in the market (**Figure 17**). The trading volume levels for the first 9 months of 2017 were lower compared to 2016, while the average amount of bonds outstanding continued to increase. The turnover ratio of central bank bonds remained steady in 2017 as the average size of outstanding central bank bonds declined, while trading volumes remained stable.

Figure 17: Quarterly Government Bond Turnover Ratios in the Republic of Korea



Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter.
Note: For the Republic of Korea, central government bonds include Treasury bonds and National Housing bonds. Data for Q3 2017 are based on *AsianBondsOnline* estimates.
Source: The Bank of Korea.

Upward pressure on yields and volatility in the short-term is expected to persist given monetary policy normalization in the US and eurozone. Market participants also continue to anticipate rate hike signals from the Bank of Korea and the effects of the newly announced regulatory measures related to household debt. Moreover, geopolitical concerns remain and are constantly being monitored, especially by foreign investors. However, some survey participants noted the possibility of a reprieve at the end of the year as the market is awash with liquidity and market players may have to take a position.

Malaysia

Malaysia's LCY bond market liquidity in 2017 was perceived by market participants to be about the same or slightly less liquid compared to last year. Liquidity in Malaysia was affected by several factors including the continued monetary policy tightening in the US and hawkish signals in advanced economies, inflationary pressures in emerging East Asia, volatility of the Malaysian ringgit, Bank Negara Malaysia's (BNM) reinforcement of existing rules that prohibit trading of the Malaysian ringgit in the non-deliverable forward market, and measures introduced by the BNM to improve financial markets.

The BNM's crackdown on Malaysian ringgit trading in the offshore non-deliverable forward market had a significant impact on Malaysia's bond market as it triggered the outflow of foreign funds. Bonds held by foreign entities dropped from a share of about 36% in November 2016 to a low of about 26% in March 2017, drawing some liquidity out of Malaysia's bond market. Interest rate hikes in the US have also influenced investors to redirect their funds there in search of higher yields. However, measures introduced by the BNM to deepen the financial market, such as new foreign exchange measures that allow onshore hedging of US dollar and Chinese renminbi transactions against the ringgit without the provision of underlying documents may have enhanced liquidity and capped outflows from the bond market.

Average on-the-run bid–ask spreads for Malaysian Government Securities (MGS) and Government Investment Issues (GII) barely changed in 2017 with the average bid–ask spread for MGS at 1.9 bps, compared with 2.1 bps in 2016, and the average bid–ask spread for GII at 2.2 bps, the same as a year earlier (**Table 10**). Similarly, average on the-run trading sizes for MGS and GII remained almost unchanged from 2016. The trading of BNM notes and Treasury bills were less active due to significantly fewer issuances.

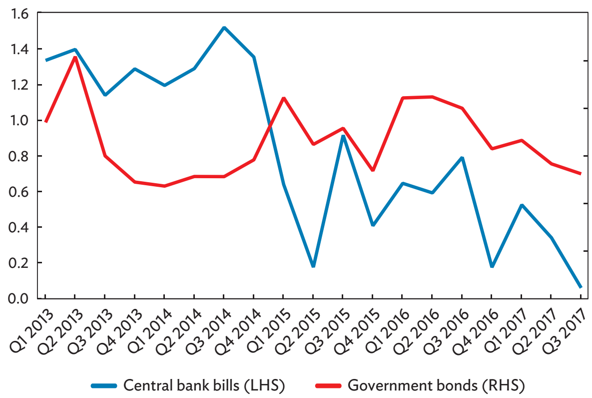
Table 10: Local Currency Government Bond Survey Results—Malaysia

	MGS	GII	BNM Bills	Treasury Bills
On-the-Run				
Bid–Ask Spread (bps)	1.9	2.2	2.0	3.0
Average Trading Size (MYR million)	19.4	17.0	75.0	66.7
Off-the-Run				
Bid–Ask Spread (bps)	4.8	5.9	3.3	3.3
Average Trading Size (MYR million)	15.1	18.2	62.5	56.0

BNM = Bank Negara Malaysia, bps = basis points, GII = Government Investment Issues, MGS = Malaysian Government Securities, MYR= Malaysian ringgit.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

A slightly less liquid bond market was also evident in the quarterly and annual declines in government bond turnover ratios (**Figure 18**). The Malaysian LCY government bond market's turnover ratio declined to 0.26 in Q3 2017 from 0.28 in Q2 2017 and from 0.40 in Q3 2016. The hawkish tone of the Federal Reserve and other central banks in developed economies over their stimulus withdrawal plans generated uncertainty among investors, affecting trading activities in Malaysia's bond market. Lower trading volumes for LCY government

Figure 18: Quarterly Government Bond Turnover Ratios in Malaysia



LHS = left-hand side, RHS = right-hand side. Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter.
Source: Bank Negara Malaysia.

bonds were seen in recent quarters even as the amount of government bonds outstanding continued to increase. On the other hand, central bank bill issuance continued to moderate, while trading volumes dropped even more, resulting in the turnover ratio declining sharply in Q3 2017 to 0.06 from 0.79 in Q3 2016.

Survey participants see the balance sheet reduction of the Federal Reserve, which was slated to start in October, as adversely affecting bond market liquidity in emerging markets, including Malaysia's, by dampening the pace of foreign fund inflows as investors redirect their funds to the US. However, the impact is expected to be limited because local investors now play a larger role in supporting the LCY bond market. The volatility of inflows will be moderated as mainly sticky investors, such as central banks and pension funds, have remained in the market following the outflows earlier in the year.

Philippines

Liquidity conditions in the Philippines' government bond market did not appreciably improve over the last year as perceived by most respondents in this year's survey. However, based on the survey results, there was some improvement in average bid–ask spreads and trading sizes between 2016 and 2017.

The average bid–ask spread for on-the-run Treasury bonds dipped slightly to 3.7 bps in 2017 from 4.6 bps in 2016, while for Treasury bills the average spread edged higher to 5.3 bps from 4.8 bps. The off-the-run average bid–ask spread for Treasury bonds fell to 12.0 bps from 12.5 bps in 2016, while for Treasury bills it climbed to 15.6 bps from 12.5 bps.

Despite the perception of steady liquidity conditions in the bond market, the average on-the-run trading size for Treasury bills (PHP85.0 million) was higher in 2017 than in 2016, which more than tripled (**Table 11**). The observed increase might have been helped by an expanded supply of government securities as the Bureau of the Treasury increased its offerings of Treasury bills and most auctions were successful. On the other hand, the average on-the-run trading volume for Treasury bonds (PHP85.7 million) was lower in 2017 than in 2016.

Table 11: Local Currency Government Bond Survey Results—Philippines

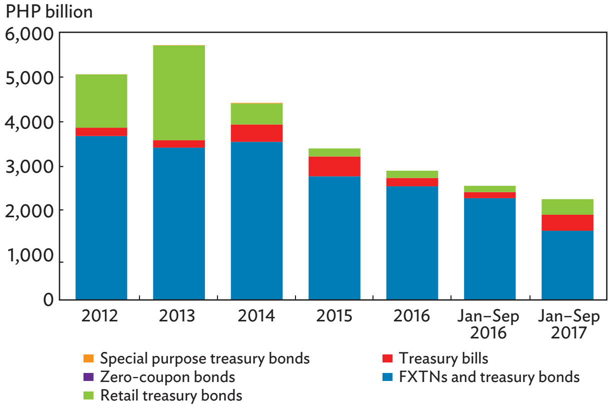
	Treasury Bonds	Treasury Bills
On-the-Run		
Bid–Ask Spread (bps)	3.7	5.3
Average Trading Size (PHP million)	85.7	85.0
Off-the-Run		
Bid–Ask Spread (bps)	12.0	15.6
Average Trading Size (PHP million)	43.3	34.0

bps = basis points, PHP = Philippine peso.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

Data from the Philippine Dealing and Exchange Corporation showed that trading volumes for government securities continued to decline since peaking in 2013 (**Figure 19**). In January–September, the total volume of government papers traded dropped 11.8% year-on-year (y-o-y) to PHP2,250 billion from the same period in 2016. Even with the trading volumes of Treasury bills and Retail Treasury bonds more than doubling on a y-o-y basis, the 32.0% y-o-y decline in Treasury bond trading volume pulled down the total volume of government securities traded because of Treasury bonds' large relative share.

Survey participants noted several regulatory policies and market reforms that can influence the level of liquidity in the bond market including the Bangko Sentral ng Pilipinas' (BSP) launch of the repo and reverse repo market, and the Bureau of the Treasury's market-maker program and the enhanced Government Securities

Figure 19: Philippine Dealing and Exchange Corporation Trading Volume Trends—Government Securities in the Philippines



FXTNs = Fixed-Rate Treasury Notes, PDEx = Philippine Dealing and Exchange Corporation, PHP = Philippine peso.
Note: PDEx reports one side of the trade only.
Source: Philippine Dealing and Exchange Corporation.

Eligible Dealers program. Both will help deepen the local debt market by improving the benchmark, which is critical in pricing capital market instruments, translating to better performance of the debt market. The BSP's streamlining of requirements for the issuance of bonds and commercial paper by banks and quasi-banks will provide flexibility in tapping the capital market as an alternative funding source. In addition, the BSP's discontinuance of trust entities' access to BSP deposit facilities may redirect some trust funds to the local bond market.

The Federal Reserve's balance sheet reduction will likely have limited impact on the Philippine bond market as participants have long anticipated the unwinding process. Any sell-off would possibly be absorbed by the local bond market's ample liquidity, although demand for LCY bonds will not be high due to investor caution.

Singapore

Based on this year's survey, liquidity conditions in Singapore's LCY government bond market were noted to have slightly improved. Despite the Federal Reserve's hawkish tone and the scheduled beginning of its asset pull-back in October, market participants maintained confidence in the Singapore bond market, noting that the expected impacts would be mild. The reason for this is mainly the clear communication from the Federal Reserve in laying down its plan of a gradual rate hike, plus the perception of Singapore as a safe haven with a strong currency, which feeds into the demand for Singapore bonds.

Survey respondents identified external events that could affect Singapore's bond market such as geopolitical risks relating to the Democratic People's Republic of Korea, the passage of a tax reform bill in the US, and US fiscal policy. Since yield movements for Singapore Government Securities (SGS) bonds largely track US Treasury yields, SGS yields are expected to rise slightly.

Among Singapore's government bond market securities, SGS bonds with maturities of 2 years, 5 years, and 10 years were perceived to be the most liquid. However, survey participants noted that all tenors of SGS bonds were very liquid across the yield curve. The average on-the-run bid–ask spread for SGS bills and bonds stood at 2.8 bps and 3.0 bps, respectively, while Monetary Authority of Singapore (MAS) bills had a higher average bid–ask spread of 4.4 bps (**Table 12**). A possible reason for the higher bid-ask spread for MAS bills is that not all market participants actively trade them.

Table 12: Local Currency Government Bond Survey Results—Singapore

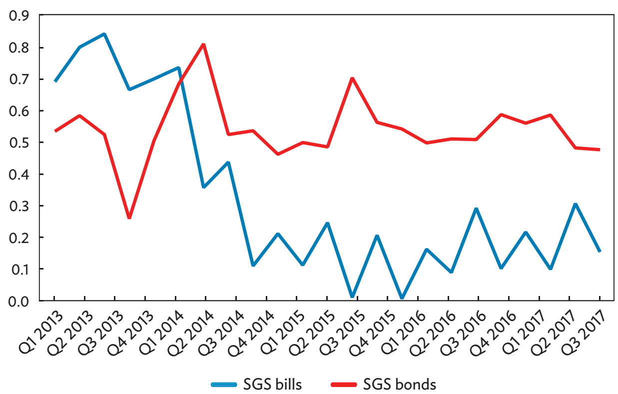
	SGS Bonds	SGS Bills	MAS Bills
On-the-Run			
Bid–Ask Spread (bps)	3.0	2.8	4.4
Average Trading Size (SGD million)	10.0	17.5	17.5
Off-the-Run			
Bid–Ask Spread (bps)	3.5	3.0	5.3
Average Trading Size (PHP million)	6.3	17.5	17.5

bps = basis points, MAS = Monetary Authority of Singapore, SGD = Singapore dollar, SGS = Singapore Government Securities.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

Off-the-run bid–ask spreads for all government debt securities compared well with their on-the-run counterparts and were higher by no more than 1 bp. The average bid–ask spread for SGS bonds was unchanged in 2017, but the average trading size increased to SGD10.0 million from only SGD7.5 million in last year's survey.

The turnover ratio for SGS bonds slipped to 0.48 in Q3 2017 from 0.59 in Q3 2016 (**Figure 20**). This was

Figure 20: Quarterly Government Bond Turnover Ratios in Singapore



SGS = Singapore Government Securities, Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter.
Source: Monetary Authority of Singapore, Singapore Government Securities.

primarily due to a decline in trading activity in SGS bonds with trading volume of SGS bonds dropping to SGD49.7 billion in Q3 2017 from SGD58.2 billion in the same period in 2016. Meanwhile, the average outstanding bonds rose to SGD104.3 billion from SGD99.3 billion during the period in review. The turnover ratio for SGS bills continued to be erratic in 2017 due to the small size of the market and limited trading activity.

With regard to the medium-term outlook for MAS monetary policy, market participants noted that it will more likely be driven by the domestic economic situation and inflation outlook. They also indicated that the MAS may not extend its accommodative monetary policy.

Thailand

Survey respondents noted that liquidity in Thailand's government bond market has improved in 2017, driven largely by increased interest from offshore investors. Participants indicated that Government bonds and Bank of Thailand (BOT) bonds were the most active among government securities. Survey results indicated narrower bid–ask spreads in 2017 for both on-the-run and off-the-run Government bonds and central bank debt securities. Government bonds, BOT bonds, and BOT bills each had an average on-the-run bid-ask spread of 1.8 bps, compared with last year's spreads of 2.3 bps, 2.6 bps, and 1.9 bps, respectively. Off-the-run bid-ask spreads and average trading sizes also improved

Table 13: Local Currency Government Bond Survey Results—Thailand

	Government Bonds	Treasury Bills	BOT Bonds	BOT Bills
On-the-Run				
Bid–Ask Spread (bps)	1.8	2.3	1.8	1.8
Average Trading Size (THB million)	141.7	283.3	241.7	400.0
Off-the-Run				
Bid–Ask Spread (bps)	5.3	3.0	2.5	2.5
Average Trading Size (THB million)	61.7	258.3	225.0	350.0

BOT = Bank of Thailand, bps = basis points, THB = Thai baht.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

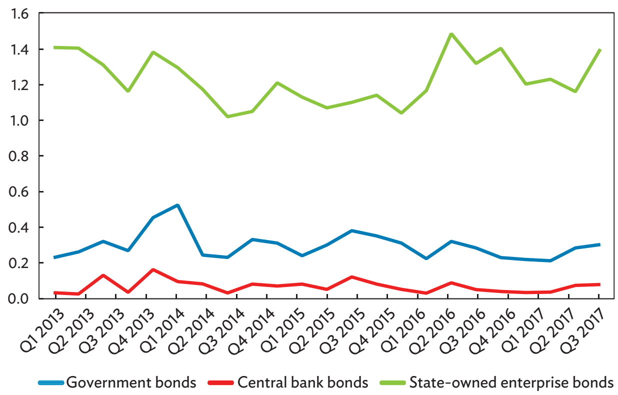
across all debt securities, excluding the average trading size of Government bonds which fell in 2017. Meanwhile, the average trading size was still higher for short-term securities versus those with long-term tenors (**Table 13**).

Based on data from the BOT, nonresident holdings of Thai LCY government bonds have gradually risen from a 14.8% share of the total market at the end of September 2016 to 16.2% at the end of September this year. Survey respondents noted the factors making Thailand's bond market appealing to foreign investors include the strong Thai baht and low inflation resulting in high real interest rates.

Regarding the Federal Reserve's winding down of its balance sheet and signaling of a possible rate hike before year-end, survey respondents expect only a minimal impact on the Thai bond market given the strong market fundamentals. Survey respondents also expect the BOT to maintain its current monetary policy stance. Survey participants also mentioned that compared to regional peers, the share of foreign holdings of LCY government bonds in Thailand is still relatively low, making it less susceptible to volatility resulting from capital flight.

Bond liquidity, as measured by turnover ratios, improved in Q3 2017 compared with the same period in 2016. The turnover ratios for BOT bonds rose to 1.40, for government bonds to 0.31, and for state-owned enterprise bonds to 0.11 (**Figure 21**). Data from the Thai Bond Market Association also showed total trading volume rising to THB5.6 trillion in Q3 2017 from THB5.3 trillion in Q3 2016.

Figure 21: Quarterly Government Bond Turnover Ratios in Thailand



Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter
Sources: Bank of Thailand and Thai Bond Market Association.

The Thai baht has continued to appreciate in 2017. In an effort to arrest unwarranted speculation on the Thai baht, the BOT imposed measures to encourage capital outflows at the same time as cutting down on short-term bill issuances. However, survey participants remarked that the effort had limited effect since the strength of the Thai baht is also drawn from the trade and current account surplus, as well as sufficient foreign reserves.

Viet Nam

Viet Nam's LCY government bond market experienced more liquidity in 2017 than in 2016. Hefty issuance of Treasury bonds in the first half of the year helped boost liquidity conditions. Stable macroeconomic fundamentals also supported the market. Inflation trended downward in the first half of the year, which provided room for the State Bank of Vietnam to cut policy rates in July.

Treasury bonds remained the most liquid government bond instrument in Viet Nam. The average on-the-run bid–ask spread narrowed to 5.0 bps in 2017 from 7.2 bps a year earlier (**Table 14**). On the other hand, on-the-run bid–ask spreads for state-owned enterprise bonds and State Bank of Vietnam bills widened to 15.0 bps and 10.0 bps, respectively. Off-the run bid–ask spreads for all government bond instruments widened in this year's survey. In terms of market transaction size, survey participants indicated a lower average transaction size of VND62.5 billion for Treasury bonds this year. However,

Table 14: Local Currency Government Bond Survey Results—Viet Nam

	Treasury Bonds	State-Owned Enterprise Bond	State Bank of Vietnam Bills
On-the-Run			
Bid–Ask Spread (bps)	5.0	15.0	10.0
Average Trading Size (VND billion)	62.5	50.0	50.0
Off-the-Run			
Bid–Ask Spread (bps)	10.0	32.5	20.0
Average Trading Size (VND billion)	50.0	50.0	50.0

bps = basis points, VND = Vietnamese dong.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

some participants noted there were times the transaction size reached as high as VND100 billion.

Market participants noted that the normalization of monetary policy in the US will have limited impact on Viet Nam's bond market, given that its bonds are held largely by domestic investors. However, an increase in the federal funds rate in the US is seen as a potential risk impacting long-term interest rates. Nonetheless, given that inflation remains manageable and economic growth is robust, survey participants expect Viet Nam's policy rate to remain flat for the rest of the year.

Qualitative Indicators for Government Bond Markets

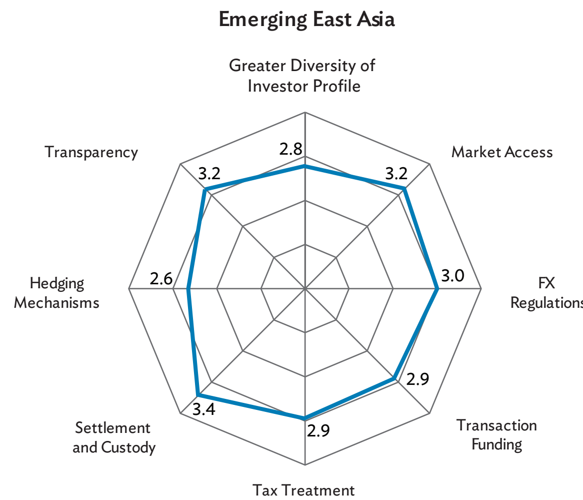
In addition to quantitative indicators of liquidity such as bid–ask spreads, the 2017 *AsianBondsOnline* liquidity survey also examined qualitative factors impacting liquidity in emerging East Asian bond markets. The survey solicited ratings from market participants about their perceptions of the current state of a number of structural factors that are known to affect bond market liquidity. A description of these structural issues is presented below.

1. **Greater Diversity of Investor Profile:** the need to widen the investor base for LCY bonds
2. **Market Access:** the degree of ease or difficulty for investors to enter the LCY bond market, taking into account investor registration and investment quotas
3. **Foreign Exchange Regulations:** the extent of liberal or restrictive foreign exchange (FX), capital investment, and repatriation policies

4. **Transaction Funding:** the need for funding availability through active and developed money and repo markets
5. **Tax Treatment:** the importance of reducing withholding taxes on LCY bonds
6. **Settlement and Custody:** the significance of straight-through clearing processes, timely bond trade settlements, and a global custodian or accredited custodian(s)
7. **Hedging Mechanisms:** the need to have an active and efficient derivatives market
8. **Transparency:** the importance of gaining accessibility to daily information on bond market activity, including bond prices, as well as of bonds having credit ratings

Survey participants were asked to rate their respective markets on a scale of 1–4 for each structural issue. A rating of 4 indicates that the respective bond market is considered significantly advanced or developed with regard to a particular issue. One caveat is that the ratings are based on participant perceptions and may not necessarily reflect the actual development state of the bond market.

Figure 22: Regional Averages—Local Currency Government Bond Market Structural Issues



FX = foreign exchange.
Note: Emerging East Asia comprises the People's Republic of China; Hong Kong, China; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

The survey results show that, on a regional average basis, the least developed structural factor for government bond markets in emerging East Asia is Hedging Mechanisms, which received a score of 2.6 (**Figure 22**). In a number of emerging East Asian government bond markets, derivative instruments are still being developed.

The structural factor that received the next lowest score on a regional basis was Greater Diversity of Investor Profile. The diversity of investors tends to lag in developing economies, with bond markets remaining dominated by a few players. In the case of developing bond markets, investors tend to be highly concentrated among banks and other financial institutions.

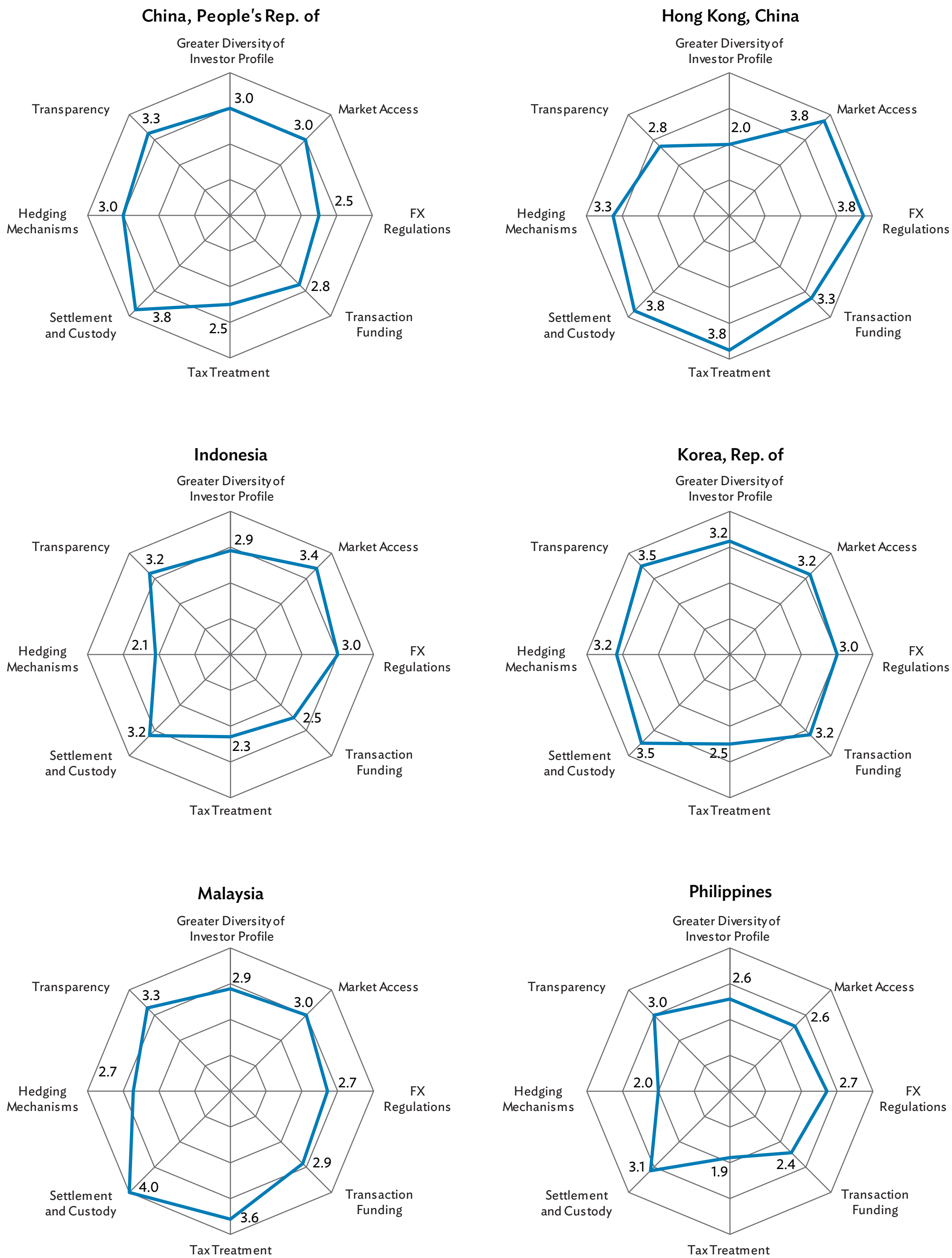
Emerging East Asia's government bond markets garnered an average score of 3.4 for Settlement and Custody, making it the highest-rated structural indicator. The sole exception was Viet Nam, which rated it at 2.5. This indicates that most government bond markets in the region have made strides in the development of the necessary infrastructure and technology, suggesting that efforts to further improve the liquidity of government bond markets lie elsewhere.

The next highest-rated structural factors were Market Access and Transparency, which both received an average score of 3.2. FX regulations were next with a score of 3.0, followed by Transaction Funding and Tax Treatment with a score of 2.9 each.

For Greater Diversity of Investors, survey participants ranked Hong Kong, China; the Philippines; and Viet Nam individually quite low: Hong Kong, China received a score of 2.0; Viet Nam received a score of 2.5; and the Philippines received a score of 2.6 (**Figure 23**). All other markets received a score of 2.9 or higher.

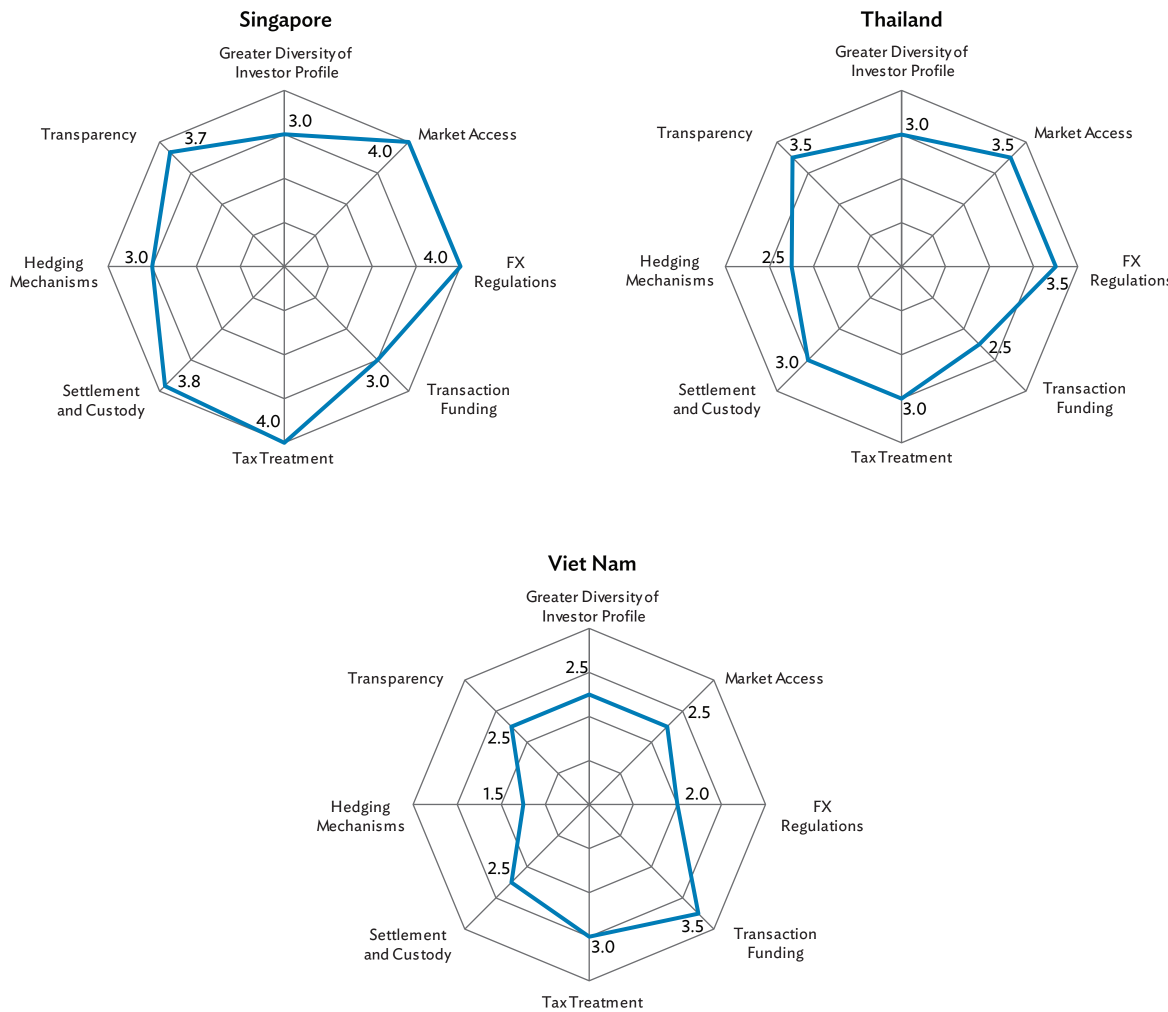
In the case of Hong Kong, China, despite it being generally considered to have a well-developed and -functioning market, government bond investment tends to be concentrated in a few institutions as some institutions simply invest in the government bond market to meet regulatory requirements. In the cases of the Philippines and Viet Nam, banks and other similar financial institutions tend to be the dominant holders. For example, in the Philippines, banks and investment houses hold roughly 40% of outstanding government bonds.

Figure 23: Structural Issues for Individual Local Currency Government Bond Markets



continued on next page

Figure 23 *continued*



FX = foreign exchange.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

For Market Access, the highest rating was for Singapore at 4.0, followed by Hong Kong, China at 3.8. Both government bond markets also rated similarly for the FX Regulations structural indicator as both are considered highly developed and liberalized. Hong Kong, China and Singapore are also major players in global financial markets, with both markets advertising themselves as global financial centers.

Table 15 summarizes the regulations governing cross-border portfolio investment in emerging East Asian markets.

Economies with robust foreign investment in their local government bond market include Indonesia, the Republic of Korea, Malaysia, and Thailand. With the exception of Malaysia, these markets have high scores for Greater Diversity of Investors, Market Access, and FX Regulations, which suggest these are important factors for promoting foreign investment. In the case of Malaysia, despite having a well-developed bond market, it received a score of 2.7 for FX Regulations due to the reinforcement of regulations to limit speculation on the Malaysian ringgit.

Table 15: Cross-Border Portfolio Investment Regulation in Select Emerging East Asian Markets

Market	Capital Inflow			Capital Outflow	
	Money Market Instruments	Bond Market Instruments	Equity Instruments	Resident Investors	Nonresident Investors
China, People's Republic of	Qualified Foreign Institutional Investors (QFII) may purchase money market funds, subject to a lockup period.	QFIIs are allowed to invest in exchange-traded subject to quotas but interbank-traded bonds purchases have no limits. Renminbi Qualified Foreign Institutional Investors (RQFII) are allowed to invest in exchange-traded bonds subject to quotas and in interbank-traded bonds without limits. Financial institutions, such as commercial banks, insurance companies, securities companies, fund management companies, other asset management institutions and People's Bank of China-approved institutions such as pension funds, charitable funds, endowment funds, and other medium- and long-term institutional investors may invest in the interbank bond market subject without limits.	QFIIs are allowed to invest in A-shares subject to quotas. No single QFII may hold more than 10% of a listed company. Foreign investors may not own more than 30% of a single company. There is an overall limit for all QFIIs at USD150 billion and a single QFII may invest up to USD1 billion, sovereign wealth funds, central banks and monetary authorities can invest beyond USD1 billion. Foreign investors may also make strategic investments in A-shares of listed companies subject to certain criteria and restrictions. RQFIIs are allowed to invest in listed equities subject to quotas. RQFIIs are allowed to fund investments using renminbi sourced abroad.	Qualified Domestic Institutional Investors (QDII) are allowed to buy and hold offshore securities subject to certain quotas. Insurance companies may invest subject to approval and total overseas investment cannot exceed 15% of the insurance company's total assets.	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 RQFIIs, 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 require 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.
Indonesia	Foreign investors are allowed to purchase money market instruments in the secondary market. For Bank Indonesia Certificates, the minimum holding period is one week.	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.	Foreign investors are allowed to purchase shares without limit with the exception of shares in finance company joint ventures.	Pension funds are not allowed to invest in securities abroad. Mutual funds investments are limited to 15% of their net asset value while protected mutual fund has a limit of 30% of their net asset value.	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.	Residents are allowed to purchase capital instruments issued abroad.	No restrictions on repatriation of capital, profits, dividends, and interest.

continued on next page

Table 15 *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 foreign currency-denominated money market instruments abroad requires notification to a designated foreign exchange bank. Sale of foreign currency-denominated money market instruments exceeding USD30 million or local currency-denominated money market instruments by residents abroad requires notification to the Ministry of Strategy and Finance.	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.	Effective January 1, 2015, proceeds from capital transactions in excess of USD500,000 or its equivalent must be repatriated within 3 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.	Residents with domestic borrowing, and has funded the investment through conversion of Malaysian ringgit into foreign currency, may invest abroad but subject to certain limits.	Nonresidents are free to repatriate funds from divestment of local currency-denominated assets or profits and dividends arising from investments.
Philippines	Registration of money market instruments purchased by non-residents is required only if the foreign exchanged needed for capital repatriation and remittance of profits and earnings will be purchased from Bangko Sentral ng Pilipinas' Authorized Agent Banks (AAB) and AAB-forex corporations.	Nonresidents are allowed to purchase bond market instruments without any restrictions.	Registration of equity instruments purchased by non-residents is required only if the foreign exchanged needed for capital repatriation and remittance of profits and earnings will be purchased from AABs and AAB-forex corporations.	A resident's investments abroad in excess of USD60 million a year requires prior regulatory approval.	No restrictions on repatriation of capital, profits, dividends, and interest if the foreign exchange needed will be purchased from AABs and AAB-forex corporations
Singapore	No restrictions for nonresidents to purchase money market instruments.	No restrictions for nonresidents to purchase bond market instruments.	No restrictions for nonresidents to purchase 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 foreign currency before using such funds to finance activities outside Singapore.

continued on next page

Table 15 *continued*

Market	Capital Inflow			Capital Outflow	
	Money Market Instruments	Bond Market Instruments	Equity Instruments	Resident Investors	Nonresident Investors
Thailand	Nonresidents can invest in THB-denominated money market instruments, except bills of exchange issued by domestic financial institutions. Investment of a nonresident group in THB-denominated money market instruments issued by a domestic financial institution is subject to the overall outstanding THB-denominated borrowing limit of THB10 million.	Nonresidents can invest in THB-denominated debt securities. Investment of a nonresident group in THB-denominated debt securities issued by a domestic financial institution is subject to a overall outstanding THB-denominated borrowing limit of THB10 million.	Nonresidents can invest in equities, but foreign equity participation may be limited if a company is subject to the provisions of the Foreign Business Act or other related laws. Financial institutions' foreign equity participation is limited to 25% of total shares in locally-incorporated banks, credit finance companies, and finance companies. Nonresidents can invest up to 100% of the shares of an asset management company or a securities company. For most other Thai corporations, foreign equity participation is up to 49%.	Institutional investors—the Government Pension Fund, Social Security Fund, companies listed on the Stock Exchange of Thailand, insurance companies, mutual funds, provident funds, securities companies, specialized financial institutions, and Thai companies with asset size of at least THB5 billion—may invest freely in foreign securities issued abroad, up to a certain limit imposed by the directors, management, or supervisory authority of the institutional investors. Individual and corporate investors may invest through private funds or securities companies or commercial banks holding relevant securities business licenses. In September 2014, the Bank of Thailand authorized the Securities and Exchange Commission to allocate foreign investments within an overall limit of USD75 billion.	Proceeds of up to USD50,000 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. These transactions must be executed in Vietnamese dong (VND) through an account at a licensed bank in Viet Nam.	There is no limit on investments however foreign investors are required to open a VND-denominated securities trading account to sell or purchase debt securities. These transactions must be executed in VND through an account at a licensed bank in Viet Nam.	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 regulation set by the State Bank of Vietnam. Institutional investors, upon acquiring a license for indirect investment abroad, must open an account to transfer capital overseas and transfer legal capital, profits, and earnings from offshore indirect investment to Viet Nam under the State Bank of Vietnam regulations.	There is no provision for timeline on repatriation of profits. However, profits from foreign indirect investment must be repatriated via foreign exchange accounts at authorized credit institutions.

SGD = Singapore dollar, THB = Thai baht, USD = United States dollar.
Sources: International Monetary Fund's *Annual Report on Exchange Arrangements and Exchange Restrictions 2016,* and local market sources.

In terms of Transaction Funding, the lowest rating was for the Philippines at 2.4, resulting from the lack of a bond repo market as a means to raise funding. However, participants noted that plans are underway for the creation of repo and reverse repo markets. Indonesia and Thailand both scored quite low (2.5) for Transaction Funding. Despite the passing of the Global Master Repurchase Agreement last year, further improvements are needed in the Indonesian government bond market before the repo market can become more active.

For Tax Treatment, the lowest rankings were for the Philippines at 1.9 and Indonesia at 2.3. In the Philippines, government bond investments are subject to a final withholding tax of 20%. While in Indonesia, residents and nonresidents are subjected to 15% and 20% withholding taxes, respectively.

Table 16 provides a summary of tax treatment in emerging East Asian bond markets.

Markets generally scored Hedging Mechanisms quite low, suggesting the need for more ways to hedge risk in government bonds as a means to boost overall government bond market liquidity. The lowest rating came from Viet Nam at 1.5, where the government is currently taking steps to develop a derivatives market.

Similar to Settlement and Custody, Transparency generally received higher ratings across markets, with a regional average of 3.2, largely due to the availability of pricing references for most government bond markets.

Quantitative Indicators for Corporate Bond Markets

Corporate bond market liquidity in emerging East Asia remained limited despite respondents in most economies noting an active secondary market for trading corporate securities for this year's survey.

Unlike government bonds, most corporate bonds tend to become illiquid after issuance. Those that are traded in the secondary market are highly concentrated in the higher-investment-grade bond segment (AAA-rated). Although corporate bond issuances in the region have grown over the years, the supply of corporate bonds remains limited with relatively small trading sizes that

Table 16: Tax Treatments in Emerging East Asian Markets

Market	Withholding Tax on Interest Income	
	Government	Corporate
China, People's Rep. of	Exempt from tax	Nonresident investors are subject to a 10% withholding tax, which is subject to reduction based on applicable treaties.
Hong Kong, China	Exempt from tax	Individuals are exempt from tax. Corporations are subject to a 16.5% tax on profits.
Indonesia	Residents and permanent establishments are subject to a 15% tax on bonds and a 20% tax on *Sertifikat* Bank Indonesia. Nonresidents are subject to a 20% tax, which is subject to reduction based on applicable treaties. For mutual funds registered with Otoritas Jasa Keuangan, the tax rate is 5% until 2020 and 10% thereafter. For sovereign foreign currency bonds, residents and nonresidents are exempted from tax.	Residents and permanent establishments are subject to a 15% tax. Nonresidents are subject to a 20% tax, which is subject to reduction based on applicable treaties. For mutual funds registered with Otoritas Jasa Keuangan, the tax rate is 5% until 2020 and 10% thereafter.
Korea, Republic of	Resident and nonresident investors are subject to a 15.4% tax. For nonresidents, the tax is subject to reductions based on applicable treaties.	Resident and nonresident investors are subject to a 15.4% tax. For nonresidents, the tax is subject to reduction based on applicable treaties.
Malaysia	Residents and nonresidents are exempt from tax.	Nonresidents are exempt from tax on interest payments on bonds issued by banks and financial institutions.
Philippines	Subject to a 20% tax withheld at source. Foreign corporations are subject to a 30% tax on the gross amount of income derived within the Philippines. Nonresident individuals not engaged in trade or business are subject to a 25% tax on the gross amount of income derived in the Philippines.	Subject to a 20% tax withheld at source. Foreign corporations are subject to a 30% tax on the gross amount of income derived within the Philippines. Nonresident individuals not engaged in trade or business are subject to a 25% tax on the gross amount of income derived in the Philippines.
Singapore	Exempt from tax except for resident institutional investors who are subject to a 10% tax.	Individual investors are tax exempt. Resident and nonresident institutional investors are exempt from withholding tax, subject to qualifying conditions.
Thailand	Individual resident investors are subject to a 15% withholding tax. Institutional resident investors are subject to a 1% withholding tax. Nonresident investors are exempt from tax.	Individual resident investors are subject to a 15% withholding tax. Institutional resident investors are subject to a 1% withholding tax. Nonresident investors are subject to a 15% withholding tax.
Viet Nam	Residents are exempt from tax. Nonresidents are subject to a 5% withholding tax, which is subject to reduction based on applicable treaties.	Subject to a 5% withholding tax.

Source: *AsianBondsOnline*.

can easily be absorbed by the market as investors typically buy and hold corporate bonds until maturity. Some economies have put in place measures to enhance liquidity in the market. For example, in Malaysia this year, the mandatory rating of corporate bond issuances was lifted and unrated bonds were allowed to be traded in the secondary market; in Indonesia, the minimum investment requirement for nonbank financial institutions was expanded to include bonds issued by state-owned corporates with infrastructure-related interests.

Survey respondents listed several factors that determine the liquidity of corporate bonds. Highly rated corporate bonds are more liquid compared to unrated bonds. In many cases, institutional investors, which are the most active participants in the secondary market trading, have to follow internal compliance to buy higher-grade investment paper. Corporate bonds with larger issuance sizes tend to attract stronger interest from the market, thereby improving liquidity. Small issuances can create an imbalance of demand and supply in the market, which translates into volatility in the bond price. This discourages investors, averting liquidity flows in the market. Meaningful liquidity is also found in bonds with more attractive yields compared to peers and in bonds issued by established firms and state-owned corporations. For newly issued corporate bonds, per survey respondents, liquidity typically lasts as briefly as 2 days in Malaysia to as long as 1 year in the Republic of Korea.

In this year's survey, respondents indicated the existence of an active secondary market for trading corporate bonds in all emerging East Asian economies except the Philippines and Viet Nam, where only a small number of firms tap the debt market. **Table 17** shows the respondents' answers in terms of average bond issue size, average bid–ask spreads, and average bond transaction size in the corporate segment. For the Philippines, the values shown apply to newly issued corporate bonds.

Despite corporate bond market liquidity remaining subdued in emerging East Asia, survey results point to some improvement over conditions in 2016. The bid–ask spreads for corporate bonds in the secondary market narrowed in 2017 across emerging East Asia except in Hong Kong, China and Singapore. For Viet Nam, respondents did not quote bid–ask spreads for corporate bonds as its market size is limited and largely illiquid.

Among the markets that experienced a decline in bid–ask spreads, the Philippines had the largest drop, which can be attributed to the increased supply of corporate bond issuances this year that boosted trading and increased investor interest. Despite the narrowing, the Philippines had the widest bid–ask spread in the region. On the other hand, the Republic of Korea had the lowest bid–ask spread, owing to its well-developed corporate bond market. It is also the only market in the region in which the size of the corporate bond segment is larger than the government bond segment.

In terms of issuance size, the PRC had the largest average issue at USD169 million and Viet Nam had the smallest at USD33 million. In terms of average transaction size, Viet Nam had the largest average of USD13.2 million and the Philippines once again had the smallest at USD0.3 million. In general, most economies in the region

Table 17: Local Currency Corporate Bond Markets Quantitative Indicators

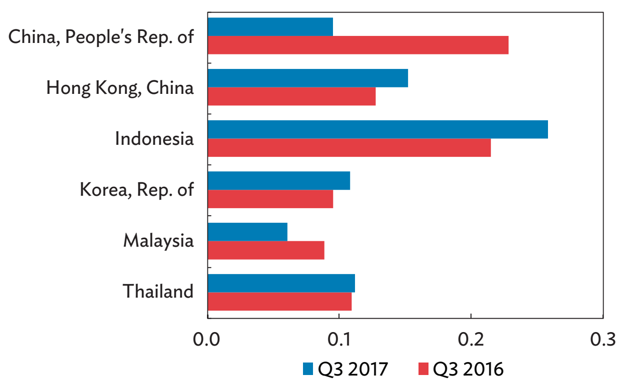
		PRC	HKG	INO	KOR	MAL	PHI	SIN	THA	VIE	Regional
Typical Issue Size of Corporate Bonds	Average (USD million)	169.0	51.6	51.0	41.7	107.0	106.1	160.7	53.3	33.0	85.9
Typical Bid–Ask Spread for Corporate Bonds	Average (bps)	10.4	18.8	15.9	3.8	7.2	41.7	14.2	5.0	–	14.6
	SD	8.5	15.9	8.1	4.2	3.8	14.4	5.2	0.0	–	12.2
	CV	0.8	0.8	0.5	1.1	0.5	0.3	0.4	0.0	–	0.8
Typical Transaction Size of LCY Corporate Bonds	Average (USD million)	4.7	3.8	0.6	8.5	1.8	0.3	1.8	0.8	13.2	3.9
	SD	4.6	3.6	0.2	0.6	0.0	0.3	0.4	10.6	–	4.3
	CV	1.0	0.9	0.3	0.1	0.0	1.0	0.2	12.8	–	1.1

– = not applicable, bps = basis points; CV = coefficient of variation; HKG = Hong Kong, China; 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; USD = United States dollar; VIE = Viet Nam.
Note: For the Philippines, bid-ask spread for corporate bonds refer to the spread when the bonds were newly issued due to limited liquidity.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

posted larger average issuance and transaction sizes in 2017 than in 2016.

Trading volumes for LCY corporate bonds improved in most emerging East Asian economies for which data are available, as evidenced by higher turnover ratios in Q3 2017 (**Figure 24**). Corporate bond turnover ratios improved in Hong Kong, China; Indonesia; the Republic of Korea; and Thailand; with the largest increase seen in Indonesia where the turnover ratio rose to 0.26 in Q3 2017 from 0.21 in Q3 2016. Conversely, the PRC experienced a sharp fall in its corporate bond turnover ratio, due to continued deleveraging, from having the highest turnover ratio in the region in Q3 2016 at 0.23 to 0.09 in Q3 2017. Malaysia had the lowest corporate bond turnover ratio in the region, declining to 0.06 in Q3 2017 from 0.09 in Q3 2016.

Figure 24: Local Currency Corporate Bond Turnover Ratios



Q3 = third quarter.
Notes:
1. Turnover ratios are calculated as local currency trading volume (sales amount only) divided by average local currency value of outstanding bonds between the preceding and current quarters.
2. For Hong Kong, China; and Thailand, data for the third quarter of 2017 are based on *AsianBondsOnline* estimates.

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).

Characteristics of Individual Corporate Bond Markets

People's Republic of China

Market participants consider the PRC's corporate bond market as being fairly liquid. Participants identified state-owned enterprise bonds, medium-term notes, and commercial paper as among the most liquid instruments. Unlike the government bond market, however, there is some fragmentation in the liquidity of the corporate bond market. Participants said that liquidity for a given corporate bond largely depends on the name of the issuer and its credit rating. Even among state-owned enterprise bonds, the biggest companies and those with the highest credit ratings tend to have much more liquidity compared with other state-owned enterprise bonds that are perceived to be much riskier.

Bid–ask spread information corroborated this perception, with the bid–ask spreads of these bonds the lowest among all corporate bond categories (**Table 18**). However, declines in bid–ask spreads were noted in the corporate bond market for almost all categories in 2017, with the exception of commercial bank bonds. Other measures, however, showed declines in corporate bond market liquidity. Similar to the government bond market, declines were noted in the average trading sizes of corporate bonds. In addition, there were declines in corporate turnover ratios in 2017 (**Figure 25**).

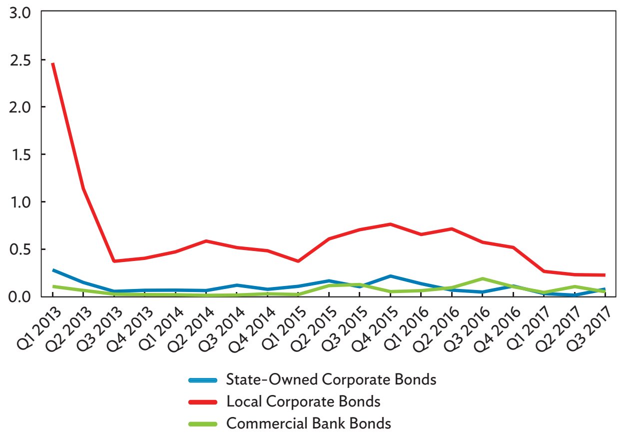
The bid–ask spread for commercial bank bonds rose to 20.8 bps in 2017 from 5 bps in 2016. Other corporate bond categories showed declines, with the largest decline seen for commercial paper, where the bid–ask spread fell to 5.8 bps from 10.0 bps. State-owned enterprise

Table 18: Local Currency 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)	1,020.2	1,076.4	1,124.5	1,471.1	1,088.6
Bid–Ask Spread (bps)	7.3	11.7	10.4	20.8	5.8
Average Trading Size (CNY million)	36.3	13.3	31.3	31.7	31.3

bps = basis points, CNY = Chinese renminbi, MTNs = medium-term notes, SOE = state-owned enterprise.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

Figure 25: Local Currency Corporate Bond Turnover Ratios in the People's Republic of China



Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter
Source: *ChinaBond*.

bonds fell to 7.3 bps from 10.5 bps, while the spread for local corporate bonds declined to 11.7 bps from 13.3 bps. The bid–ask spread for medium-term notes was roughly unchanged.

Similar to the large increase in the bid–ask spread of commercial bank bonds, the average trading size of commercial bank bonds declined to CNY31.7 million from CNY100 million. The average trading size of local corporate bonds also experienced a strong decline, falling to CNY13.3 million in 2017 from CNY51.7 million in 2016.

Corporate bond market liquidity was affected by the deleveraging conducted by the PRC, which pushed up corporate borrowing costs and led to fewer issuances by corporates. In addition, the PRC has sought to limit potential risks created by wealth management products, which further reduced liquidity.

Indonesia

The overall upbeat sentiment in Indonesia's government bond market in 2017 spilled over into the corporate bond market. Most survey respondents indicated the presence of a more active secondary market for corporate bonds. However, some survey respondents opined that trading in corporate bonds was still limited.

Based on this year's survey, the typical bid–ask spread for corporate bonds averaged 15.9 bps and for newly issued corporate bonds it stood at 17.4 bps, both lower compared with the previous year's quoted averages of 29.2 bps each (**Table 19**). The average single-trade transaction size for corporate bonds climbed to IDR7.5 billion in 2017 and for newly issued corporate bonds it reached IDR6.3 billion, both of which were higher than the IDR4.3 billion quoted in the 2016 survey. The typical issue size for corporate bonds this year averaged IDR686.5 billion, higher from IDR660.7 billion in 2016.

Table 19: Local Currency Corporate Bond Survey Results—Indonesia

	Corporate Bonds
Average Issue Size (IDR billion)	686.5
Bid–Ask Spread (bps)	
Corporate Bond	15.9
Newly-Issued Corporate Bond	17.4
Average Trading Size (IDR billion)	
Corporate Bond	7.5
Newly-Issued Corporate Bond	6.3

bps = basis points, IDR = Indonesian rupiah.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

In Q3 2017, both trading volume and the turnover ratio for corporate bonds rose, further supporting the generally positive sentiment in Indonesia's bond market this year. Trading volume surged to IDR89.0 trillion in Q3 2017, up from IDR59.6 trillion in Q3 2016 and IDR68.5 trillion in Q2 2017. The corporate bond turnover ratio was also higher at 0.26 in Q3 2017 versus 0.21 in both Q3 2016 and Q2 2017.

Market participants cited the revised regulation on minimum investment holdings for nonbank financial institutions as the reason for increased interest in corporate bonds this year. In 2017, the regulation was expanded to include state-owned corporate bonds issued for infrastructure-related investments, as part of the 30% minimum investment portfolio holdings. According to market participants, liquidity in the corporate bond market is driven by the type of issuer. Bonds issued by state-owned corporations and financial institutions generally command more demand and therefore have better liquidity. Credit rating was also cited as an important factor in determining liquidity. Corporate bonds rated between A and AAA normally have strong liquidity.

While liquidity was noted to have improved this year, there were still impediments to achieving a well-developed corporate bond market cited by market participants. The lengthy process for issuing corporate bonds needs to be addressed. Some participants also noted the absence of a market-maker for corporate bonds. In addition, tax incentives were mentioned by survey respondents as a means to encourage more issuance and trading.

Republic of Korea

In the Republic of Korea's corporate bond market, a pick-up in trading activity has been observed. The average bid–ask spread fell to 3.8 bps from 7.2 bps the previous year (**Table 20**). The average trading size was slightly lower at KRW9.7 billion in 2017 versus KRW10.0 billion in 2016, while the average issue size increased to KRW47.8 billion from KRW20.8 billion.

Table 20: Local Currency Corporate Bond Survey Results—Republic of Korea

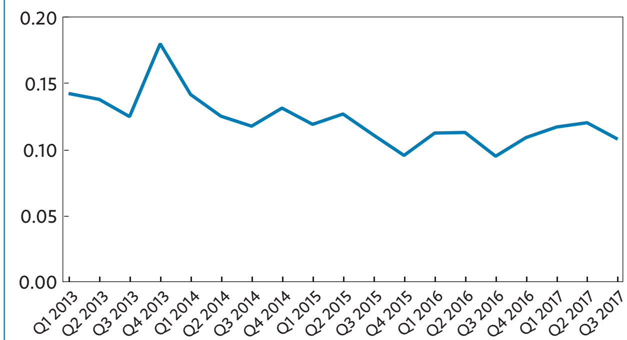
	Corporate Bonds
Average Issue Size (KRW billion)	47.8
Bid–Ask Spread (bps)	3.8
Average Trading Size (KRW billion)	9.7

bps = basis points, KRW = Korean won.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

The quarterly turnover ratio for corporate bonds remained steady in 2017 (**Figure 26**). However, it is worthwhile to note the higher levels of monthly trading volume recorded in the first 9 months of 2017. The monthly average trading volume for 2017 reached KRW94.5 trillion, or a 10.3% y-o-y increase from KRW85.7 trillion in the same period in 2016. Meanwhile, the average outstanding size between end-June and end-September was only up 3.3% y-o-y.

Survey respondents stated that there continues to be an active secondary market for trading corporate bonds, but it is still not as active as the secondary market for trading government bonds. Liquidity for new corporate bond issuance is limited to between 6 months and 1 year. Liquidity and demand for bonds are still very much driven by the issuer's credit rating, as most institutional investors have to abide by internal compliance. Issue size and the demand from large institutional investors, such as insurance companies and public funds, also drive the liquidity of corporate bonds.

Figure 26: Turnover Ratio for Corporate Bonds in the Republic of Korea



Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter.
Note: Corporate bonds include equity-linked securities and derivatives-linked securities.
Source: EDAILY *BondWeb*.

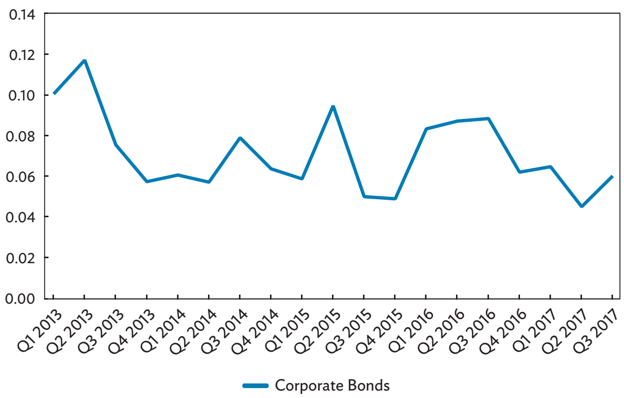
To further improve liquidity in the corporate bond market, a survey respondent suggested introducing hedging instruments like credit default swaps.

Malaysia

The quarterly turnover ratio in Malaysia's corporate bond market dropped to 0.06 in Q3 2017 from 0.09 in Q3 2016 and has been at around 0.06 since Q4 2016, indicating a less liquid market. The corporate bond market saw transaction volumes ease in Q3 2017 (**Figure 27**), declining 24.4% y-o-y to MYR35.1 billion, while average corporate outstanding bonds increased 10.7% y-o-y to MYR584.4 billion. The lifting of mandatory ratings for new bond issuances, which became effective in early 2017, may have persuaded additional firms to tap the debt market. A survey respondent noted that total corporate bond issuance increased significantly this year, especially in the government-guaranteed corporate bond segment.

Survey respondents in Malaysia indicated that liquidity in the corporate bond market is highly concentrated in the trading of bonds with higher investment grades such as AAA-rated and government-guaranteed paper, with market participants largely comprising banks and pension funds. While liquidity in the corporate segment was perceived to be relatively low, the average bid–ask spread slightly declined to 7.2 bps in Q3 2017 from 8.4 bps in

Figure 27: Quarterly Corporate Bond Turnover Ratio in Malaysia



Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter
Sources: Bank Negara Malaysia–Bond Info Hub.

Q3 2016, and the average trading size rose 18.2% y-o-y to MYR7.6 million (**Table 21**).

Newly issued corporate bonds in Q3 2017 had an average bid–ask spread of 4.7 bps, with an average transaction size of MYR20 million. Liquidity is short-lived for newly issued corporate bonds, usually lasting between 2 days and 2 months, depending on several factors such as issuer name, yield, issuance size, supply pipeline, credit rating, and industry-specific risks. Survey respondents noted that sound liquidity exists for newly issued bonds when their yield differential against comparable bonds is high and when benchmark (MGS) yields are steady. Additionally, reasonably sized corporate bond issuances tend to have higher liquidity than smaller issuances.

Table 21: Local Currency Corporate Bond Survey Results—Malaysia

	Corporate Bonds
Average Issue Size (MYR million)	451.5
Bid–Ask Spread (bps)	7.2
Average Trading Size (MYR million)	7.6

bps = basis points, MYR = Malaysian ringgit.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

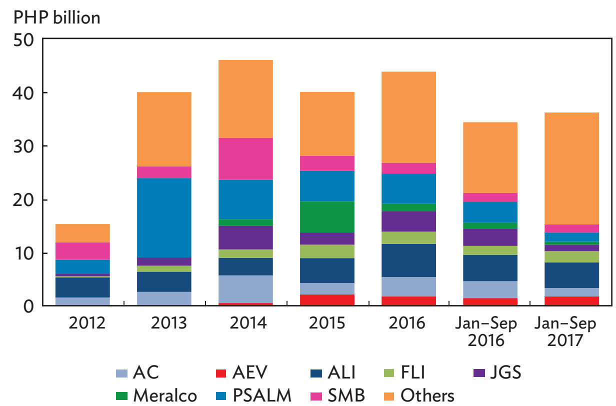
Philippines

The Philippines lacks an active secondary market for trading corporate bonds as most bonds become illiquid immediately after issuance. Some survey participants noted the occasional trading of corporate bonds, but this is usually the case of retail clients searching for high yields. Survey results showed that the average bid–ask spread for corporate bonds declined to 57.5 bps from 68.8 bps in the 2016 survey, while the average transaction size increased to PHP21.0 million from PHP12.3 million.

Newly issued corporate bonds have an average bid–ask spread of 41.7 bps and an average market transaction size of about PHP14 million, according to survey respondents. Typically, liquidity for corporate bonds lasts for as short as 1 week and as long as 2 months, with the duration determined by the issuer's name and financial performance, issuance volume, yield, credit rating, and tenor.

The total trading volume of corporate securities, based on data from the Philippine Dealing and Exchange Corporation, observed a slight increase in the first 9 months of 2017 to PHP36.1 billion from PHP34.3 billion in the same period a year earlier, reflecting relatively better liquidity conditions in the corporate segment (**Figure 28**).[11]

Figure 28: Philippine Dealing and Exchange Corporation Trading Volume Trends—Corporate Bonds in the Philippines



AC = Ayala Corporation; AEV = Aboitiz Equity Ventures; ALI = Ayala Land, Inc.; FLI = Filinvest Land, Inc.; JGS = JG Summit Holdings; PDEx = Philippine Dealing and Exchange Corporation; PHP = Philippine peso; PSALM = Power Sector Assets and Liabilities Management Corp.; SMB = San Miguel Brewery, Inc.
Note: PDEx reports one side of the trade only.
Source: Philippine Dealing and Exchange Corporation.

[11] Traded corporate securities include the bonds of three government-owned or -controlled corporations: (i) Land Bank of the Philippines, (ii) National Home Mortgage Finance Corporation, and (iii) the Power Sector Assets and Liabilities Management Corporation.

Singapore

Market participants in this year's survey noted that a small secondary market exists in Singapore, with liquidity largely varying depending on the type of bond, the issuer name, and the tenor, among other factors. Singapore's corporate bonds can be disaggregated into two major segments: the quasi-government and high-quality bonds; and small-issuer, high-risk, high-yield bonds. The latter segment has been plagued by defaults, especially in the oil and gas sector.

Overall, liquidity remains limited in Singapore's corporate bond market, with most survey participants observing a wider average bid–ask spread for corporate bonds at 14.2 bps in 2017 versus 10.0 bps in 2016 (**Table 22**). The average issue size for the January–September period decreased in 2017 to SGD218.1 million from SGD221.1 million a year earlier. On the other hand, the average trading size for Singapore corporate bonds climbed to SGD2.5 million in 2017 from SGD2.3 million.

Table 22: Local Currency Corporate Bond Survey Results—Singapore

	Corporate Bonds
Average Issue Size (SGD million)	218.1
Bid–Ask Spread (bps)	14.2
Average Trading Size (SGD million)	2.5

bps = basis points, SGD = Singapore dollar.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

Survey respondents also noted that corporate bond investors are largely buy-and-hold types, which poses a challenge to developing a well-functioning repo market and in developing a wide array of hedging instruments for corporate bonds.

The MAS has encouraged more bond issuance in Singapore in 2017 through schemes such as the Asian Bond Grant, Green Bond Grant, and SGD Credit Rating Grant. To an extent, these schemes have helped increase bond listings on the Singapore Exchange. However, most of those surveyed noted that this has yet to translate to improved liquidity.

Thailand

As observed by some survey respondents, liquidity in Thailand's corporate bond market has improved in the last year, but the market remains largely illiquid. Credit rating, issuer name, and tenors are the top reasons cited in determining corporate bond liquidity. Survey respondents have observed that for this year, more liquidity has been observed for corporate bonds with a higher rating.

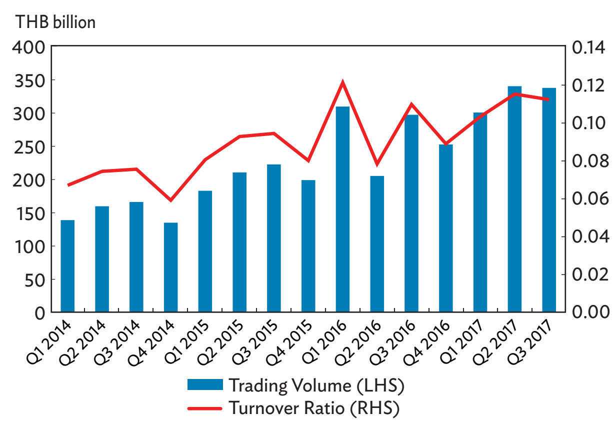
The average bid–ask spread for Thai LCY corporate bonds decreased to 5.0 bps in 2017 from 6.7 bps in 2016, with an average trading size of THB27.5 million (**Table 23**). The trading volume for corporate bonds rose steadily from THB251 billion in Q4 2016 to reach THB335.6 billion in Q3 2017. In the same period, the turnover ratio for corporate bonds rose from 0.09 to 0.11 (**Figure 29**).

Table 23: Local Currency Corporate Bond Survey Results—Thailand

	Corporate Bonds
Average Issue Size (THB million)	1,774.4
Bid–Ask Spread (bps)	5.0
Average Trading Size (THB million)	27.5

bps = basis points, THB = Thai baht.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

Figure 29: Trading Volume and Turnover Ratio for Local Currency Corporate Bonds in Thailand



LHS = left-hand side, RHS = right-hand side, THB = Thai baht, Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter.
Sources: Bank of Thailand and Thai Bond Market Association.

Viet Nam

Typical of other corporate bond markets in emerging East Asia, Viet Nam's LCY corporate bond market is considered illiquid. In this year's survey, participants did not provide quotes for bid–ask spreads for corporate bonds. As in previous years' surveys, market participants noted that there is no active secondary market for corporate bonds in Viet Nam.

Viet Nam's corporate bond market is the smallest in emerging East Asia in terms of size. While some corporate bonds get reported, most other corporate bond issuances are conducted via private placement and are held in books by their holders until maturity. Some participants noted that liquidity for corporate bonds is determined by the issuer's name and credit rating, and the term to maturity.

The results of the survey indicated the need for further deepening and broadening of the corporate bond market in Viet Nam. Most qualitative factors were ranked fairly low by most market participants, particularly Diversity of Investors, Market Access, FX Regulations, Transaction Funding, Hedging Mechanisms, and Price Transparency.

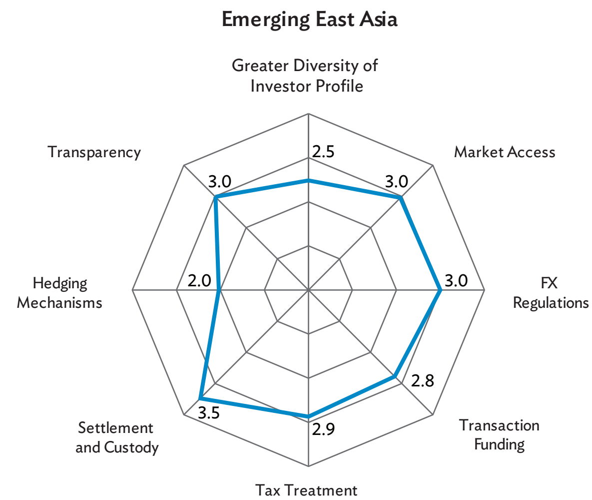
Qualitative Indicators for Corporate Bond Markets

The results from this year's survey depicted the majority of corporate bond markets in the region as still lacking in liquidity compared to government bond markets. However, most survey participants noted a more active secondary market for corporate bonds this year compared with the prior year's survey.

Investors in the region continue to treat corporate bonds as long term-investments, particularly large institutional investors such as insurance and pension funds, and the preference is still for high-rated corporate bonds. This is despite the fact that most markets are fairly developed structure-wise, based on this year's survey results. This reflects the measures and regulations implemented over the years to improve the infrastructure of the individual bond markets in the region, except for the smaller markets such as Viet Nam and the Philippines, which had low scores. Viet Nam posted low scores on all structural issues due to the small size of its corporate bond market and the lack of a secondary market trading. Companies in Viet Nam still source their funding through bank loans given the ease of such transactions and the familiarity with the process.

Four out of eight structural issues had regional averages of 3.0 or higher (**Figure 30**). These include issues related to the ease of investing such as Market Access and

Figure 30: Regional Averages—Local Currency Corporate Bond Market Structural Issues



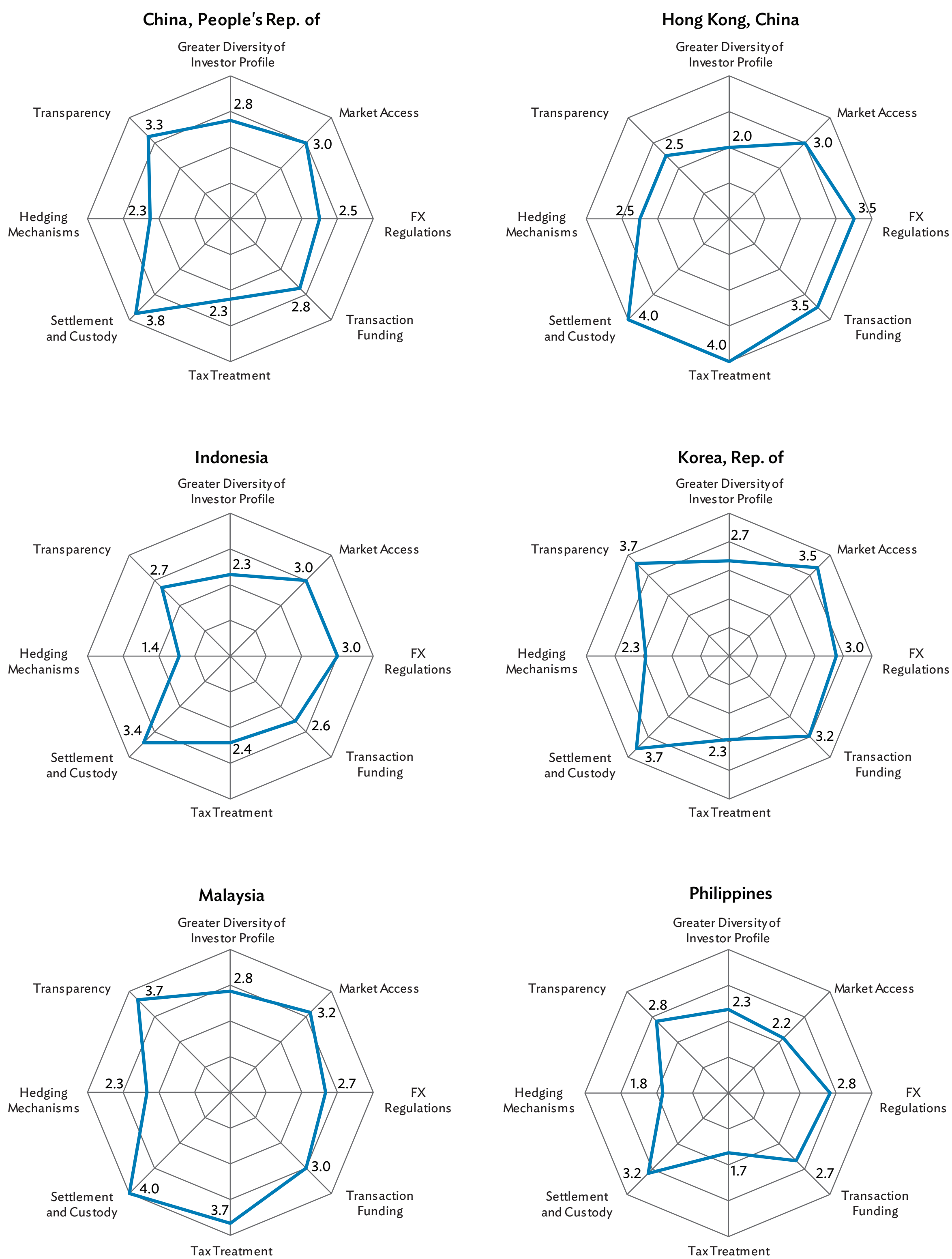
FX = foreign exchange.
Note: Emerging East Asia comprises the People's Republic of China; Hong Kong, China; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.
Source: *AsianBondsOnline* 2017 LCY Bond Market Liquidity Survey.

Transparency, those issues related to systems put in place to facilitate the trading of bonds such as Settlement and Custody, and FX Regulations that either facilitate or inhibit capital flows. Tax Treatment had a regional average score of 2.9 as most markets impose taxes on income earned by corporate bond investors. Transaction Funding had an average of 2.8 as most markets lack access to diverse funding sources such as repo transactions. Meanwhile, Greater Diversity of Investor Profile and Hedging Mechanisms received the lowest rankings in almost all markets.

Settlement and Custody posted the highest regional average of 3.5. All markets except Viet Nam gave this issue their highest score (**Figure 31**). This was expected of developed markets such as Hong Kong, China; the Republic of Korea; Malaysia; the PRC; and Singapore, which have well-developed trading systems and platforms that facilitate efficient transactions and settlement. The smaller corporate bond markets like Indonesia, the Philippines, and Thailand also posted relatively high scores.

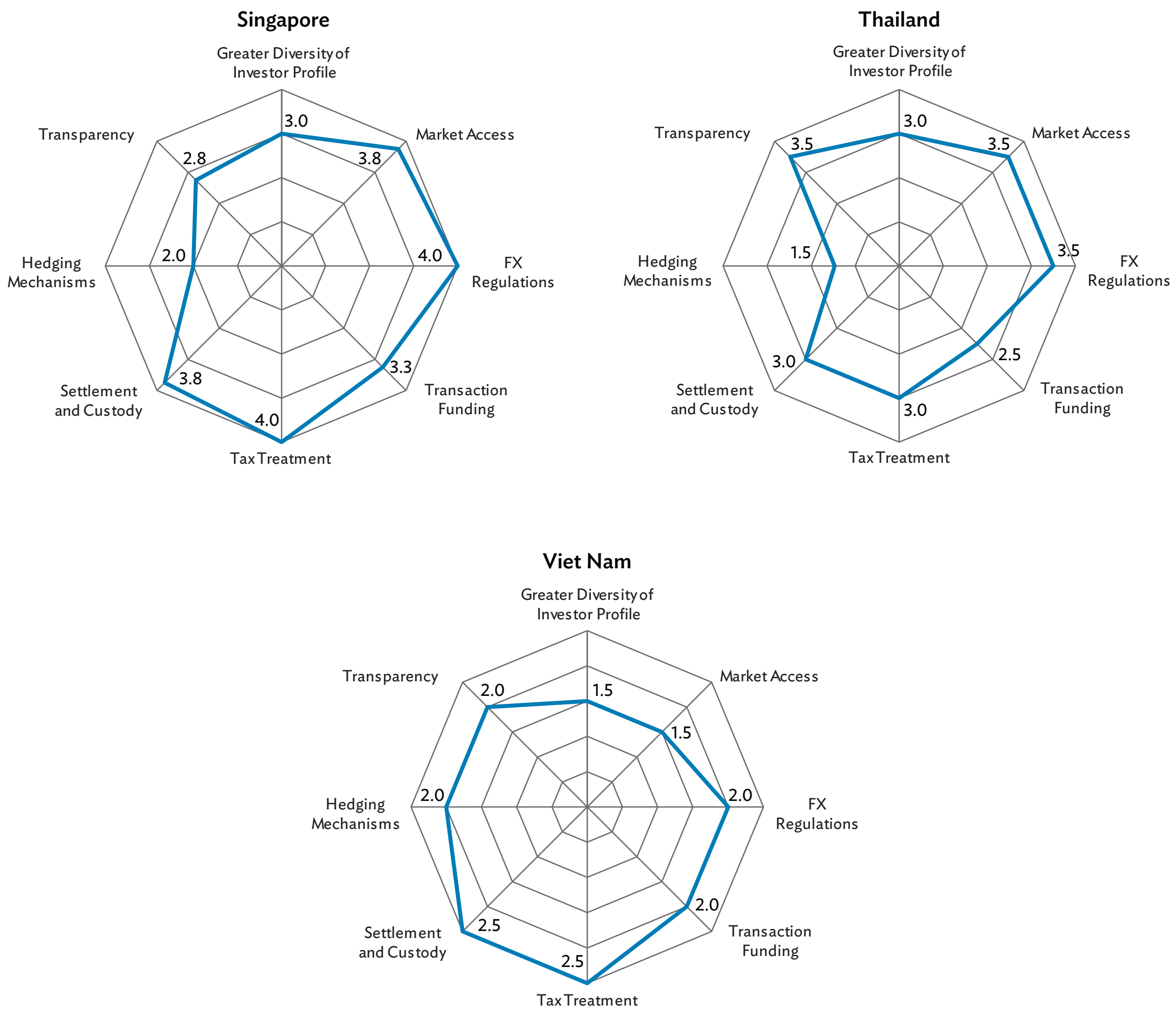
In terms of Transparency, or the availability and accuracy of pricing information and financial data on potential

Figure 31: Structural Issues for Individual Local Currency Corporate Bond Markets



continued on next page

Figure 31 *continued*



FX = foreign exchange.
Source: *AsianBondsOnline* 2017 Local Currency Bond Market Liquidity Survey.

bond issuers, the regional average stood at 3.0. The Republic of Korea and Malaysia had the highest scores in the region at 3.7 each, followed by Thailand and the PRC. These markets have established exchange platforms and bond pricing agencies as sources of information on pricing and listed bond issuers. Indonesia, the Philippines, and Singapore had averages of less than 3.0, and Viet Nam's score was 2.0. These markets have relatively small and illiquid corporate bond markets with a lack of available information.

FX and capital flow regulations were diverse among markets in the region with a regional average of 3.0. Singapore and Hong Kong, China had averages of 4.0 and 3.5, respectively, as these markets allow the free movement of capital. They were followed by Thailand, Indonesia, and the Republic of Korea, which have fairly liberal FX rules and are open to foreign investors. These three markets saw high levels of net foreign inflows this year, albeit in the government sector. Malaysia, which scored 2.7 in this year's survey has always been open to foreign investors. However, the re-imposition of rules to manage currency speculation in November 2016 resulted in restricted capital inflows into Malaysia in 2017. The PRC also scored low despite efforts in the last few years to ease capital controls, though these were more concentrated in the government bond market. The Philippines and Viet Nam continue to have stricter regulations in place, but in recent years they have been gradually liberalizing FX rules.

Market Access in the region is fairly lenient, with the regional average at 3.0. Most markets had averages of at least 3.0, with Singapore, the Republic of Korea, Thailand, and Malaysia posting the highest scores. On the other hand, the Philippines and Viet Nam had the lowest scores due to their small corporate bond markets.

The imposition of withholding taxes on interest income continued to affect demand, participation, and liquidity in corporate bond markets in the region, resulting in a regional average of 2.9. The only markets that scored relatively high were Hong Kong, China; Singapore; and Malaysia where there is no withholding tax on interest income for residents in these markets. The Philippines had the lowest score at 1.7, as its tax rate is among the highest in the region.

The assessment of Transaction Funding, or the availability of various funding sources through active and developed money markets, was varied in the region. The regional average stood at 2.8, with four out of nine markets having averages of at least 3.0. Hong Kong, China; the Republic of Korea; Malaysia; and Singapore had the highest ratings. Survey participants stated the need to develop this area further to promote liquidity and encourage trading activity in the corporate bond market.

The region's corporate bond markets still lack Diversity in Investor Profile, posting an average score of 2.5, with most market's individual averages below 3.0. Large institutional investors such as banks, insurance funds, and pension funds continue to dominate the market as the largest investors in corporate bonds. The lowest ratings in this category were in Hong Kong, China; Indonesia; the Philippines; and Viet Nam.

One of the most pertinent structural issues is the lack of Hedging Mechanisms available to corporate bond investors. The regional average stood at 2.0, with all markets posting scores of 2.5 or lower. Indonesia had the lowest score at 1.4, followed by Thailand at 1.5, and the Philippines at 1.8.