ASIA BOND MONITOR

NOVEMBER 2017

ASIAN DEVELOPMENT BANK

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Emerging East Asian Local Currency Bond Markets: A Regional Update

Highlights

Emerging East Asia's Bond Yields Rose

Yields in emerging East Asia rose between 1 September and 31 October, tracking increases in yields in major advanced economies.[1] The rise in yields was largely due to strong global economic growth and tightening liquidity.

Growth in advanced economies continued to improve. The United States (US) economy is growing at a solid pace and the labor market remains strong, while both the eurozone and Japan have upgraded their forecasts for economic growth in 2017.

The US began its balance sheet normalization in October as expected and is likely to further raise the policy rate, possibly before the end of the year. The Bank of Canada and the Bank of England have also recently raised their respective policy rates. Furthermore, the European Central Bank announced it would taper its monthly asset purchases starting in January 2018. In summary, the tightening of monetary policy in advanced economies has led to a rise in yields.

While emerging East Asia's financial markets have been stable on the back of strong global economic growth, potential risks are looming. These include further tightening of global liquidity as more central banks move to normalize monetary policy, and the longevity risk faced by financial institutions, which will require more hedging instruments in financial markets.

This issue of the *Asia Bond Monitor* includes three special discussion boxes. Box 1 analyzes the surge in global equity prices. Box 2 discusses the sovereign rating ceiling in international bond markets. Box 3 highlights the rationale for developing financial markets and instruments to cope with longevity risk.

Local Currency Bond Markets in Emerging East Asia Continue to Post Strong Growth

Emerging East Asia's overall LCY bond market continued to expand in size to reach USD11.6 trillion at the end of September. Growth was higher at 4.2% quarter-on-quarter (q-o-q) and 11.6% year-on-year (y-o-y) in the third quarter (Q3) of 2017 compared with 3.3% q-o-q and 10.6% y-o-y in the second quarter (Q2) of 2017. The People's Republic of China (PRC) continued to drive the region's bond market growth, despite the government's deleveraging efforts.

The government segment still dominates the region's LCY bond market with USD7.7 trillion in bonds outstanding, accounting for a 66.5% share of the regional total at the end of September, up from 65.9% at the end of June. The region's outstanding stock of LCY corporate bonds reached USD3.9 trillion, with its share of the regional total slipping to 33.5% from 34.1% during the review period.

The size of emerging East Asia's LCY bond market as a share of regional gross domestic product rose to 70.5% in Q3 2017 from 69.0% in Q2 2017. The Republic of Korea and Malaysia continued to have the largest LCY bonds outstanding-to-gross domestic product ratios.

LCY bond issuance rose in Q3 2017 to USD1.3 trillion, driven largely by a recovery in the PRC's issuance. Issuance by the central government and other government institutions accounted for 52.0% of the region's aggregate issuance during the quarter.

Foreign Investor Sentiments Positive through September, Outflows Noted in October

Foreign investors' interest in emerging East Asia's LCY government bond market remained positive at the end of September amid the Federal Reserve's hawkish tone

[1] 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.

in its September meeting. Nonresident holdings of LCY government bonds as a share of the total were up at the end of September compared with the end of June in the PRC, Indonesia, and Malaysia. The share of nonresident holdings was steady in Thailand during the review period.

Sell-offs in some bond markets were observed in October, resulting in a decline in the holdings of foreign investors. The foreign holdings share in Indonesia retreated to 38.4% at the end of October from 40.0% at the end of September. Capital outflows from the Thai bond market were also noted in October. Prior to this, both markets had posted capital inflows in every month of 2017 through September.

Local Currency Bond Yields Edge Higher

Government yield curves shifted upward in nearly all bond markets in emerging East Asia between 1 September and 31 October, tracking the rise in yields in advanced economies. The only exception was in Viet Nam, where the yield curve shifted downward following the central bank's policy rate cut in July.

AsianBondsOnline Annual Bond Market Liquidity Survey

AsianBondsOnline conducts a survey once a year to assess liquidity conditions in the region's LCY bond market and to identify potential issues and areas for development that can help in the further deepening of the region's bond markets. This year's survey was conducted between the last week of September through mid-October after the Federal Reserve announced it would begin its balance sheet reduction in October.

The overall assessment of market participants pointed to improved liquidity in five out of the nine markets in emerging East Asia: Hong Kong, China; Indonesia; Singapore; Thailand; and Viet Nam. On the other hand, roughly unchanged to tighter liquidity conditions were observed in the PRC, the Republic of Korea, Malaysia, and the Philippines.

The region's average bid–ask spread for government bonds narrowed in this year's survey to 3.2 basis points, while it was broadly unchanged for corporate bonds. Average transaction sizes were smaller in 2017 compared with 2016 for both the government and corporate bond segments.

Among qualitative indicators, the lack of well-functioning hedging mechanisms was identified as the most important common structural issue that requires attention from regional authorities in both segments. Other structural problems that were identified include the need for a more diversified investor base and better access to transaction funding sources.

Theme Chapter: Foreign and Domestic Investments in Global Bond Markets

The benefits of foreign participation in bond markets have long been known. These include improved liquidity, lower bond yields, and enhanced market efficiency. At the same time, foreign participation fosters international risk transmission by exposing emerging bond markets to global shocks. This dilemma has caught policy makers' attention, especially in those emerging markets with higher rates of foreign participation than others, on how to guide investor behavior to achieve a more desirable investor profile in bond markets.

The theme chapter empirically investigates the determinants of foreign and domestic investors' portfolio decisions in global bond markets. It analyzes and compares the differences in investment preferences between foreign and domestic investors in both developed and emerging bond markets.

Empirical evidence shows that foreign investors chase favorable risk–return profiles, particularly in emerging markets, while domestic participants as a whole are less sensitive to domestic market performance. Greater market openness and sound sovereign ratings attract foreign investors.

This study has policy implications with regard to the benefits of a broad investor base, especially the importance of a more diversified investor base. Emerging bond markets can also benefit from regional integration to broaden the investor base.

Introduction: Bond Yields Largely Up in Emerging East Asia

Yields on 2-year and 10-year local currency (LCY) government bonds in emerging East Asia were largely up between 1 September and 31 October 2017 on the back of healthy global economic growth and tightening global liquidity (**Table A**).[2] The rise in yields in the region tracked the trend in major advanced economies, which saw higher yields during the review period. Bond yields rose the most in the Republic of Korea, where monetary policy tightening is widely expected, and in Hong Kong, China, where yields closely track the United States (US) yield movements.

Yields rose to varying degrees in five of the six Association of Southeast Asian Nations markets included in our assessment. In Malaysia and Thailand, 10-year yields increased slightly. Monetary policy was the catalyst for yield declines in Viet Nam, the only emerging East Asian market that saw declining yields during the review period. Yields fell for 2-year and 10-year government bonds, partially because the State Bank of Vietnam cut the refinancing rate by 25 basis points to 6.25% in July after economic growth in the first half of the year fell far below the 6.7% annual growth target. In the third quarter (Q3) of 2017, however, economic growth rebounded to 7.5% year-on-year (y-o-y), bringing year-to-date growth up to 6.4%. In the People's Republic of China, bond yields rose on the back of the government's ongoing deleveraging efforts as well as robust economic growth.

Table A: Changes in Global Financial Conditions

	2-Year Government Bond (bps)	10-Year Government Bond (bps)	5-Year Credit Default Swap Spread (bps)	Equity Index (%)	FX Rate (%)
Major Advanced Economies					
United States	26	21	–	4.0	–
United Kingdom	28	28	4	0.7	2.6
Japan	1	7	3	9.3	(3.0)
Germany	(2)	(2)	(3)	9.0	(1.8)
Emerging East Asia					
China, People's Rep. of	12	20	(4)	0.8	(1.2)
Hong Kong, China	32	37	–	1.0	0.3
Indonesia	10	10	(6)	2.4	(1.8)
Korea, Rep. of	45	30	12	7.0	0.2
Malaysia	(2)	4	(7)	(1.4)	0.9
Philippines	22	13	3	5.1	(0.8)
Singapore	14	7	–	3.0	(0.4)
Thailand	5	3	(6)	6.4	(0.2)
Viet Nam	(21)	(15)	(7)	6.2	0.1
Select European Markets					
Greece	(54)	(11)	(49)	(7.3)	(1.8)
Ireland	(10)	(10)	(3)	3.9	(1.8)
Italy	(10)	(26)	(21)	4.3	(1.8)
Portugal	(11)	(67)	(49)	5.4	(1.8)
Spain	3	(9)	(2)	1.9	(1.8)

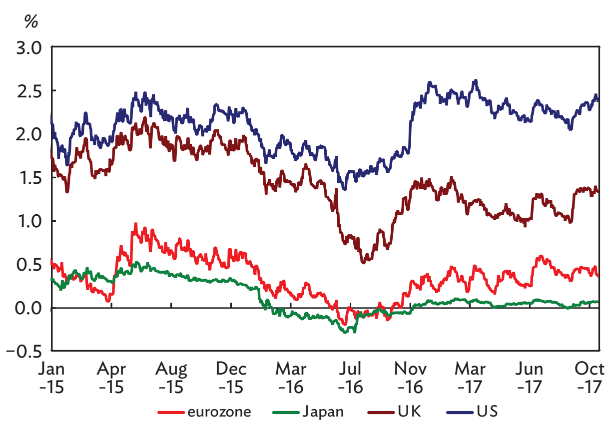
( ) = negative, – = not available, bps = basis points, FX = foreign exchange.
Notes:
1. Data reflect changes between 1 September 2017 and 31 October 2017.
2. A positive (negative) value for the FX rate indicates the appreciation (depreciation) of the local currency against the United States dollar.
Sources: Bloomberg LP and Institute of International Finance.

[2] 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.

Between 1 September and 31 October, 2-year and 10-year government bond yields in major advanced economies climbed as the global economy continued to strengthen, increasing the likelihood of more forceful monetary policy normalization (**Figure A1**). Between April and October, the International Monetary Fund (IMF) raised its 2017 and 2018 global gross domestic product (GDP) growth forecasts by 0.1 percentage point each to 3.6% and 3.7%, respectively. For advanced economies, the IMF upgraded its 2017 growth forecast from 2.0% to 2.2%. The growth forecast for emerging markets was also upgraded from 4.5% to 4.6% for 2017 and from 4.8% to 4.9% for 2018. Between April and September, the Asian Development Bank (ADB) raised its GDP growth forecasts for developing Asia from 5.7% to 5.9% for 2017 and from 5.7% to 5.8% for 2018.[3]

While GDP growth forecasts are being revised upward, inflation forecasts are being lowered. Relative to its April forecast, the IMF cut its October forecast for 2017 consumer price inflation by 0.3 percentage points for advanced economies and 0.5 percentage points for emerging markets (excluding Argentina and Venezuela). For developing Asia, ADB cut its forecast for 2017 consumer price inflation from 3.0% in April to 2.4% in September. Slowing inflation is partly due to soft global commodity prices. The robust growth and subdued inflation make for the most benign global macroeconomic outlook in the post-global financial crisis period. Financial conditions underpinned by strong market sentiment and low volatility add to the optimistic mood.

Figure A1: 10-Year Government Bond Yields in Major Advanced Economies (% per annum)



UK = United Kingdom, US = United States.
Note: Data as of 31 October 2017.
Source: Bloomberg LP.

One key variable looming over the benign global outlook is the course of the US Federal Reserve's monetary policy normalization. How well the world economy and global financial markets adjust to the normalization will determine whether global growth momentum can be sustained. On 20 September, the Federal Reserve left its key policy rate target unchanged but signaled the start of its balance sheet normalization in October. The Federal Reserve has cited robust economic growth and an improving labor market as the reasons for its confidence in beginning balance sheet normalization. In addition, the minutes of the 21 September Federal Reserve meeting released on 11 October indicate that if the US economy remains on track, there is a high probability of another hike in the Federal Reserve's policy rate later this year. The Federal Reserve also believes that although the impact of hurricanes in the US is likely to be negative in the short-term, the economy will continue its upward trend over the medium-term. Meanwhile, the US labor market, which the Federal Reserve watches closely, continues to strengthen. The unemployment rate fell to 4.1% in October. Nonfarm payrolls rose 261,000 in October.

The European Central Bank (ECB) left its monetary policy unchanged on 26 October. It also announced that, beginning in January 2018, it will taper its monthly asset purchases to EUR30 billion monthly. While the reduced monthly asset purchases are expected to run through September, the ECB may make adjustments to the program beyond September as warranted. The monthly asset purchases currently is at EUR60 billion and will be continued up to December 2017. However, the ECB expects to keep the key policy rate at its current level even after the end of its asset purchase program. The ECB recently upgraded its economic growth forecast in September 2017 from the forecast made in June 2017. The ECB now expects the eurozone's GDP to grow by 2.2% in 2017, up from 1.9% in its previous forecast. The forecasts for 2018 and 2019 were left unchanged. The improved growth outlook led to many European markets

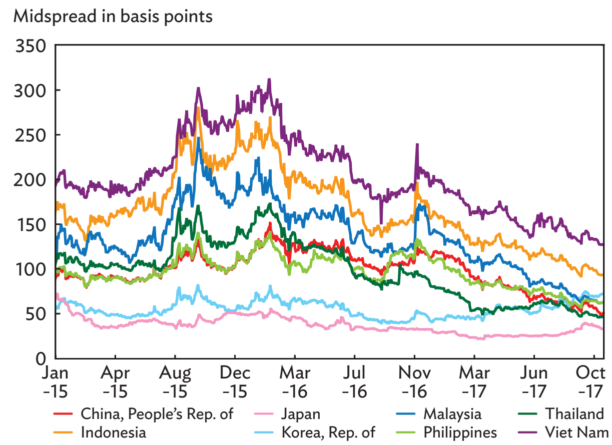
[3] Developing Asia comprises the 45 regional developing member economies of the Asian Development Bank.

seeing improvements in their sovereign credit ratings, which partially contributed to the fall in bond yields in the eurozone (**Figure A2**). Central banks in other major advanced economies that have started monetary policy normalization by hiking policy rates include the Bank of Canada and Bank of England. The Bank of Japan likewise held its policy rate steady and noted that the economy continues to grow strongly, led by the corporate and household sectors.

While global economic growth continues to meet expectations, inflation has been lagging. In the minutes of the Federal Reserve's 21 September meeting some participants expressed concern that the US might not hit the Federal Reserve's inflation target. While consumer price inflation rose to 2.2% y-o-y in September from 1.9% y-o-y in August, core consumer price inflation was unchanged at 1.7% y-o-y. The ECB also reduced its inflation forecast. While 2017's inflation forecast remained at 1.5%, the 2018 forecast was reduced to 1.2% from 1.3% and the 2019 forecast was reduced to 1.5% from 1.6%. However, the ECB expressed confidence that inflation targets would eventually be met over the medium-term.

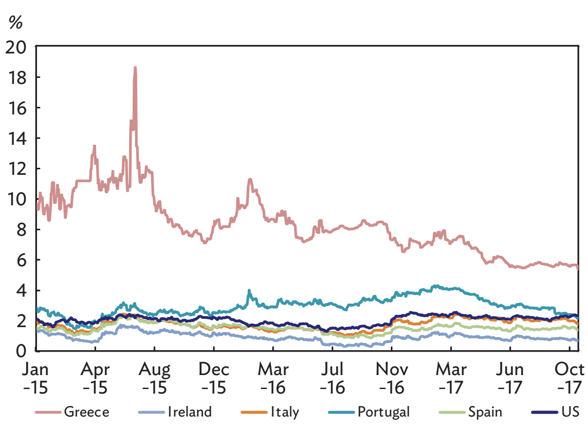
Reflecting the benign global macroeconomic outlook and stable global financial conditions, perceptions of financial risk and measures of volatility have largely declined. Credit default swap spreads trended down during the review period in emerging East Asian markets (**Figure B**) and in European markets (**Figure C**). Even in the few markets where credit default swap spreads widened, the changes were marginal. Alternative measures of financial risk and volatility also improved. The VIX equity index for the US and EMBIG spreads

Figure B: Credit Default Swap Spreads for Select Asian Markets (senior 5-year)



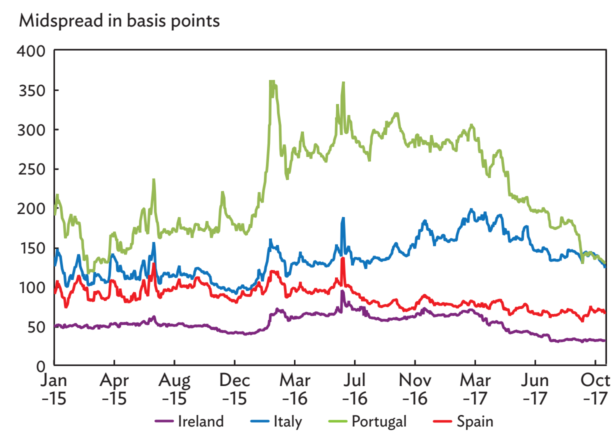
Notes:
1. Based on USD-denominated sovereign bonds.
2. Data as of 31 October 2017.
Source: Bloomberg LP.

Figure A2: 10-Year Government Bond Yields in Select European Markets and the United States (% per annum)



US = United States.
Note: Data as of 31 October 2017.
Source: Bloomberg LP.

Figure C: Credit Default Swap Spreads for Select European Markets (senior 5-year)



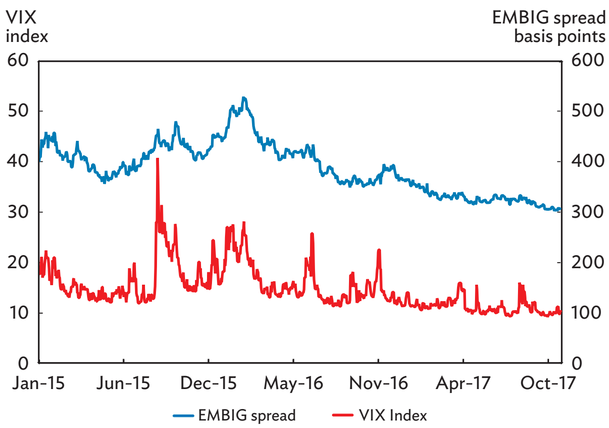
Notes:
1. Based on USD-denominated sovereign bonds.
2. Data as of 31 October 2017.
Source: Bloomberg LP.

for emerging markets declined (**Figure D**), as did the EMBI sovereign stripped spreads for individual emerging East Asian markets (**Figure E**). Most emerging East Asian equity markets rose between 1 September and 31 October, with the Republic of Korea, Thailand, and Viet Nam posting the largest gains (**Figure F**). The only exception to the region's stock market rally was Malaysia, where the market fell by a modest 1.4%.

The region's equity rally, which is part of a global bull market in equities, is fueled by strong macroeconomic fundamentals, low interest rates, and solid corporate earnings (**Box 1**).

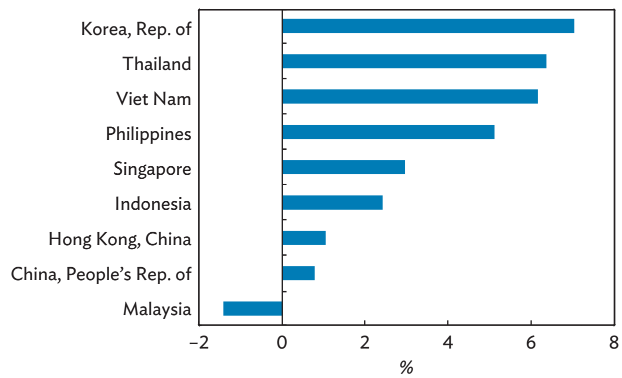
Foreign investors continue to increase their holdings of LCY government bonds in emerging East Asia (**Figure G**). The foreign holdings share in the Indonesian market remained strong at 40.0% at the end of September, buoyed by foreign inflows. Malaysia posted the largest increase in its foreign holdings share, which

Figure D: The United States Equity Volatility and Emerging Market Sovereign Bond Spread



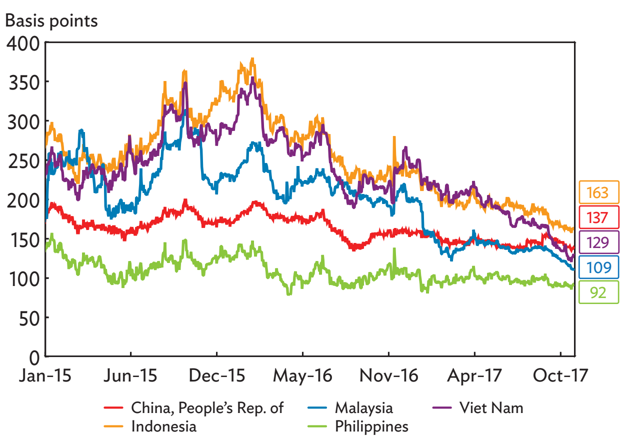
EMBIG = Emerging Markets Bond Index Global, VIX = Chicago Board Options Exchange Volatility Index.
Note: Data as of 31 October 2017.
Source: Bloomberg LP.

Figure F: Changes in Equity Indexes in Emerging East Asia



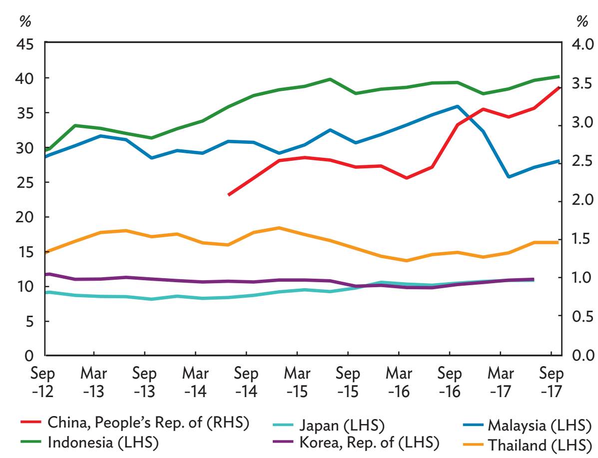
Note: Changes between 1 September 2017 and 31 October 2017.
Source: Bloomberg LP.

Figure E: JP Morgan Emerging Markets Bond Index Sovereign Stripped Spreads



Notes:
1. Based on the United States dollar-denominated sovereign bonds.
2. Data as of 31 October 2017.
Source: Bloomberg LP.

Figure G: Foreign Holdings of Local Currency Government Bonds in Select Asian Economies (% of total)



LHS = left-hand side, RHS = right-hand side.
Note: Data as of 30 September 2017 except for Japan and the Republic of Korea (30 June 2017).
Source: *AsianBondsOnline*.

Box 1: The Global Equity Price Surge

Stock markets around the world have enjoyed a forceful, sustained rally since their recovery from the global financial crisis (**Figure B1.1a**). In the last 2 years, equity markets in Asia, the eurozone, and the United States (US) have been on stellar runs. On 11 October, the global bellwether S&P 500 crossed the 2,550-point milestone to reach an all-time high of 2,555. Meanwhile, the Euro Stoxx 50 has been trading at its highest level in the last 2 years and the Nikkei Index is enjoying a 20-year record high.

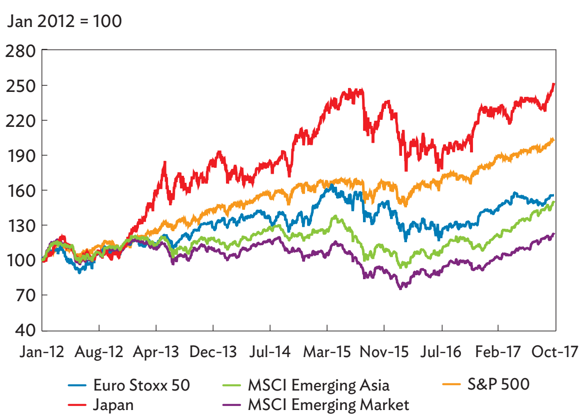
Emerging markets are also participating in the global bull run. The MSCI Emerging Markets Index, which covers 24 emerging economies and accounts for 10% of global market capitalization, continues to post gains.[a] In Asia, the MSCI Emerging Markets Asia Index is climbing to record highs. Through 16 October, the index had risen 36% since the start of the year, reflecting large gains in stock markets across emerging Asia (**Figure B1.1b**).

Furthermore, none of the major advanced-economy stock market indexes have suffered a pullback of 3% or more in 479 days, a feat that has not been seen for quite some time.

Drivers of the recent equity boom

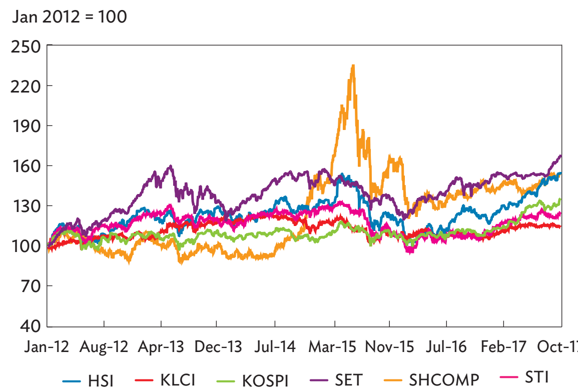
What explains this latest historic run-up in global equity markets? Analysts agree that the markets' exuberance is backed by a combination of solid economic growth and better corporate earnings. Other contributing factors include low oil prices, low inflation, and very low interest rates.

Figure B1.1a: Major Global Stock Market Indexes



MSCI = Morgan Stanley Capital International, S&P 500 = Standard and Poor's 500.
Note: Data as of 16 October 2017.
Source: Bloomberg LP (accessed 17 October 2017).

Figure B1.1b: Selected Stock Market Indexes, Emerging Asia



HSI = Hang Seng Index, KLCI = Kuala Lumpur Composite Index, KOSPI = Korea Composite Stock Price Index, SET = Stock Exchange of Thailand, SHCOMP = Shanghai Stock Exchange Composite Index, STI = Straits Times Index.
Note: Data as of 16 October 2017.
Source: Bloomberg LP (accessed 17 October 2017).

Strong macroeconomic fundamentals. The world economy is finally showing signs of more robust and sustained growth momentum. For the first time since the global financial crisis, the major industrial economies are growing solidly in a synchronized way. The eurozone, Japan, and the US are all exhibiting firmer signs of recovery. As a result, investor confidence in the global economic outlook is rising.

For emerging Asia, strong domestic consumption and investment are boosting growth. While exports continue to be an important driver of growth in the region, domestic demand has assumed a larger role in growth after the external environment deteriorated in the wake of the global financial crisis. Expansionary fiscal and monetary policies have further supported domestic demand and contributed to ample liquidity. Emerging Asia continues to lead the world in economic growth by a wide margin.[b] Furthermore, the region enjoys macroeconomic stability, as evidenced by low inflation; healthy current account balances; and huge amounts of foreign exchange reserves.

[a] For more details on MSCI Emerging Markets, see https://www.msci.com/emerging-markets. Both MSCI Emerging Markets (29.6%) and MSCI Emerging Markets Asia (40.8%) weigh stocks from the People's Republic of China with the single largest share in the respective index.

[b] The Asian Development Bank recently revised its economic growth forecast for developing Asia upward to 5.9% in 2017 and 5.8% in 2018.

continued on next page

Box 1: The Global Equity Price Surge *continued*

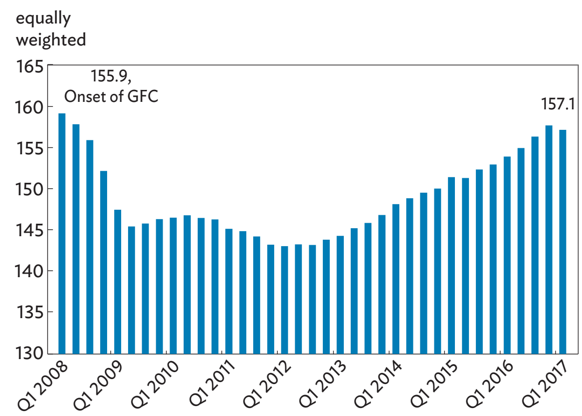
There were concerns that the US Federal Reserve's monetary normalization program would siphon off funds from emerging markets. However, the gradual rise in the US policy rate has been accompanied by clear signaling from the Federal Reserve. As a result, the monetary tightening has been well received by the markets. While this does not necessarily mean that other major economies will immediately follow suit, many central banks have made a first move. The Bank of Canada and Bank of England have hiked policy rates. The European Central Bank will also start tapering security purchases in 2018. Since many advanced economies such as the eurozone and Japan are still in a recovery phase, it is unlikely that these central banks will reverse their balance sheet holdings in the short-term to support growth. The gradual turn of monetary policies in major economies will allow emerging markets more time to prepare for global monetary tightening.[c]

Low interest rates. The unprecedented era of low interest rates, ushered in with the launch of the Federal Reserve's quantitative easing program in 2008, eventually cascaded to the rest of the global economy. Central banks across the world, including those in emerging Asia, lowered policy rates to support the recovery from the global financial crisis. Advanced-economy central banks, led by the Federal Reserve, went beyond conventional monetary policy and added trillions of dollars worth of debt securities to their balance sheets to protect financial stability and support economic growth.

The resulting surge in global liquidity depressed returns on government bond yields, pushing investors toward other assets, such as equities and real estate, in search of higher returns. For example, by the first quarter of 2017, the International Monetary Fund's global house price index had almost returned to its pre-global financial crisis peak (**Figure B1.2**).

The Federal Reserve's ongoing monetary policy normalization may ultimately tighten global liquidity conditions as the central bank raises interest rates and unwinds the massive amounts of debt securities it acquired during three rounds of quantitative easing. However, as mentioned above, the recent tightening of the US monetary policy rate has been gradual, transparent, and clearly communicated to the markets. Thus far the tightening has not destabilized global financial markets and fears of another "Taper Tantrum"—as the volatility visited upon the markets in May 2013 by then-Federal Reserve Chairman Ben Bernanke's hint of tapering security purchases—are receding.

Figure B1.2: International Monetary Fund's Global House Price Index



GFC = global financial crisis, Q1 = first quarter.
Source: International Monetary Fund's Global Housing Watch.

Given the weak performance of inflation, the European Central Bank and the Bank of Japan are unlikely to pursue tightening in the short-term. Furthermore, emerging Asian economies have largely refrained from following the Federal Reserve's lead. Meanwhile, central banks in India, Indonesia, and Viet Nam have even cut interest rates to boost growth against the backdrop of relatively subdued inflation.

Solid corporate earnings. Healthy economic growth buttressed by robust domestic demand has translated into solid revenues for firms across emerging Asia. Subdued global commodity prices have limited the growth of input costs and thus contributed to strong profit margins. Furthermore, low interest rates mean that the cost of servicing debt is still relatively manageable for most Asian firms, although those with high levels of dollar-denominated debt need to guard against the risk of US dollar appreciation resulting from the Federal Reserve's policy tightening. The combination of healthy revenue growth and limited input cost growth is translating into improved corporate earnings.

A strong rally in the information technology sector has been another key contributor to the broader equity surge both globally and regionally. Five technology giants—Facebook, Apple, Amazon, Netflix, and Google Alphabet—have accounted for the bulk of the sector's innovation in recent years. Their stocks have risen by an average of 68% in the last

[c] For more details, see Asian Development Bank. 2016. *Asia Bond Monitor November 2016*. Manila.

continued on next page

Box 1: The Global Equity Price Surge *continued*

2 years. Across the Pacific, the stocks of technology giants in the People's Republic of China, such as Alibaba Group and Tencent, have also been on a bull run, with average growth of 145%. The Republic of Korea's global technology giant Samsung Electronics earned record-high profits in both the second and third quarters of 2017. In the third quarter, the company earned around USD9.7 billion on net profit of USD54.2 billion, while year-on-year sales grew about 29% and operating profits soared about 179%.

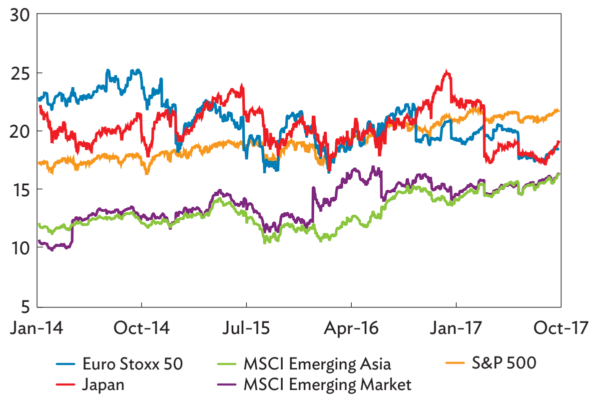
Does the equity boom pose a threat to the region's financial stability?

The surge in emerging Asia's stock and housing markets is fueling concerns over the possibility of an asset price bubble. The anxiety is heightened by the gradual tightening of global liquidity, which raises financing costs and can trigger capital outflows. However, in recent years, the region's authorities have put in place prudential regulations and supervisory policies to better protect financial stability. For example, in housing markets, authorities in many economies are experimenting with macroprudential regulations to prevent excessive leverage and speculation.

The price–earnings ratio (P/E ratio) is a widely used and broad, first-order indicator that gives a general idea about whether equity prices are consistent with the underlying fundamentals. The basic intuition is that a P/E ratio that is too high is indicative of a possible bubble. However, there is no consensus on what is too high or too low, and the most we can do is compare a market's average P/E ratio across time. By this measure, the average market P/E ratio is on the rise in all major industrial economies and in emerging Asian economies (**Figure B1.3a**). We also compared the average market P/E ratio for two periods of an equity price surge: January 2005–August 2008 (Period 1) and January 2014–mid-October 2017 (Period 2) (**Figure B1.3b**). Period 1 refers to the period immediately preceding the global financial crisis while Period 2 refers to the current equity boom. For the eurozone and US, the average P/E ratio is higher in the more recent period, while the P/E ratio in Japan is virtually the same in both periods. Within emerging Asia, the average P/E ratios of the Republic of Korea and most Southeast Asian economies are higher in Period 2 than in Period 1, while the opposite is true in the People's Republic of China; Hong Kong, China; and Viet Nam.

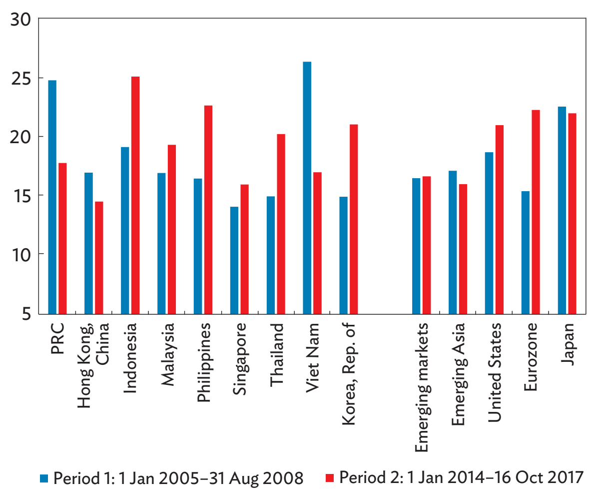
There are also fears of sudden and sharp price corrections that could hurt the region's equity markets. However, a quick look at volatility indicators provides some cause for optimism.

Figure B1.3a: Price-Earnings Ratio for Selected Stock Indexes



MSCI = Morgan Stanley Capital International, S&P 500 = Standard and Poor's 500.
Note: Data as of 16 October 2017.
Source: Bloomberg LP (accessed 17 October 2017).

Figure B1.3b: Average Price-Earnings Ratios by Economy and Region



PRC = People's Republic of China.
Source: Bloomberg LP.

The Chicago Board Options Exchange Volatility Index, known as the VIX Index, is now at an historical low, implying low global equity market volatility (**Figure B1.4a**). The standard deviation of the year-on-year growth of stock market indexes in advanced economies and emerging Asia, another index of volatility, shows lower volatility in the current period than in the pre-global financial crisis period (**Figure B1.4b**).

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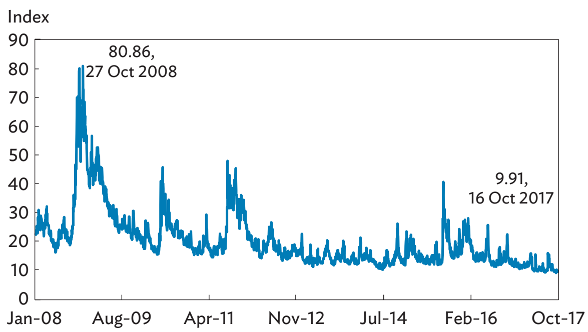
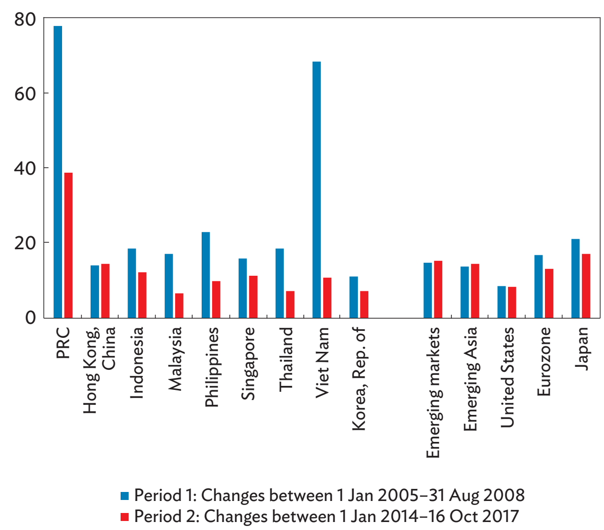
Box 1: The Global Equity Price Surge *continued*

Figure B1.4a: VIX Volatility Index



VIX = Chicago Board Options Exchange Volatility Index.
Note: Data as of 16 October 2017.
Source: Bloomberg LP (accessed 17 October 2017).

Figure B1.4b: Comparison of Volatility by Economy and Region



PRC = People's Republic of China.
Source: Bloomberg LP (accessed 17 October 2017).

Nevertheless, it is possible that some potential risks have not been fully incorporated into the market volatility indicators.

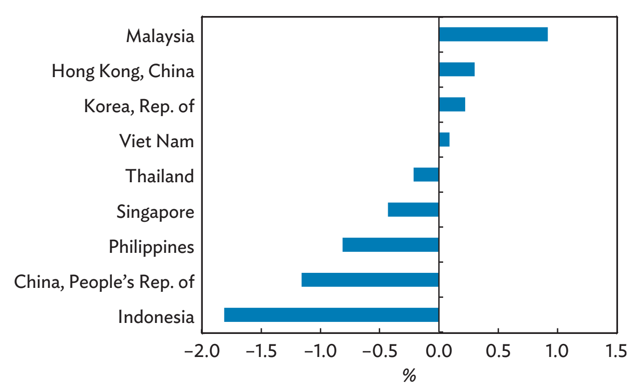
Emerging Asia's economies and firms are presently in good shape. The region's equity rally reflects strong macroeconomic fundamentals and healthy corporate earnings. Given the positive outlook, the bull run in the region's equity markets is likely to continue in the short-term. However, the generally benign scenario is no cause for complacency since some risks loom on the horizon. In particular, the Federal Reserve's ongoing monetary policy normalization could tighten global liquidity conditions, putting downward pressure on asset prices beyond the short-term.

rose by nearly 1 percentage point to reach 27.9% at the end of September on improving investor sentiment.

Most emerging East Asian currencies depreciated between 1 September and 31 October. The magnitude of price changes was modest (**Figure H**). The Malaysian ringgit appreciated the most, driven by positive investor sentiment, but the gain was still limited to 0.9%. Meanwhile, the Indonesian rupiah fell by 1.8% due to interest rate cuts and concerns about the effect of the Federal Reserve's ongoing monetary policy tightening.

Overall, emerging East Asian local currency bond markets face a benign environment characterized by strong economic growth and stable financial conditions. One byproduct of the robust economic fundamentals are the healthy sovereign credit ratings for the region's governments. For example, strong fundamentals in Indonesia supported the recent upgrading of Indonesian

Figure H: Changes in the United States Dollar Value per Unit of Local Currency



Notes:
1. Changes between 1 September 2017 and 31 October 2017.
2. A positive (negative) value for the foreign exchange rate indicates the appreciation (depreciation) of the local currency against the United States dollar.
Source: Bloomberg LP.

government bonds to investment grade. Sovereign ratings matter because they tend to act as a benchmark as well as a soft ceiling on the ratings of nonsovereign borrowers. A deterioration of the sovereign rating has been found to have a significant impact on financial markets and nonsovereign borrowers' economic activities by raising their borrowing costs, which constrains investments and business activities (**Box 2**).

Meanwhile, a number of risks to financial stability loom on the horizon. Longevity risk, or the risk that people will live longer than expected, is growing in emerging East Asia. Sustained economic growth has dramatically improved living standards, including better nutrition and access to health care, and significantly raised life expectancy throughout the region. Coping with longevity risk requires huge amounts of capital and hedging instruments, which capital markets can provide. The lack of correlation between longevity and equity and bond returns further strengthens the case for capital market solutions to longevity risk (**Box 3**). In advanced economies with well-developed financial systems, capital markets are already beginning to play a role.

Box 2: Sovereign Ceiling in International Bond Markets

Prior to 1997, rating agencies followed a policy specifying that the highest rating granted to nonsovereign debt issuers in a sovereign would be the sovereign rating, which has come to be known as the sovereign ceiling. This practice arose from the possible risk of capital controls affecting nonsovereign issuers in case of a sovereign default.[a] Since S&P Global's first relaxation of the sovereign ceiling policy in April 1997, when it rated more than 10 Argentinean firms higher than the sovereign, there have been other cases of the bonds of nonsovereign borrowers being traded at a lower spread than the debt of the government in the economy where they domicile (Durbin and Ng 2005).[b]

Despite the lifting of the sovereign ceiling policy, empirical evidence shows that the sovereign rating is still binding on nonsovereign borrower credit ratings. Borensztein, Cowan, and Valenzuela (2013) find that the sovereign ceiling remains a significant constraint on corporation ratings.[c] This evidence is consistent with credit rating agencies' criteria. According to the S&P Global ratings framework revised in 2016, nonsovereign entities may earn a rating higher than their market's sovereign rating by up to two to four notches, depending on the sensitivity of their sectoral exposure to sovereign risks.[d]

Credit ratings matter to issuers. The International Monetary Fund indicates that credit ratings have a significant impact on market prices, especially in the case of a rating downgrade.[e] Almeida et al. show that due to an implicit sovereign ceiling, the credit rating serves as a channel that transfers a sovereign downgrade to real economic activities such as corporate investment decisions, the cost of capital, and capital structures.[f]

Most evidence looks at how the soft practice of a sovereign ceiling may influence bond issuers domiciled in the sovereign. However, the sovereign ceiling also applies to cross-border financing activities. This research aims to extend existing knowledge by examining whether the light version of the sovereign ceiling not only applies to local firms within a sovereign, but also to multinational organizations' cross-border financing in local currency bond markets. This study and future studies try to address the following research questions: Does the sovereign ceiling influence foreign bond issuers in local currency bond markets? If so, to what extent are multinational bond issuers affected? What factors might contribute to the adoption of the sovereign ceiling practice? How does the sovereign ceiling influence the cross-border issuer's economic activities?

In this discussion box, we use six AAA-rated multilateral development banks' bond issuances to illustrate the sovereign ceiling in actual practice in global bond markets.[g] We consider local currency debt securities issued onshore

[a] S&P Global. 1997. Less Credit Risk for Borrowers in Dollarized Economies. *Credit Week*. 30 April.

[b] Durbin, E., and D. Ng. 2005. The Sovereign Ceiling and Emerging Market Corporate Bond Spreads. *Journal of International Money and Finance*. 24 (2005): pp. 631–49.

[c] Borensztein, E., K. Cowan, and P. Valenzuela. 2013. Sovereign Ceilings "Lite"? The Impact of Sovereign Ratings on Corporate Ratings. *Journal of Banking and Finance*. 37 (2011): pp. 4014–24.

[d] S&P Global. 2016. Ratings Above the Sovereign—Corporate and Government Ratings: Methodology and Assumptions. *Ratings Direct*. 26 October.

[e] See chapter 3 of International Monetary Fund. 2010. *Global Financial Stability Report 2010*. https://www.imf.org/external/pubs/ft/gfsr/2010/02/pdf/chap3.pdf

[f] Almeida, H., I. Cunha, M. Ferreira, and F. Restrepo. 2017. The Real Effects of Credit Ratings: The Sovereign Ceiling Channel. *The Journal of Finance*. 72 (2011): pp. 249–90.

[g] Issuers include the African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, European Investment Bank, Inter-American Development Bank, and International Bank for Reconstruction and Development.

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Box 2: Sovereign Ceiling in International Bond Markets *continued*

by the six multilateral development banks between 2002 and 2016.[h] To make these debt instruments comparable with local government debt in the same sovereign, only fixed-rate debt securities that do not carry any option features, such as puttable and callable clauses, are used in the sample. The two variables of interest are the coupon rate and yield-to-maturity at issuance. To ensure that these debt instruments are issued and traded onshore, the samples are further limited to the domestic market.[i] This screening leaves a sample of 12 debt issuances (**Table B2.1**).[j]

Table B2.1 shows that in the onshore local currency bond markets of developed economies, after controlling maturity and issuance time, AAA-rated multilateral development banks universally finance at a higher cost than local governments, in the form of a higher coupon rate or yield-to-maturity, regardless of the sovereign rating of the local government. Moreover, among the six securities that were issued in India that were rated BBB–, only three securities issued by the AAA-rated multilateral development banks enjoyed lower financing costs, while the remaining three securities were subject to a higher coupon rate or yield-to-maturity. This evidence supports the existence of the sovereign ceiling practice in onshore local currency markets.

To get a more comprehensive picture of the sovereign ceiling practice in local currency markets, **Table B2.2** produces a similar summary of debt securities issued by multilateral development banks in offshore local currency bond markets at around the same time as a comparison group. The table shows that for developed economies, the sovereign ceiling practice applies even in offshore local currency bond markets; controlling for maturity, AAA-rated multilateral development banks borrow at a higher cost than the local government regardless of their credit rating. Interestingly, in the case of India, multilateral development banks enjoy lower financing costs than the government. While a larger sample is required for a more robust conclusion, Table B2.2 suggests a possible difference between developed and emerging markets in the adoption of the sovereign ceiling in offshore local currency bond markets. Further research would shed more light on this issue.

Table B2.1: Financing Costs of AAA-Rated MDBs in Selected Onshore LCY Bond Markets

Onshore Market	Issuance Currency	Issue Date	Maturity Date	S&P LCY Sovereign Rating	Multinational Development Bank		Market-Middle Yield of Government Bonds	Government New Issuance	
					Coupon	Yield at Issue		Coupon	Yield at Issuance
Australia	AUD	11/24/2006	5/24/2012	AAA	6	6.0125	5.7040[a]	–	–
India	INR	9/30/2014	10/20/2024	BBB–	7.97	7.97	8.514	8.4	8.4625
India	INR	9/24/2014	10/20/2032	BBB–	8.88	8.88	–	8.32	8.6589
India	INR	9/30/2014	10/20/2019	BBB–	8	8	8.556	–	–
India	INR	9/24/2014	10/20/2030	BBB–	8.88	8.88	–	9.2	8.6984
India	INR	9/24/2014	10/20/2028	BBB–	8.88	8.88	8.615	8.6	8.6264
India	INR	9/24/2014	10/20/2027	BBB–	8.88	8.88	8.743	–	–
Japan	JPY	6/7/2010	6/5/2020	AA	1.29	1.29	1.231		
Japan	JPY	7/15/2010	7/15/2020	AA	1.165	1.165	1.09	1.1	1.116
New Zealand	NZD	2/19/2010	2/19/2013	AAA	5	4.965	4.619	–	–
United States	USD	9/29/2016	10/24/2017	AA+	0.748	0.748	0.5701[b]	–	–
United States	USD	3/18/2016	1/22/2019	AA+	1.26	1.26	1.0000[c]	1	–

LCY = local currency, MDB = multinational development bank.
[a] Average of market-middle yields on 5-year and 6-year government bonds.
[b] Market-Middle yield on 1-year government bonds, while the middle yield on 2-year government bonds on the same day is 0.7336.
[c] Market-Middle yield on 3-year government bonds.
Notes: Market-middle yields of government bonds are middle yields on government bonds trading in the secondary markets with the same (or closest) maturity on the issue date. Government new issuance bonds use the coupon and yield at issuance of government bonds with the same maturity issued in the same month of the issue date.
Source: Bloomberg LP.

[h] Data are collected from Bloomberg LP.
[i] Some instruments labeled as domestic but traded in offshore exchanges are excluded. Instruments labeled as the United States domestic, samurai, and Australian (exchanges being in Australia) are included.
[j] This small sample is largely constrained by the availability of bond issuance data and sample selection criteria.

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Box 2: Sovereign Ceiling in International Bond Markets *continued*

Table B2.2: Financing Costs of AAA-Rated MDBs in Selected Offshore LCY Bond Markets

Onshore Market	Issuance Currency	Issue Date	Maturity Date	S&P LCY Sovereign Rating	Multinational Development Bank		Market-Middle Yield of Government Bonds	Government New Issuance	
					Coupon	Yield at Issue		Coupon	Yield at Issuance
Australia	AUD	11/21/2006	5/21/2010	AAA	6.125	6.14	5.9005[a]	–	–
India	INR	9/3/2014	3/3/2016	BBB–	6	6.1	8.4590[b]	–	–
India	INR	9/5/2014	9/5/2017	BBB–	6	5.584	8.461	–	–
Japan	JPY	1/26/2006	1/26/2026	AA–	1.9	1.959	1.514	1.4	1.42
New Zealand	NZD	3/19/2010	3/19/2015	AAA	5.375	5.385	5.11	–	–
United States	USD	9/20/2016	9/20/2019	AA+	1.125	1.161	0.9149	0.875	–
United States	USD	3/18/2016	3/16/2018	AA+	1.06	1.06	0.8353	–	–

LCY = local currency, MDB = multinational development bank.
[a] Average of market-middle yields on 3-year and 4-year government bonds.
[b] Average of market-middle yields on 2-year and 3-year government bonds.
Notes: Market-middle yields of government bonds are middle yields on government bonds trading in the secondary markets with the same (or closest) maturity on the issue date. Government new issuance bonds use the coupon and yield at issuance of government bonds with the same maturity issued in the same month of the issue date.
Source: Bloomberg LP.

Box 3: Coping with Longevity Risk (II)—Developing the Longevity Financial Market

Longevity risk—the risk that people will live longer than expected—is a paramount topic in today's financial markets. Social insurance systems, pension plans, insurance providers, and individuals all have significant longevity exposure. According to an estimate by the World Economic Forum, the total pension savings deficit for the Australia, Canada, the People's Republic of China, India, Japan, the Netherlands, the United Kingdom, and the United States (US) will reach USD400 trillion by 2050.[a] The development of an institutional market for hedging instruments is a key component in managing longevity risk. In line with the conceptual solution developed by Menachem Brenner and Meir Sokoler, this box discusses the rationale of using financial markets as an effective source of risk-taking capacity in dealing with longevity risk.[b]

In most countries, insurers and reinsurers not only face capital costs for longevity exposure, they also need to meet regulatory capital requirements for this risk. Countries such as the Netherlands and the United Kingdom are subject to Solvency II, and analogous transactions have already been executed in the derivatives and reinsurance markets that could have been embedded within debt instruments. In the US, where there is currently no analogous regulatory charge for longevity, the demand from insurers and reinsurers exposed to US longevity risk for economic capital hedges has been slower to develop; however, it will likely develop into a much larger market eventually.[c]

Economic capital hedges are the second level of the value chain (Michaelson and Mulholland 2015), while the first level is where pension plans execute "buy-ins" and "buy-outs" with insurers and reinsurers to transfer obligations to retirees, particularly under corporate pension plans.[d] Thus far, there have been more than USD67 billion of US pension liabilities transferred, although this is a small fraction of the overall obligations under US plans.[e]

Just as with the development of the broader insurance-linked securities market, capital-market capacities have already begun to be sourced to assume significant longevity exposure. Globally, the amount of exposure to longevity risk from pension plans, insurance companies, reinsurers, and social insurance programs dwarfs the amount of capital available

[a] World Economic Forum. 2017. *We'll Live to 100, How Can We Afford It?* http://www3.weforum.org/docs/WEF_White_Paper_We_Will_Live_to_100.pdf
[b] M. Brenner and M. Sokoler. 2017. Coping with Longevity Risk—A Conceptual Solution. *Asian Bond Monitor, September 2017*. Manila: Asian Development Bank.
[c] A committee formed by the National Association of Insurance Commissioners (NAIC) is examining this issue.
[d] A. Michaelson and J. Mulholland. 2015. Strategy for Increasing the Global Capacity for Longevity Risk Transfer: Developing Transactions that Attract Capital Markets Investors. *Journal of Alternative Investments*. 2015 (1). pp. 28–37. Abstract available at http://www.iijournals.com/doi/abs/10.3905/sp.2015.2015.1.028?journalCode=sp&
[e] Prudential Financial. *The Pension Risk Transfer Market at $260 Billion*. http://pensionrisk.prudential.com/insights/prt-market-at-$260-billion.php

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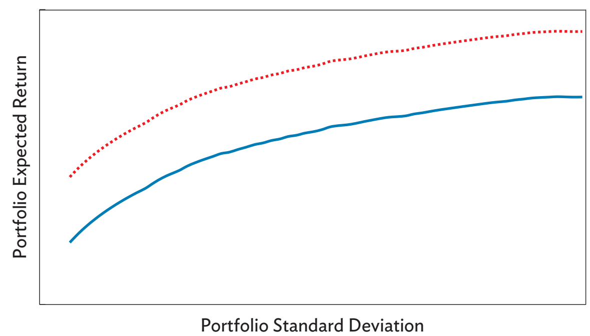
Box 3: Coping with Longevity Risk (II)—Developing the Longevity Financial Market *continued*

to assume these risks in the insurance and reinsurance industries. As a result, capital markets have become a viable source of risk-taking capacity for commoditized longevity risks by taking advantage of the lack of correlation between longevity and other asset class returns such as equities and fixed-income securities.

By assuming uncorrelated longevity risk, institutional investors push out their efficient frontier and increase their expected returns for a defined amount of portfolio risk. Canabarro (1998) exhibits mathematical proof that, even when the risk premia are small, if a small portion of the portfolio (e.g., 10%) is allocated to a lightly correlated asset class, the impact of the second and higher moments of the return of the lightly correlated asset class is substantially muted in terms of the impact on the second and higher moments around the mean of the overall portfolio's returns (**Figure B3.1**).[f]

Figure B3.1: Longevity Investment Shifts the Efficient Frontier



Source: Authors' illustration.

This correlation benefit makes capital markets the most efficient risk taker for commoditized insurance risks. In the broader insurance-linked securities market, capital markets already are the cheapest source of capacity for commoditized-property catastrophe risk (e.g., hurricanes and earthquakes), and they are the primary source of retrocessional capacity for many reinsurers. For well-structured commoditized longevity risks, the capital markets can also serve as the most efficient source of risk-taking capital.

Longevity bonds can help insurers and reinsurers package longevity risk for the broadest applicability for capital market risk takers. The introduction of longevity bonds that embed the derivatives form of execution into a note may be issued by institutions assisting in the development of the longevity market, similar to the manner in which other structured notes are brought to market.

[f] E. Canabarro. 1998. *Analyzing Insurance Linked Securities, Appendix II*. Goldman Sachs Quantitative Research Group. Abstract available at http://www.emeraldinsight.com/doi/abs/10.1108/eb043445

The biggest risk to emerging East Asia continues to be the ongoing normalization of monetary policy by the Federal Reserve. The normalization consists of interest rate hikes and balance sheet normalization, with the latter referring to the unwinding of the massive amount of debt securities that the Federal Reserve added to its balance sheet during three rounds of unconventional monetary policy known as quantitative easing. With respect to the normalization of conventional policy, or interest rate changes, the Federal Reserve has already raised its policy rate four times since December 2015. There is a high probability of another hike before the end of 2017. With respect to unwinding quantitative easing, the Federal Reserve announced on 20 September that it would begin to unwind its debt securities holdings in October. Initially, the unwinding will take the form of reducing the reinvestment of principal payments. In the past, such reinvestment kept the size of the securities portfolio stable.

These two related but different components of US monetary policy normalization are likely to have different impacts. Analysis in ADB's *Asian Development Outlook 2017 Update* finds that the normalization of the Federal Reserve's balance sheet may have a more direct impact on global financial and liquidity conditions than policy rate hikes. The rate hikes, which directly affect the price of money, push up short-term market interest rates. Balance sheet normalization, on the other hand, shrinks the supply of money and, all other things being equal, lowers long-term bond prices, which can affect long-term interest rates. Historical trends suggest that the yield on the 1-year US Treasury bond closely tracks policy rate adjustments, but this is not necessarily true of the yield on the 10-year US Treasury bond. Moreover, the Federal Reserve's announcement in May 2013 that it would begin tapering its asset purchases—the spark for the so-called "Taper Tantrum"—caused the 10-year Treasury bond yield to surge but did not affect the 1-year Treasury bond yield. These patterns suggest that the Federal Reserve's asset purchasing plans influenced the long-term benchmark interest rate more than the short-term benchmark interest rate, as expected.

The gradual, transparent, and predictable nature of the Federal Reserve's balance sheet normalization seems to explain why its most recent announcement had only limited impact on emerging Asia. However, the signal of a tightening global liquidity stance is getting louder and clearer. Further, economic recovery will spur monetary policy normalization in the eurozone over the long-term. It is therefore necessary for policy makers in emerging Asia to monitor possibly excessive leverage in regional economies and strengthen their financial positions ahead of the long-discussed return of more normal monetary conditions.

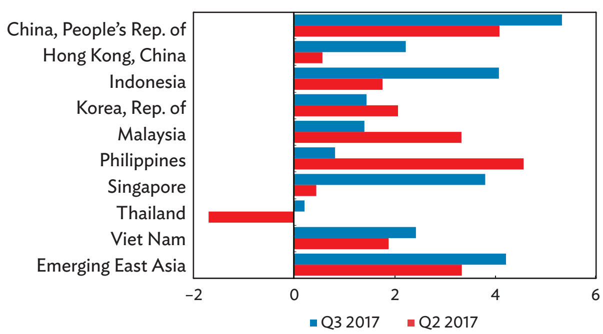
Bond Market Developments in the Third Quarter of 2017

Size and Composition

Most local currency bond markets in emerging East Asia saw faster growth in the third quarter of 2017 as total outstanding bonds reached USD11.6 trillion at the end of September.

Emerging East Asia's local currency (LCY) bond market continued to expand in the third quarter (Q3) of 2017, with the overall market size climbing to USD11.6 trillion at the end of September.[4] Growth in the region's bond markets increased to 4.2% quarter-on-quarter (q-o-q) in Q3 2017 from the 3.3% q-o-q hike posted in the second quarter (Q2) of 2017 (**Figure 1a**). The People's Republic of China (PRC) continued to drive the region's bond market growth during the review period. All markets posted positive q-o-q expansions in Q3 2017. However, q-o-q growth moderated in the Republic of Korea, Malaysia, and the Philippines.

Figure 1a: Growth of Local Currency Bond Markets in the Second and Third Quarters of 2017 (q-o-q, %)



q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter.
Notes:
1. Calculated using data from national sources.
2. Growth rates are calculated from local currency base and do not include currency effects.
3. Emerging East Asia growth figures are based on 30 September 2017 currency exchange rates and do not include currency effects.
4. For Hong Kong, China, Q3 2017 corporate bonds outstanding are based on *AsianBondsOnline* estimates. For the Republic of Korea, Q3 2017 government bonds outstanding are as of August 2017. For Singapore, corporate bonds outstanding are based on *AsianBondsOnline* estimates. For Thailand, Q3 2017 government bonds outstanding are based on *AsianBondsOnline* estimates and corporate bonds outstanding are as of August 2017.

Sources: People's Republic of China (*ChinaBond* and *Wind Information*); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Bank Indonesia; Directorate General of Budget Financing and Risk Management, Ministry of Finance; and Indonesia Stock Exchange); Republic of Korea (*EDAILY BondWeb* and the Bank of Korea); Malaysia (Bank Negara Malaysia); Philippines (Bureau of the Treasury and Bloomberg LP); Singapore (Monetary Authority of Singapore, Singapore Government Securities, and Bloomberg LP); Thailand (Bank of Thailand); and Viet Nam (Bloomberg LP and Vietnam Bond Market Association).

The PRC maintained its status as the largest LCY bond market in emerging East Asia. Its outstanding bonds of USD8,221 billion at the end of September accounted for 71.0% of the region's aggregate bond stock, rising from a share of 69.9% at the end of June. Despite the government's continued deleveraging efforts, the PRC's LCY bond market expanded by a much faster pace of 5.3% q-o-q in Q3 2017 versus 4.1% q-o-q in the prior quarter. Much of the growth this quarter stemmed from increases in the stock of government bonds, which was driven by increases in local government bonds as municipalities continue to refinance existing obligations and issue new bonds. Local government bonds outstanding in the PRC grew 12.0% q-o-q as local governments sought to fill the annual quotas given to them by the central government. The PRC's corporate bond market also rebounded with growth of 3.3% q-o-q after declining 0.1% q-o-q in the prior quarter.

At the end of September, the Republic of Korea's LCY bond market reached a size of USD1,894 billion. Growth slipped to 1.4% q-o-q in Q3 2017, following a 2.1% q-o-q expansion in Q2 2017, due to a decline in the volume of new issuance during the review period. The q-o-q growth of the market was broadly balanced between the government and corporate bond segments. Growth in government bonds came largely from increases in the stock of Korea Treasury Bonds (KTBs). However, the government's issuance volume in Q3 2017 saw a decline in line with its frontloading policy in the first half of the year. Corporate bonds outstanding also climbed at the end of September compared with the previous quarter.

The LCY bond market in Thailand reached a size of USD330 billion at the end of September. Growth, however, was marginal at 0.2% q-o-q in Q3 2017 due to less issuance. Much of the growth resulted from increases in the stock of Treasury bills and bonds, and

[4] 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.

marginal gains in state-owned enterprise bonds and corporate bonds. The decline in the stock of central bank bonds capped the overall bond market growth. The Bank of Thailand continued to limit issuance of short-term bills as part of measures to manage the Thai baht's strong appreciation. Redemptions of Bank of Thailand instruments exceeded new issuance and resulted in a significant decline in the aggregate stock of central bank bonds during the review period.

In Malaysia, total LCY bonds outstanding reached USD299 billion at the end of September, with growth largely driven by the corporate bond segment. Overall, growth moderated to 1.4% q-o-q in Q3 2017 from 3.3% q-o-q in the preceding quarter as Bank Negara Malaysia reduced its issuance of central bank bills. Much of the growth during the review period came from increases in the stock of corporate bonds.

Malaysia continues to account for the largest *sukuk* (Islamic bond) market in emerging East Asia. At the end of September, 58% of its LCY bonds were structured following shariah principles. Nearly three-fourths of Malaysia's corporate bond segment comprises *sukuk*, while government Islamic debt accounted for a 44.0% share of the total government bond stock.

At the end of September, the LCY bond market of Singapore expanded to a size of USD265 billion, based on *AsianBondsOnline* estimates. Overall growth continued to be driven by government bonds on increased issuance of Monetary Authority of Singapore (MAS) bills. The absence of redemptions of Singapore Government Securities bills and bonds during the quarter also contributed to the growth. In contrast, the corporate bond segment contracted during the review period due to a decline in issuance.

The LCY bond market in Hong Kong, China stood at USD244 billion at the end of September on growth of 2.2% q-o-q. Exchange Fund Bills drove growth as the Hong Kong Monetary Authority announced additional auctions during the quarter amid hefty demand by banks and flush liquidity in the banking system. On the other hand, both the stock of Exchange Fund Notes and Hong Kong Special Administrative Region bonds declined during the review period.

In Indonesia, the LCY bond market reached a size of USD180 billion at the end of September, with growth in both the government and corporate bond segments. Overall growth climbed to 4.1% q-o-q in Q3 2017 from only 1.8% q-o-q in Q2 2017 on increased issuance in both segments. Treasury instruments buoyed growth in the government bond segment. The government took advantage of robust demand from both foreign and domestic investors as it accepted bids above the target in 11 out of 13 auctions during the quarter. Only one government bond auction fell below the indicative target in Q3 2017. The stock of corporate bonds also rose at the end of September due to more active issuance during the quarter. Only the stock of central bank bills, known as Sertifikat Bank Indonesia, contracted during the review period, as maturities exceeded new issuance. Bank Indonesia limited its issuance of Sertifikat Bank Indonesia to shariah-compliant issues beginning in January 2017. Other instruments are now being used for its monetary operations such as Bank Indonesia deposit certificates, repurchases of government bonds, and foreign exchange bills.

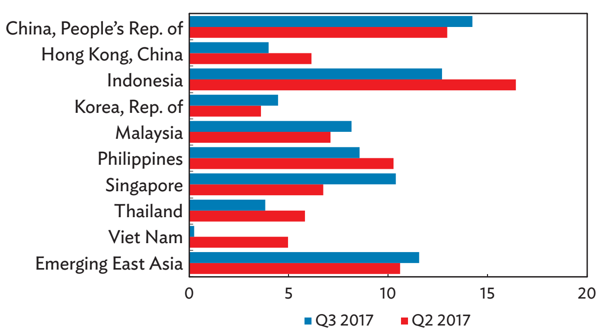
At the end of September, the Philippines LCY bond market had outstanding bonds worth USD102 billion, which was broadly unchanged from its end-June level. Growth slowed to 0.8% q-o-q in Q3 2017 from 4.6% q-o-q in the earlier quarter. The majority of growth was accounted for by corporate bonds rather than government bonds. The increase in the stock of government bonds came solely from Treasury bills. Both the stock of Treasury bonds and other government bonds posted marginal declines during the review period. The weak growth in government bonds stemmed mainly from partial awards during auctions of Treasury instruments during the quarter.

Viet Nam's LCY bond market reached a size of USD46 billion and remained the smallest market in emerging East Asia at the end of September. Growth was driven largely by an increase in the stock of central bank bills as the State Bank of Vietnam resumed issuance of bills in July, following its previous issuance in March, in a bid to increase foreign reserves. Treasury bonds also contributed to the overall growth at the end of September, albeit to a lesser extent. Following a policy rate cut in July, most Treasury auctions were only partially awarded. Corporate bonds marginally declined as redemptions exceeded issuance during the review period. A number of corporate bonds in Viet Nam are issued through private placements and some of the relevant data are not publicly available.

On a year-on-year (y-o-y) basis, emerging East Asia's LCY bond market growth inched up to 11.6% in Q3 2017 from 10.6% in Q2 2017 (**Figure 1b**). While all LCY bond markets in the region recorded y-o-y expansions in Q3 2017, five markets posted slower growth rates during the quarter compared with Q2 2017. The fastest-growing LCY bond market on a y-o-y basis was the PRC's, whose growth accelerated to 14.2% in Q3 2017 from 12.9% in the prior quarter. Next were the markets of Indonesia and Singapore, which posted y-o-y hikes of 12.7% and 10.4%, respectively, in Q3 2017.

Emerging East Asia's LCY bond market continued to be dominated by government bonds, which comprise debt securities issued by governments, central banks, and state-owned entities. Government bonds accounted for 66.5% of the region's aggregate bond stock at the end of September (**Table 1**). The total size of government bonds in the region reached USD7,701 billion at the end of September, rising at a faster pace of 5.1% q-o-q in Q3 2017 versus 4.7% q-o-q in Q2 2017. Driving regional growth were the markets of the PRC, the Republic of Korea, and Singapore. On a y-o-y basis, government bond market growth was also higher at 15.9% in Q3 2017, up from 15.5% in Q2 2017.

Figure 1b: Growth of Local Currency Bond Markets in the Second and Third Quarters of 2017 (y-o-y, %)



Q2 = second quarter, Q3 = third quarter, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Growth rates are calculated from local currency base and do not include currency effects.
3. Emerging East Asia growth figures are based on 30 September 2017 currency exchange rates and do not include currency effects.
4. For Hong Kong, China, Q3 2017 corporate bonds outstanding are based on *AsianBondsOnline* estimates. For the Republic of Korea, Q3 2017 government bonds outstanding are as of August 2017. For Singapore, corporate bonds outstanding are based on *AsianBondsOnline* estimates. For Thailand, Q3 2017 government bonds outstanding are based on AsianBondsOnline estimates and corporate bonds outstanding are as of August 2017.

Sources: People's Republic of China (*ChinaBond* and *Wind Information*); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Bank Indonesia; Directorate General of Budget Financing and Risk Management, Ministry of Finance; and Indonesia Stock Exchange); Republic of Korea (*EDAILY BondWeb* and the Bank of Korea); Malaysia (Bank Negara Malaysia); Philippines (Bureau of the Treasury and Bloomberg LP); Singapore (Monetary Authority of Singapore, Singapore Government Securities, and Bloomberg LP); Thailand (Bank of Thailand); and Viet Nam (Bloomberg LP and Vietnam Bond Market Association).

At the end of September, the PRC continued to have the largest government bond market in the region, with its regional share rising by 1 percentage point to an equivalent of 77.0% of the aggregate stock of government bonds. It was followed by the Republic of Korea, whose government bond market size of USD789 billion represented a 10.2% share of the regional total. The remaining 12.7% share was accounted for by all other emerging East Asian markets. The smallest LCY government bond markets in the region remained those of Viet Nam (USD44 billion) and the Philippines (USD83 billion).

In the same period, the region's LCY corporate bonds outstanding reached USD3,881 billion, with the corporate segment's share slipping to 33.5% of the total aggregate bond stock. Between Q2 2017 and Q3 2017, corporate bond growth was higher on both a q-o-q and y-o-y basis. Growth in the corporate bond segment continued to lag behind that of the government bond segment, indicating the need for its further development. This is consistent with the findings of our annual bond market liquidity survey (see the chapter on the *AsianBondsOnline* Annual Bond Market Liquidity Survey for more details).

At the end of September, all markets in the region had posted q-o-q increases in their respective corporate bond segment except for Singapore and Viet Nam. The largest corporate bond markets in the region in terms of size were those of the PRC at USD2,293 billion and the Republic of Korea at USD1,105 billion. Together these two markets accounted for 87.6% of the region's aggregate corporate bond stock during the review period. The smallest LCY corporate bond markets in the region were those of Viet Nam (USD2 billion), the Philippines (USD20 billion), and Indonesia (USD27 billion).

The size of emerging East Asia's LCY bond market relative to the region's gross domestic product (GDP) inched up to a share of 70.5% in Q3 2017 from 69.0% in Q2 2017, with growth driven by government bonds (**Table 2**). The share of government bonds to GDP rose to 46.9% in Q3 2017, an increase of 1.4 percentage points from the previous quarter. The share of corporate bonds to GDP was unchanged in Q3 2017 at 23.6%. The Republic of Korea and Malaysia continued to have the bond markets with the largest GDP shares.

Table 1: Size and Composition of Local Currency Bond Markets

	Q3 2016		Q2 2017		Q3 2017		Growth Rate (LCY-base %)				Growth Rate (USD-base %)			
							Q3 2016		Q3 2017		Q3 2016		Q3 2017	
	Amount (USD billion)	% share	Amount (USD billion)	% share	Amount (USD billion)	% share	q-o-q	y-o-y	q-o-q	y-o-y	q-o-q	y-o-y	q-o-q	y-o-y
China, People's Rep. of														
Total	7,178	100.0	7,658	100.0	8,221	100.0	4.2	26.0	5.3	14.2	3.8	20.1	7.3	14.5
Government	4,969	69.2	5,480	71.6	5,928	72.1	6.0	35.1	6.1	19.0	5.6	28.7	8.2	19.3
Corporate	2,209	30.8	2,178	28.4	2,293	27.9	0.3	9.5	3.3	3.5	(0.1)	4.4	5.3	3.8
Hong Kong, China														
Total	236	100.0	239	100.0	244	100.0	4.3	18.0	2.2	4.0	4.4	17.9	2.2	3.3
Government	138	58.3	138	57.8	143	58.6	5.4	21.8	3.7	4.6	5.4	21.7	3.6	3.8
Corporate	98	41.7	101	42.2	101	41.4	2.9	13.1	0.2	3.2	2.9	13.0	0.2	2.5
Indonesia														
Total	165	100.0	175	100.0	180	100.0	7.5	27.2	4.1	12.7	8.9	42.9	3.1	9.1
Government	143	86.7	150	85.7	153	85.2	7.7	29.4	3.4	10.7	9.1	45.3	2.4	7.2
Corporate	22	13.3	25	14.3	27	14.8	6.2	14.9	8.2	25.5	7.5	29.0	7.2	21.5
Korea, Rep. of														
Total	1,886	100.0	1,869	100.0	1,894	100.0	0.6	3.9	1.4	4.4	5.2	11.8	1.3	0.4
Government	777	41.2	780	41.7	789	41.7	0.3	5.2	1.3	5.6	4.9	13.2	1.2	1.5
Corporate	1,109	58.8	1,089	58.3	1,105	58.3	0.8	3.0	1.5	3.6	5.5	10.8	1.4	(0.4)
Malaysia														
Total	282	100.0	290	100.0	299	100.0	0.4	8.6	1.4	8.1	(2.3)	15.3	3.1	6.0
Government	153	54.1	156	53.8	159	53.1	(1.9)	4.9	0.1	6.2	(4.5)	11.5	1.8	4.1
Corporate	130	45.9	134	46.2	140	46.9	3.3	13.3	2.9	10.4	0.6	20.3	4.6	8.3
Philippines														
Total	99	100.0	102	100.0	102	100.0	2.4	1.6	0.8	8.5	(0.4)	(2.0)	0.03	3.4
Government	82	82.4	83	81.5	83	80.8	1.9	0.4	0.04	6.5	(0.8)	(3.2)	(0.7)	1.5
Corporate	17	17.6	19	18.5	20	19.2	4.6	7.7	4.2	18.1	1.8	3.9	3.4	12.5
Singapore														
Total	239	100.0	252	100.0	265	100.0	0.4	0.4	3.8	10.4	(0.8)	4.7	5.2	10.8
Government	134	56.1	150	59.6	162	61.2	0.6	(2.6)	6.7	20.6	(0.6)	1.7	8.1	21.1
Corporate	105	43.9	102	40.4	103	38.8	0.1	4.4	(0.4)	(2.6)	(1.1)	8.9	1.0	(2.2)
Thailand														
Total	306	100.0	323	100.0	330	100.0	2.1	8.4	0.2	3.8	3.7	14.0	2.1	7.8
Government	226	73.8	235	72.6	239	72.5	1.3	6.9	0.1	2.0	2.8	12.4	2.0	5.9
Corporate	80	26.2	89	27.4	91	27.5	4.6	13.0	0.4	8.9	6.2	18.8	2.2	13.0
Viet Nam														
Total	47	100.0	45	100.0	46	100.0	7.2	22.5	2.4	0.2	7.3	23.5	2.4	(1.7)
Government	45	96.0	43	95.6	44	95.9	7.2	21.4	2.7	0.2	7.2	22.4	2.7	(1.8)
Corporate	2	4.0	2	4.4	2	4.1	8.5	57.2	(3.9)	2.3	8.6	58.5	(3.9)	0.4
Emerging East Asia														
Total	10,438	100.0	10,953	100.0	11,581	100.0	3.3	19.3	4.2	11.6	3.8	17.8	5.7	10.9
Government	6,666	63.9	7,215	65.9	7,701	66.5	4.8	27.0	5.1	15.9	5.0	24.6	6.7	15.5
Corporate	3,772	36.1	3,739	34.1	3,881	33.5	0.7	7.8	2.5	3.9	1.7	7.5	3.8	2.9
Japan														
Total	11,110	100.0	10,144	100.0	10,178	100.0	0.9	2.9	0.4	1.7	2.8	21.8	0.3	(8.4)
Government	10,327	93.0	9,445	93.1	9,482	93.2	0.8	3.2	0.5	1.9	2.6	22.0	0.4	(8.2)
Corporate	783	7.0	699	6.9	695	6.8	2.6	0.1	(0.4)	(1.4)	4.4	18.4	(0.5)	(11.2)

( ) = negative, LCY = local currency, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, USD = United States dollar, y-o-y = year-on-year.

Notes:

1. For Hong Kong, China, Q3 2017 corporate bonds outstanding are based on *AsianBondsOnline* estimates. For the Republic of Korea, Q3 2017 government bonds outstanding are as of August 2017. For Singapore, corporate bonds outstanding are based on *AsianBondsOnline* estimates. For Thailand, Q3 2017 government bonds outstanding are based on *AsianBondsOnline* estimates and corporate bonds outstanding are as of August 2017.
2. Corporate bonds include issues by financial institutions.
3. Bloomberg LP end-of-period LCY–USD rates are used.
4. For LCY base, emerging East Asia growth figures are based on 30 September 2017 currency exchange rates and do not include currency effects.
5. 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.

Sources: People's Republic of China (*ChinaBond* and *Wind Information*); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Bank Indonesia; Directorate General of Budget Financing and Risk Management, Ministry of Finance; and Indonesia Stock Exchange); Republic of Korea (*EDAILY BondWeb* and the Bank of Korea); Malaysia (Bank Negara Malaysia); Philippines (Bureau of the Treasury and Bloomberg LP); Singapore (Monetary Authority of Singapore, Singapore Government Securities, and Bloomberg LP); Thailand (Bank of Thailand); Viet Nam (Bloomberg LP and Vietnam Bond Market Association); and Japan (Japan Securities Dealers Association).

Table 2: Size and Composition of Local Currency Bond Markets (% of GDP)

	Q3 2016	Q2 2017	Q3 2017
China, People's Rep. of			
Total	66.0	66.3	68.0
Government	45.7	47.4	49.0
Corporate	20.3	18.9	19.0
Hong Kong, China			
Total	74.5	72.4	72.8
Government	43.4	41.8	42.7
Corporate	31.1	30.6	30.1
Indonesia			
Total	17.7	17.9	18.3
Government	15.4	15.4	15.5
Corporate	2.4	2.6	2.7
Korea, Rep. of			
Total	128.3	127.5	129.2
Government	52.9	53.2	53.8
Corporate	75.4	74.3	75.4
Malaysia			
Total	96.9	96.2	99.3
Government	52.4	51.7	52.7
Corporate	44.5	44.5	46.6
Philippines			
Total	33.9	34.2	34.2
Government	27.9	27.9	27.7
Corporate	6.0	6.3	6.6
Singapore			
Total	80.0	82.7	87.0
Government	44.8	49.3	53.3
Corporate	35.1	33.4	33.7
Thailand			
Total	74.7	74.2	75.7
Government	55.1	53.8	54.9
Corporate	19.6	20.3	20.8
Viet Nam			
Total	23.8	21.8	21.8
Government	22.8	20.8	20.9
Corporate	1.0	1.0	0.9
Emerging East Asia			
Total	69.2	69.0	70.5
Government	44.2	45.5	46.9
Corporate	25.0	23.6	23.6
Japan			
Total	210.5	211.4	212.1
Government	195.7	196.8	197.6
Corporate	14.8	14.6	14.5

GDP = gross domestic product, Q2 = second quarter, Q3 = third quarter.
Notes:
1. Data for GDP is from CEIC. Q3 2017 GDP figures carried over from Q2 2017 except for the People's Republic of China; Hong Kong, China; Indonesia; and Viet Nam.
2. For Hong Kong, China, Q3 2017 corporate bonds outstanding data are based on *AsianBondsOnline* estimates. For the Republic of Korea, Q3 2017 government bonds outstanding data are as of August 2017. For Singapore, corporate bonds outstanding data are based on *AsianBondsOnline* estimates. For Thailand, Q3 2017 government bonds outstanding are based on *AsianBondsOnline* estimates and corporate bonds outstanding are as of August 2017.

Sources: People's Republic of China (*ChinaBond* and *Wind Information*); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Bank Indonesia; Directorate General of Budget Financing and Risk Management, Ministry of Finance; and Indonesia Stock Exchange); Republic of Korea (*EDAILY BondWeb* and the Bank of Korea); Malaysia (Bank Negara Malaysia); Philippines (Bureau of the Treasury and Bloomberg LP); Singapore (Monetary Authority of Singapore, Singapore Government Securities, and Bloomberg LP); Thailand (Bank of Thailand); Viet Nam (Bloomberg LP and Vietnam Bond Market Association); and Japan (Japan Securities Dealers Association).

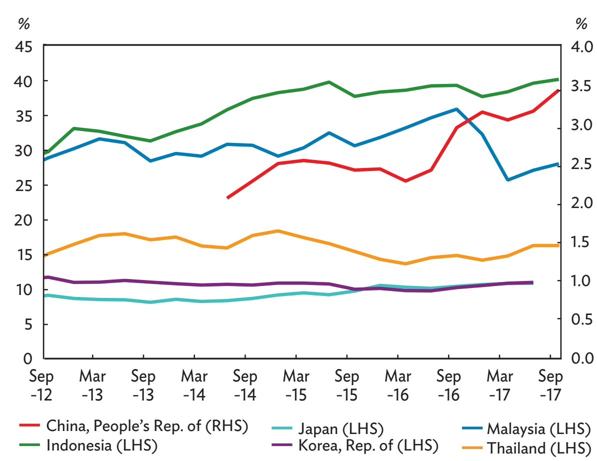
Foreign investor holdings in emerging East Asia's LCY government bond markets were stable at the end of September.

Foreign investor interest in emerging East Asia's LCY government bond market remained positive at the end of September amid the US Federal Reserve's hawkish move in its September meeting. The Federal Reserve has hinted at a rate hike before the end of 2017 and announced that it would commence balance sheet normalization in October. Offshore investor holdings of LCY government bonds continued to climb at the end of September for all markets for which data are available (**Figure 2**). The only exception was in Thailand where the foreign holdings share for government bonds held steady in Q3 2017.

Malaysia posted the largest increase in its share of foreign holdings, with a gain of nearly 1 percentage point to 27.9% at the end of September. Foreign investors have returned to Malaysia's bond market due to its strong economic fundamentals.

In Indonesia, the foreign holdings share reached 40.0% at the end of September, up from 39.5% at the end of June. Offshore investors shored up their holdings of Indonesian government bonds, which have the highest yields among all government bond markets

Figure 2: Foreign Holdings of Local Currency Government Bonds in Select Asian Economies (% of total)



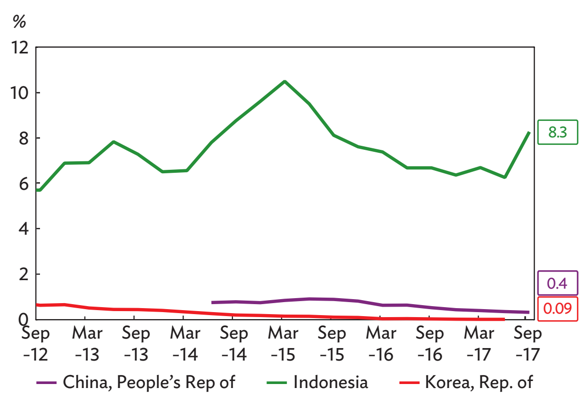
LHS = left-hand side, RHS = right-hand side.
Note: Data as of end-September 2017 except for Japan and the Republic of Korea (end-June 2017).
Source: *AsianBondsOnline*.

in emerging East Asia. The share of foreign investors reached a high of 40.5% in September, particularly after a policy rate cut by Bank Indonesia in 22 September. While economic fundamentals remain stable, cautious moves by investors led to a sell-off in the last 2 days of September amid the Federal Reserve's signaling of further tightening. Since then the foreign holdings share has steadily retreated, falling to 38.4% at the end of October.

The share of nonresident holdings in the PRC, while remaining small relative to its peers in the region, continued to trend higher in Q3 2017. Offshore investors increased their holdings to a share of 3.4% at the end of September from 3.2% at the end of June. In Thailand and the Republic of Korea, foreign holdings remained steady at 16.2% (end-September) and 10.9% (end-June), respectively.

The foreign holdings shares in emerging East Asia's LCY corporate bond markets remained low relative to government bonds, reflective of largely illiquid markets. The only significant movement in nonresident holdings of corporate bonds was seen in Indonesia, where the foreign holdings share rose by 2 percentage points to 8.3% at the end of September from 6.3% at the end of June (**Figure 3**). In contrast, the foreign holdings shares in the PRC and the Republic of Korea were broadly unchanged at less than 0.5% each.

Figure 3: Foreign Holdings of Local Currency Corporate Bonds in Select Emerging East Asian Economies (% of total)



Note: Data as of end-September 2017 except for the Republic of Korea (end-June 2017).
Sources: Based on data from *Wind*, Otoritas Jasa Keuangan, and the Bank of Korea.

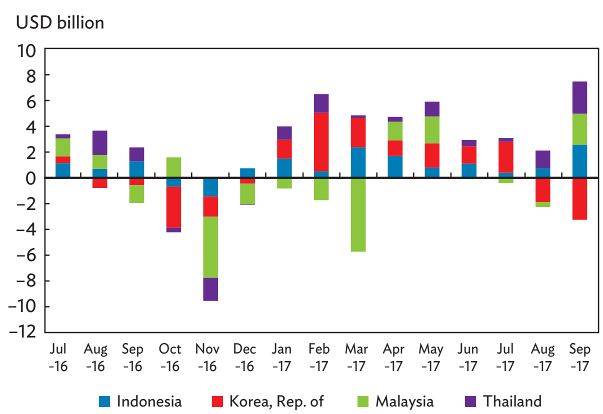
Emerging East Asia's LCY bond markets continue to attract foreign funds in Q3 2017.

The region's LCY bond markets continued to attract foreign funds in Q3 2017 as investor sentiments remained positive on the back of a strengthening global economic outlook. Except for the Republic of Korea, all markets for which data are available recorded foreign capital bond inflows during the quarter. On a monthly basis, Indonesia and Thailand benefitted the most, with both markets having consistently posted net foreign inflows since the start of the year (**Figure 4**). In October, some outflows from the region's bond market were observed.

In Q3 2017, net foreign bond inflows in the region were the largest in Thailand as it lured global funds worth USD4.1 billion. Offshore investors continued to buy Thai bonds, despite their low yields, due to positive macroeconomic fundamentals.

Indonesia also saw further gains, with offshore investors bringing in a net USD3.6 billion into the bond market during the quarter. While Indonesian bond yields have declined since the start of the year, investors continued to chase government bonds as they have the highest rates in emerging East Asia. Likewise, improving macroeconomic

Figure 4: Foreign Bond Flows in Select Emerging East Asian Economies



Notes:
1. The Republic of Korea and Thailand provided data on bond flows. For Indonesia and Malaysia, month-on-month changes in foreign holdings of LCY government bonds were used as a proxy for bond flows.
2. Data provided as of September 2017.
3. Figures were computed based on 30 September 2017 exchange rates to avoid currency effects.

Sources: Directorate General of Budget Financing and Risk Management, Ministry of Finance; Financial Supervisory Service; Bank Negara Malaysia; and Thai Bond Market Association.

conditions, as evidenced by the S&P Global upgrade, also boosted interest in Indonesia's bond market. In October, however, a reversal in capital inflows was noted, as investors became cautious due to tightening monetary policies in the US and eurozone.

In Malaysia, foreign investment rebounded strongly in September, leading capital flows to turn positive in Q3 2017. From January through September, offshore investors recorded net sell positions valued at USD3.3 billion as monthly foreign bond outflows were noted in 6 of the 9 months.

On the other hand, the Republic of Korea was the sole market in the region that posted net foreign capital outflows in Q3 2017, resulting from heightened geopolitical risks in recent months. Nonetheless, cumulative bond flows year-to-date through September were still positive.

Emerging East Asia's total LCY bond issuance was up in Q3 2017, primarily driven by the continued recovery in issuance in the PRC, with q-o-q growth in most markets in the region.

Issuance of LCY bonds in emerging East Asia rose 22.1% q-o-q to USD1,346 billion in Q3 2017 (**Table 3**). Total government bond issuance increased 22.7% q-o-q to USD969 billion, while corporate bond issuance expanded 20.6% q-o-q to USD377 billion. The high growth was led by the continued recovery in issuance in the PRC's bond market. The PRC accounted for 65% of total LCY bond issuance in the region during the quarter. Excluding the Republic of Korea, the Philippines, and Thailand, all other markets in the region exhibited q-o-q increases in issuance.

Issuance of central government bonds—Treasury bills, Treasury bonds, and other government securities—rose 27.6% q-o-q to reach USD700 billion in Q3 2017, accounting for 52% of total LCY bond issuance in the region. The sole driver of growth was the 35.1% q-o-q jump in issuance in the PRC, which accounted for 89% of the region's total issuance of central government bonds during the quarter. The PRC saw increased issuance of Treasury bonds, local government bonds, and policy bank bonds during the quarter. The only other markets that saw q-o-q increases were Indonesia and Malaysia, albeit with minimal contributions to overall growth. All other markets in the region exhibited q-o-q contractions.

Issuance of central banks, which accounted for 20% of the region's total bond issuance, also increased in Q3 2017 by 11.4% q-o-q to USD270 billion. The rise was largely driven by increased issuance by central banks in Viet Nam; Singapore; and Hong Kong, China. In the case of Singapore and Hong Kong, China, the increase in issuance was primarily in response to demand from banks due to high levels of liquidity in these markets. Meanwhile, the Bank of Korea, which is the largest issuer of central bank bonds in the region, issued fewer bonds in Q3 2017 than in the previous quarter.

The region's total issuance of corporate bonds rose 20.6% q-o-q to USD377 billion in Q3 2017. As with the issuance of central government bonds, the higher volume was primarily driven by the continued surge in issuance of corporate bonds in the PRC. Corporate bond issuance in the PRC accounted for 66% of the region's total. The only other corporate bond markets that posted q-o-q growth in issuance in Q3 2017 were Indonesia and Malaysia.

The PRC continued to be the largest issuer of LCY bonds in emerging East Asia with its issuance comprising 65% of the regional total. Issuance for the quarter in the PRC surged 37.8% q-o-q and 21.2% y-o-y to reach USD871 billion. Both its government and corporate sectors posted high growth rates. Issuance of government bonds rose 35.1% q-o-q to USD624 billion. The largest increase in the government bond segment was observed in the issuance of Treasury bonds, which jumped 83.1% to CNY1.5 trillion in Q3 2017 from CNY819 billion in Q2 2017. In addition to its regular auction schedule, the Ministry of Finance issued CNY600 billion worth of special Treasury bonds in August to refinance maturing bonds.[5] Issuance of local government bonds also rose to CNY1.7 trillion from CNY1.4 trillion as part of the continued bond swap program. New corporate bonds surged in Q3 2017 by 45.1% q-o-q to USD247 billion. Given that the policies being implemented to manage the PRC's debt levels were only applicable to certain industries, many companies returned to the market to issue bonds. The bulk of the issuance was in short-term

[5] Reuters. 2017. *China to Roll Over 600 Bln Yuan of Special Treasury Bonds.* 28 August. https://www.reuters.com/article/china-treasuries/china-to-roll-over-600-bln-yuan-of-special-treasury-bonds-idUSL4N1LE1JG.

Table 3: Local-Currency–Denominated Bond Issuance (gross)

	Q3 2016		Q2 2017		Q3 2017		Growth Rate (LCY-base %)		Growth Rate (USD-base %)	
							Q3 2017		Q3 2017	
	Amount (USD billion)	% share	Amount (USD billion)	% share	Amount (USD billion)	% share	q-o-q	y-o-y	q-o-q	y-o-y
China, People's Rep. of										
Total	717	100.0	620	100.0	871	100.0	37.8	21.2	40.5	21.5
Government	491	68.5	453	73.0	624	71.6	35.1	26.7	37.7	27.0
Central Bank	0	0.0	0	0.0	0	0.0	–	–	–	–
Treasury and Other Govt.	491	68.5	453	73.0	624	71.6	35.1	26.7	37.7	27.0
Corporate	226	31.5	167	27.0	247	28.4	45.1	9.3	47.9	9.6
Hong Kong, China										
Total	99	100.0	107	100.0	111	100.0	4.6	12.9	4.5	12.1
Government	91	91.3	93	87.5	98	88.1	5.2	8.9	5.2	8.1
Central Bank	90	90.7	92	86.2	98	88.0	6.7	9.5	6.7	8.8
Treasury and Other Govt.	1	0.6	1	1.3	0.1	0.1	(94.4)	(87.5)	(94.4)	(87.6)
Corporate	9	8.7	13	12.5	13	11.9	0.0	54.9	(0.05)	53.9
Indonesia										
Total	15	100.0	11	100.0	15	100.0	36.7	7.3	35.5	3.8
Government	13	85.8	9	77.3	12	77.3	36.8	(3.4)	35.6	(6.5)
Central Bank	4	24.2	0.1	0.7	0.5	3.3	515.0	(85.5)	509.3	(86.0)
Treasury and Other Govt.	9	61.6	9	76.5	11	74.1	32.3	28.9	31.1	24.7
Corporate	2	14.2	3	22.7	3	22.7	36.4	71.7	35.1	66.2
Korea, Rep. of										
Total	144	100.0	176	100.0	166	100.0	(5.2)	20.3	(5.3)	15.6
Government	70	48.5	78	44.1	76	46.0	(1.3)	13.9	(1.4)	9.5
Central Bank	35	24.2	38	21.8	38	22.6	(2.0)	12.2	(2.1)	7.9
Treasury and Other Govt.	35	24.4	39	22.3	39	23.4	(0.6)	15.5	(0.7)	11.0
Corporate	74	51.5	98	55.9	90	54.0	(8.3)	26.3	(8.4)	21.4
Malaysia										
Total	16	100.0	17	100.0	18	100.0	7.8	15.6	9.7	13.3
Government	6	39.9	7	42.9	8	43.7	9.8	26.4	11.7	24.0
Central Bank	1	6.0	0.3	2.1	0.2	1.3	(33.3)	(75.0)	(32.2)	(75.5)
Treasury and Other Govt.	5	33.9	7	40.8	8	42.4	12.1	44.4	14.0	41.6
Corporate	10	60.1	9	57.1	10	56.3	6.3	8.4	8.1	6.3
Philippines										
Total	8	100.0	9	100.0	6	100.0	(31.9)	(13.5)	(32.4)	(17.6)
Government	7	87.9	8	88.3	5	84.4	(34.9)	(16.8)	(35.4)	(20.8)
Central Bank	0	0.0	0	0.0	0	0.0	–	–	–	–
Treasury and Other Govt.	7	87.9	8	88.3	5	84.4	(34.9)	(16.8)	(35.4)	(20.8)
Corporate	0.9	12.1	1	11.7	1	15.6	(9.3)	10.9	(10.0)	5.7
Singapore										
Total	65	100.0	79	100.0	88	100.0	10.2	34.8	11.7	35.4
Government	62	95.4	76	95.7	85	96.5	11.1	36.4	12.6	36.9
Central Bank	58	89.2	70	88.9	81	92.4	14.5	39.6	16.1	40.2
Treasury and Other Govt.	4	6.2	5	6.8	4	4.1	(33.8)	(10.9)	(32.9)	(10.5)
Corporate	3	4.6	3	4.3	3	3.5	(9.6)	2.9	(8.3)	3.3
Thailand										
Total	78	100.0	67	100.0	56	100.0	(17.9)	(30.4)	(16.4)	(27.7)
Government	64	82.5	54	80.1	48	85.4	(12.5)	(28.0)	(10.9)	(25.2)
Central Bank	55	70.6	40	59.0	40	71.4	(0.6)	(29.6)	1.2	(26.9)
Treasury and Other Govt.	9	11.9	14	21.2	8	14.0	(45.8)	(18.3)	(44.8)	(15.2)
Corporate	14	17.5	13	19.9	8	14.6	(39.6)	(41.7)	(38.5)	(39.5)

continued on next page

Table 3 *continued*

	Q3 2016		Q2 2017		Q3 2017		Growth Rate (LCY-base %)		Growth Rate (USD-base %)	
							Q3 2017		Q3 2017	
	Amount (USD billion)	% share	Amount (USD billion)	% share	Amount (USD billion)	% share	q-o-q	y-o-y	q-o-q	y-o-y
Viet Nam										
Total	18	100.0	2	100.0	13	100.0	438.2	(29.4)	438.2	(30.7)
Government	18	99.2	2	100.0	13	99.9	437.8	(28.8)	437.8	(30.2)
Central Bank	15	83.2	0	0.0	12	93.4	–	(20.7)	–	(22.2)
Treasury and Other Govt.	3	16.0	2	100.0	0.8	6.6	(64.6)	(71.0)	(64.6)	(71.5)
Corporate	0.2	0.8	0	0.0	0.01	0.1	–	(93.6)	–	(93.7)
Emerging East Asia										
Total	1,160	100.0	1,088	100.0	1,346	100.0	22.1	16.3	23.7	16.1
Government	822	70.9	780	71.6	969	72.0	22.7	18.0	24.3	17.9
Central Bank	258	22.2	241	22.1	270	20.0	11.4	4.7	12.2	4.7
Treasury and Other Govt.	564	48.7	539	49.5	700	52.0	27.6	24.0	29.8	24.0
Corporate	338	29.1	309	28.4	377	28.0	20.6	12.2	22.0	11.5
Japan										
Total	509	100.0	413	100.0	419	100.0	1.5	(8.6)	1.4	(17.7)
Government	454	89.3	379	91.7	387	92.5	2.4	(5.3)	2.3	(14.7)
Central Bank	0	0.0	0	0.0	0	0.0	–	–	–	–
Treasury and Other Govt.	454	89.3	379	91.7	387	92.5	2.4	(5.3)	2.3	(14.7)
Corporate	55	10.7	34	8.3	31	7.5	(8.5)	(36.2)	(8.6)	(42.5)

( ) = negative, – = not applicable, LCY = local currency, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Corporate bonds include issues by financial institutions.
2. For Hong Kong, China, Q3 2017 corporate bond issuance data carried over from Q2 2017.
3. For the Republic of Korea, Q3 2017 government bond issuance data are based on *AsianBondsOnline* estimates.
4. For Thailand, Q3 2017 issuance data are based on *AsianBondsOnline* estimates.
5. Bloomberg LP end-of-period LCY–USD rates are used.
6. For LCY-base, emerging East Asia growth figures are based on 30 September 2017 currency exchange rates and do not include currency effects.
Sources: People's Republic of China (*ChinaBond*); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Bank Indonesia; Directorate General of Budget Financing and Risk Management, Ministry of Finance; and Indonesia Stock Exchange); Republic of Korea (*EDAILY Bondweb* and the Bank of Korea); Malaysia (Bank Negara Malaysia); Philippines (Bloomberg LP); Singapore (Singapore Government Securities and Bloomberg LP); Thailand (Bank of Thailand and ThaiBMA); Viet Nam (Bloomberg LP and Vietnam Bond Market Association); and Japan (Japan Securities Dealers Association).

commercial paper, local corporate bonds, and medium-term notes.

The Republic of Korea remained the second largest issuer in the region with a 12% share of the regional total. Total issuance in Q3 2017 was down 5.2% q-o-q to USD166 billion, as issuance in both the government and corporate bond segments was lower than in Q2 2017. Within the government segment, the issuance of KTBs and Monetary Stabilization Bonds were both lower in Q3 2017. The planned issuance of KTBs was lower on a q-o-q basis due to relatively more frequent auctions in Q2 2017 as part of the frontloading policy of the government in the first half of the year. Issuance of corporate bonds fell at a faster pace of 8.3% q-o-q to USD90 billion, mainly due to a high base in Q2 2017 when issuance surged as companies took advantage of low interest rates. This was in contrast to Q3 2017 when yields rose, particularly in August and September, due to heightened geopolitical risks, discouraging companies from raising funds via bonds.

In Hong Kong, China, total bond issuance rose 4.6% q-o-q to reach USD111 billion, making it the third largest issuer in the region. The sole driver of growth was the issuance of central bank bonds, particularly Exchange Fund Bills. The Hong Kong Monetary Authority auctioned more than it planned to meet banks' demand as a result of a high level of liquidity in the market. Issuance of Hong Kong Special Administrative Region bonds in Q3 2017 was lower compared to the previous quarter. On a y-o-y basis, however, issuance increased at a faster pace of 12.9%, led by growth in both central bank bonds and corporate bonds.

Total bond issuance in Singapore grew at a robust pace of 10.2% q-o-q to reach USD88 billion in Q3 2017. The growth was led by MAS bills, which rose 14.5% q-o-q to reach USD81 billion. The central bank has been issuing higher volumes of MAS bills in 2017 compared to the previous year to mop up excess liquidity in the market. Meanwhile, issuance of Singapore Government Securities and corporate bonds fell in Q3 2017. On a y-o-y basis, issuance accelerated to 34.8%, primarily driven by higher issuance of central bank bills.

In Malaysia, total bond issuance rose 7.8% q-o-q to USD18 billion as both the government and corporate sectors posted positive q-o-q growth. Issuance of central government bonds increased 12.1% q-o-q to USD8 billion, led by Malaysian Government Securities and Treasury bills, while new issuance of Government Investment Issues fell during the quarter. New corporate issues were also higher in Q3 2017, up 6.3% q-o-q to USD10 billion, as companies took advantage of the stronger ringgit and also anticipated a rise in yields. The surge in issuance was observed in unrated bonds and government-guaranteed bonds. From the same period a year earlier, issuance increased 15.6%.

Viet Nam posted the fastest q-o-q growth in the region, with issuance reaching USD13 billion in Q3 2017, almost five times the USD2 billion posted in the previous quarter. The high growth rate stemmed from new issuance of central bank bonds and corporate bonds compared to the lack of issuance of both types of bonds in Q2 2017. The State Bank of Vietnam resumed its issuance of central bank bonds in July, a mechanism intended to increase Viet Nam's foreign exchange reserves, with total issuance for the quarter reaching USD12 billion.[6] Meanwhile, the sole corporate bond issuance in Viet Nam in Q3 2017 was the VND220 billion private placement by Loc Troi Group. In contrast, Treasury bond issuance was lower in Q3 2017, as most auctions were not fully awarded. This was the case after the State Bank of Vietnam's policy rate cut. Some participants from our annual liquidity survey attributed this to investors' cautious move given the overall decline in yields. Also, it was mentioned that banks, who are primary holders of Treasury bonds, are shifting their interest toward credit expansion. Compared to the same period a year earlier, issuance in Viet Nam dropped 29.4% as both the government and corporate bond sector contracted.

Indonesia posted the second fastest q-o-q growth in issuance in the region at 36.7% q-o-q to reach USD15 billion. The bulk of the growth was from the increased issuance of central government bonds, which was up 32.3% q-o-q to USD11 billion. This was a result of higher planned auction amounts compared to Q2 2017 when the government eased its frontloading policy. The government also issued above its target in most auctions of Treasury bills and bonds during the quarter. New issues of corporate bonds also posted higher growth of 36.4% q-o-q to reach USD3 billion. However, compared to a year earlier, issuance rose at a slower pace of 7.3%.

Issuance in Thailand continued to contract in Q3 2017, falling 17.9% q-o-q and 30.4% y-o-y to USD56 billion. The slowdown was driven by the decline in issuance of central government bonds, which dropped 45.8% q-o-q to USD8 billion. The volume of new corporate issues also fell 39.6% q-o-q to USD8 billion. Meanwhile, issuance from the central bank was almost at par with the previous quarter at USD40 billion as the government has been issuing smaller volumes of central bank bills since April to manage the sharp appreciation of the Thai baht.

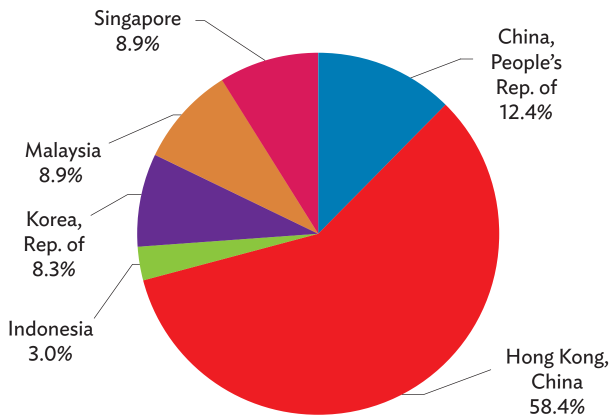
The Philippines saw the largest drop in issuance in the region, with declines of 31.9% q-o-q and 13.5% y-o-y to USD6 billion. The large drop was primarily due to a high base in Q2 2017 when the government issued PHP181 billion worth of Retail Treasury Bonds. Nevertheless, issuance of Treasury bonds and bills fell short of the auction program as the Bureau of the Treasury only partially awarded some of its auctions. Corporate bond issuance in Q3 2017 also fell 9.3% q-o-q to USD1 billion.

Cross-border bond issuance in emerging East Asia reached USD3.7 billion in Q3 2017.

Emerging East Asia's total cross-border bond issuance reached USD3.7 billion in Q3 2017, reflecting an increase of 57.1% q-o-q and 2.4% y-o-y. Hong Kong, China had the largest amount of cross-border bond issuance during the quarter at USD2.1 billion, or 58.4% of the total (**Figure 5**). The Bank of China (Hong Kong) topped all

[6] Vietnamnet. 2017. *Central Bank of Vietnam Issues Bills to Shore Forex Reserves*. 21 July. http://english.vietnamnet.vn/fms/business/182443/central-bank-of-vietnam-issues-bills-to-shore-forex-reserves.html

Figure 5: Emerging East Asia Intraregional Bond Issuance by Market of Origin in the Third Quarter of 2017



Note: Data as of 30 September 2017.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

other issuers during the quarter, with a 1-year bond worth CNY9.0 billion at a coupon rate of 4.4%. Four other firms in Hong Kong, China had combined cross-border bond issuance amounting to USD794.3 million issued in Chinese renminbi and Singapore dollars.

The PRC had the second most cross-border bond issuance, with a total of USD456 million issued in Hong Kong dollars and Malaysian ringgit. The PRC accounted for a 12.4% share of total intraregional bond issuance. Among PRC-owned companies, Bewg M, a water treatment company, issued the first ever MYR-denominated *sukuk* in a multitranche offering worth MYR400 million.

Other emerging East Asian economies with intraregional bond issuances in Q3 2017 include Malaysia (8.9% of the regional total), Singapore (8.9%), the Republic of Korea (8.3%), and Indonesia (3.0%).

The largest cross-border bond issuance in Malaysia was Maybank's 3-year bond worth CNY1.0 billion with a coupon rate of 4.6%, followed by Malaysia's national mortgage corporation, Cagamas, with total bond issuances worth SGD241.5 million.

In Q3 2017, four financial firms from Singapore issued cross-border bonds amounting to USD327 million denominated in Indonesian rupiah (IDR420.7 billion), Philippine pesos (PHP700 million), and Hong Kong dollars (HKD2.2 billion). Three government-related entities of the Republic of Korea issued USD305.2 million worth of cross-border notes with tenors ranging from 3 years to 7 years that were denominated in Chinese renminbi (CNY650 million), Hong Kong dollars (HKD470 million), and Singapore dollars (SGD200 million).

Ciputra Development, a property development and management firm, was the sole cross-border bond issuer in Indonesia with a 4-year bond with a coupon rate of 4.85% amounting to SGD150 million.

In Q3 2017, the leading currency in terms of intraregional cross-border issuance was the Chinese renminbi, which accounted for a share of 62.0%. All other currencies had shares of 20% or less as follows: Hong Kong dollar (19.1%), Singapore dollar (15.1%), Malaysian ringgit (2.6%), Indonesian rupiah (0.9%), and Philippine peso (0.4%).

G3 currency bond issuance in emerging East Asia in January–September surpassed full-year 2016 issuance.

G3 currency bond issuance in emerging East Asia during January–September expanded 55.8% y-o-y, totaling USD240.8 billion **(Table 4)**.[7] This amount surpassed the total value of G3 currency bonds issued in full-year 2016 by about 10%. In Q3 2017, a total of USD76.4 billion was issued in the region, down 13.2% q-o-q but up 39.8% y-o-y.

The PRC accounted for the highest share of total regional G3 currency bond issuance in January–September at 62.7%, followed by Hong Kong, China (12.3%) and the Republic of Korea (9.9%). The Association of Southeast Asian Nations (ASEAN) economies accounted for a share of 15.2%, led by Indonesia.

Of the total G3 issuance during the period, USD222.5 billion was denominated in US dollars, USD15.8 billion in euros, and USD2.4 billion in Japanese yen.

The PRC's G3 currency bond issuance in January–September amounted to USD150.9 billion, up 72.6% from the same period in 2016. In Q3 2017, issuers from the PRC

[7] G3 currency bonds are denominated in either euros, Japanese yen, or US dollars.

Table 4: G3 Currency Bond Issuance

2016		
Issuer	**Amount (USD billion)**	**Issue Date**
China, People's Rep. of	**120.0**	
China Cinda Asset Management 4.45% Perpetual	3.2	30-Sep-16
Proven Honour Capital 4.125% 2026	2.0	6-May-16
China Minsheng Banking 4.95% Perpetual	1.4	14-Dec-16
Huarong Finance 3.625% 2021	1.4	22-Nov-16
Sinopec 2% 2021	1.3	29-Sep-16
Export–Import Bank of China 2% 2021	1.3	26-Apr-16
Export–Import Bank of China 0.25% 2019	1.2	2-Dec-16
Sinopec 1.75% 2019	1.1	29-Sep-16
Others	107.2	
Hong Kong, China	**29.2**	
China Overseas Finance 0% 2023	1.5	5-Jan-16
CK Hutchison 1.25% 2023	1.4	8-Apr-16
Others	26.3	
Indonesia	**17.9**	
Perusahaan Penerbit SBSN *Sukuk* 4.55% 2026	1.8	29-Mar-16
Indonesia (Sovereign) 2.625% 2023	1.6	14-Jun-16
Indonesia (Sovereign) 3.75% 2028	1.6	14-Jun-16
Indonesia (Sovereign) 5.25% 2047	1.5	8-Dec-16
Indonesia (Sovereign) 4.35 2027	1.3	8-Dec-16
Others	10.2	
Korea, Rep. of	**28.6**	
Korea Development Bank 3% 2026	1.0	13-Jan-16
Korea Eximbank 1.75% 2019	1.0	26-May-16
Korea Eximbank 2.625% 2026	1.0	26-May-16
Others	25.6	
Lao People's Democratic Rep.	**0.3**	
Malaysia	**6.0**	
Malaysia (Sovereign) *Sukuk* 3.179% 2026	1.0	27-Apr-16
Danga Capital 3.035% 2021	0.8	1-Mar-16
TNB Global Ventures Capital 3.244% 2026	0.8	19-Oct-16
Others	3.5	
Philippines	**2.7**	
Philippines (Sovereign) 3.7% 2041	2.0	1-Mar-16
Others	0.7	
Singapore	**9.6**	
BOC Aviation 3.875% 2026	0.8	27-Apr-16
DBS Group 3.6% Perpetual	0.8	7-Sep-16
Others	8.1	
Thailand	**1.2**	
Kasikorn Bank PLC 2.375% 2022	0.4	6-Oct-16
Others	0.8	
Emerging East Asia Total	**215.6**	
Memo Items:		
India	**8.4**	
Export-Import Bank of India 3.375% 2026	1.0	5-Aug-16
Others	7.4	
Sri Lanka	**2.9**	

January–September 2017		
Issuer	**Amount (USD billion)**	**Issue Date**
China, People's Rep. of	**150.9**	
Postal Savings Bank of China 4.50% Perpetual	7.3	27-Sep-17
China Evergrande Group 8.75% 2025	4.7	28-Jun-17
State Grid Overseas Investment Ltd 3.50% 2027	2.4	04-May-17
China Zheshang Bank 5.45% 2050	2.2	29-Mar-17
Kaisa Group Holdings Ltd 9.38% 2024	2.1	30-Jun-17
CNAC (HK) Synbridge Company Ltd 5.00% 2020	2.0	05-May-17
Others	130.3	
Hong Kong, China	**29.5**	
Radiant Access Limited 4.60% Perpetual	1.5	18-May-17
China Cinda Finance 3.65% 2022	1.3	09-Mar-17
Nanyang Commercial Bank 5.00% Perpetual	1.2	02-Jun-17
Others	25.5	
Indonesia	**19.3**	
Perusahaan Penerbit SBSN *Sukuk* 4.15% 2027	2.0	29-Mar-17
Perusahaan Listrik Negara 4.13% 2027	1.5	15-May-17
Minejesa Capital BV 4.63% 2030	1.2	10-Aug-17
Others	14.6	
Korea, Rep. of	**23.8**	
Republic of Korea (Sovereign) 2.75% 2027	1.0	19-Jan-17
Export-Import Bank of Korea 0.50% 2022	0.9	30-May-17
Others	21.9	
Lao People's Democratic Rep.	**0.03**	16-Aug-17
Malaysia	**3.4**	
Genting Overseas Holdings Limited Capital 4.25% 2027	1.0	24-Jan-17
CIMB Bank 1.93% 2020	0.6	15-Mar-17
CIMB Bank 3.26% 2022	0.5	15-Mar-17
Others	1.3	
Philippines	**3.1**	
Republic of the Philippines (Sovereign) 3.7% 2042	2.0	02-Feb-17
Banco de Oro Unibank 2.95% 2023	0.7	06-Sep-17
AYC Finance Limited 5.13% Perpetual	0.4	13-Sep-17
Singapore	**9.0**	
DBS Bank 0.38% 2024	0.9	23-Jan-17
DBS Group Holdings Ltd 1.71% 2020	0.8	08-Jun-17
Others	7.4	
Thailand	**1.7**	
PTTEP Treasury Center Company 4.60% Perpetual	0.5	17-Jul-17
Siam Commercial Bank 3.2% 2022	0.4	26-Jan-17
Others	0.8	
Emerging East Asia Total	**240.8**	
Memo Items:		
India	**11.8**	
Vedanta Resources PLC 6.375% 2022	1.0	30-Jan-17
Others	10.8	
Sri Lanka	**3.7**	
Republic of Sri Lanka (Sovereign) 6.20% 2027	1.5	11-May-17
Others	**2.2**	

USD = United States dollar.
Notes:
1. Data exclude certificates of deposits.
2. G3 currency bonds are bonds denominated in either euro, Japanese yen, or US dollar.
3. For 2016 data, figures were computed based on 31 December 2016 currency exchange rates. For January–September 2017 data, figures were computed based on 30 September 2017 currency exchange rates.

Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

raised USD46.6 billion from G3 currency bonds, with the single largest issuance coming from Postal Savings Bank of China in September amounting to USD7.3 billion. Despite the sovereign rating downgrade of the PRC by S&P Global in September, the state-run bank managed to sell the biggest USD-denominated bond in Asia outside Japan since 2014.[8] The perpetual bond carries a coupon rate of 4.5%. Analysts perceived that the rating cut had a minimal impact on the PRC's bond market given the favorable reception for the issuance from investors. There remains strong demand from global investors who are seeking higher yields from the PRC's USD-denominated securities while shrugging off risks flagged by rating agencies such as the PRC's soaring debt.

Hong Kong, China was the second largest source of G3 currency bond issuance in the region, comprising 12.3% of the total sales in January–September. Its total bond issuance in the first 9 months of 2017 amounted to USD29.5 billion, registering an increase of 67.4% y-o-y, with most issuance coming from the financial sector. In Q3 2017, bond sales amounted to USD7.5 billion, down from USD13.1 billion in the preceding quarter. During the quarter, the single largest bond sale was from CK Hutchison International with an issuance amount of USD1 billion, a coupon rate of 2.25%, and a maturity of 3 years.

In the Republic of Korea, G3 currency bond issuance expanded 13.4% y-o-y in January–September to reach USD23.8 billion. Bond issuance was dominated by government-related entities including the Export–Import Bank of Korea and Korea Development Bank, which both had the largest total sales during the period. In Q3 2017, total issuance summed to USD8.7 billion, with Hyundai Capital Services as the top issuer, selling a 5-year bond valued at USD0.6 billion with coupon rate of 3.0%.

G3 currency bond issuance from the ASEAN economies totaled USD36.5 billion in January–September, up 28.4% y-o-y. Indonesia continued to lead G3 currency bond issuance among ASEAN markets. The US dollar remained the preferred G3 currency, comprising 87.0% of total G3 bond issuance in the ASEAN region in Q3 2017, followed by the euro comprising 8.9% and the Japanese yen comprising 4.1%. All ASEAN economies saw higher G3 currency issuance in January–September compared to the same period in 2016 except Malaysia and the Lao People's Democratic Republic (Lao PDR), whose issuances were lower.

Indonesia's G3 currency bond issuance was valued at USD19.3 billion and comprised 52.8% of the total in the ASEAN region in January–September. As a percentage of total G3 currency issuance in emerging East Asia, Indonesia accounted for an 8.0% share, which was nearly at par with the Republic of Korea's share. Issuances were largely from the Government of Indonesia, which included Perusahaan Penerbit's single sale of USD2 billion worth of bonds. Issuers from Indonesia sold a total of USD7.8 billion of G3 currency bonds in Q3 2017, the highest level of quarterly issuance in 2017. The single largest G3 currency bond issuance came from Minejesa Capital with its sale of a 13-year bond amounting to USD1.2 billion and carrying a coupon rate of 4.63%.

Singapore's total G3 currency bond issuance reached USD9 billion in the first 9 months of 2017, mainly from the financial sector, which predominantly comprises banks. Of the amount, USD3.1 billion was issued in Q3 2017. Singapore was the second largest G3 currency bond issuer among ASEAN economies.

Issuers from the Philippines raised a total of USD3.1 billion from the sale of G3 currency bonds in January–September. The issuances were all USD-denominated, coming from both the government and corporate segments, with the former having total issuance of USD2 billion from a single sale in February, and the latter having total sales of USD1.1 billion in September. The corporate issuances comprised BDO Unibank's sale of a 5.5-year USD0.7 billion bond with a coupon rate of 2.95% and AYC Finance's perpetual bond amounting to USD0.4 billion with a coupon rate of 5.13%. BDO Unibank's sale is the single largest issuance by a Philippine bank to date.[9] According to BDO Unibank, the issuance is part of its liability management initiative to tap long-term funding sources to support its lending operations and general corporate purposes.

In Thailand, total G3 currency bond issuance in January–September amounted to USD1.7 billion, all of which was denominated in US dollars and the bulk of which,

[8] Bloomberg. 2017. *China Bulls Ignore Downgrade in Biggest Asia Bond Since 2014*. 22 September.
[9] Reuters. 2017. *BDO to Raise $700 Mln in Largest Notes Issue by a Philippine Bank*. https://www.reuters.com/article/bdo-unibank-notes/bdo-to-raise-700-mln-in-largest-notes-issue-by-a-philippine-bank-idUSL4N1LH21D

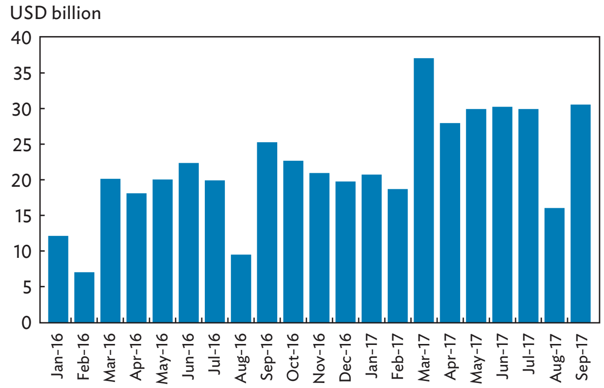
USD1.2 billion, was issued in Q3 2017. The largest issuance in the first 9 months of the year came from PTTEP Treasury Center in July when the oil exploration and production firm issued a perpetual bond of USD0.5 billion with a coupon rate of 4.6%.

Malaysia and the Lao PDR had less G3 currency bond issuance in January–September than in the same period in 2016. Malaysia's issuance dropped 16.4% y-o-y to USD3.4 billion during the first 9 months of the year. The decline can be partially attributed to the lingering effect of the clampdown on the offshore trading of the Malaysian ringgit, which had a negative impact on Malaysia's bond market. Total G3 currency bond sales in Q3 2017 registered USD0.5 billion, the lowest among its quarterly issuances in 2017, and came mostly from banks. Maybank's USD0.2 billion zero-coupon bond sale in July was the largest in Q3 2017.

The Lao PDR was not active in issuing G3 currency bonds in Q3 2017. Its sole issuance in January–September was in August when KOLAO Holdings sold a USD30 million bond with coupon rate of 5.5%. Last year, the Lao PDR issued USD312 million worth of G3 currency bonds via a multitranche sale by an energy firm.

Monthly G3 currency bond issuance from emerging East Asia has been steady at around USD29 billion since April (**Figure 6**). However, in August, a sharp drop of nearly 50% month-on-month (m-o-m) occurred, which drove down total bond issuance from the region to USD16 billion. The plunge can be attributed to a less active market in the PRC and Hong Kong, China during the month. All other economies in the region also experienced declines in bond issuances in August, ranging from about 6% m-o-m to about 93% m-o-m. These declines were reversed in September when total G3 currency bond issuance from the region surged to USD30.5 billion. In 2016, a sharp m-o-m drop was also observed in August, which was followed by a m-o-m surge in September.

Figure 6: G3 Currency Bond Issuance in Emerging East Asia



USD = United States dollar.
Notes:
1. Emerging East Asia comprises the People's Republic of China; Hong Kong, China; Indonesia; the Republic of Korea; the Lao People's Democratic Republic; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.
2. G3 currency bonds are bonds denominated in either euros, Japanese yen, or US dollars.
3. Figures were computed based on 30 September 2017 currency exchange rates and do not include currency effects.

Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

Government bond yield curves rose in most emerging East Asian markets as continued global growth pushed up yields in advanced economies.

The global economy is strengthening as advanced economies grow increasingly more confident that economic gains will be sustained. The US economy continues to post gains, with advanced estimates showing that Q3 2017 GDP grew at an annual rate of 3.0% after an increase of 3.1% in Q2 2017. The revised 3.1% y-o-y GDP growth in Q2 2017 was higher than the 2.6% y-o-y advanced estimate. The US labor market also continues to strengthen, with the unemployment rate declining to 4.1% in October from 4.2% in September.

In the eurozone, preliminary flash estimates indicate that GDP grew at an accelerated rate of 2.5% y-o-y in Q3 2017 versus 2.3% y-o-y in the prior quarter and the Q2 2017 GDP growth flash estimate of 2.2%.

Economic forecasts also indicate that improving trends in global economic growth are expected to continue. The Federal Reserve assessed that the recent hurricanes in the US were expected to dampen economic growth only in the short-term. In a speech given by Federal Reserve Chair Janet Yellen in October, she said that US economic growth is still expected to exceed its potential in the second half of 2017. The Federal Reserve's 31 October–1 November monetary policy meeting statement indicated that the labor market continues to strengthen and the economy is growing despite the impacts of hurricanes.

In the eurozone, the European Central Bank's macroeconomic forecasts were upgraded in September, with full-year 2017 GDP expected to grow 2.2% y-o-y versus 1.9% y-o-y in the previous forecast. The Bank of Japan similarly upgraded its 2017 forecast on 31 October, with GDP now projected to grow 1.9% y-o-y versus a prior forecast of 1.8% y-o-y.

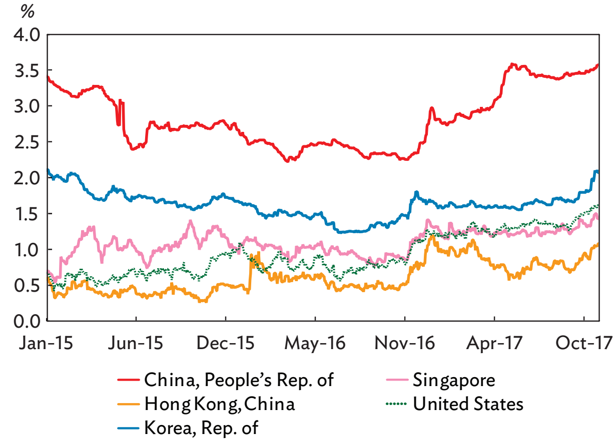
The sustainability of global economic growth has led some central banks in advanced economies, led by the Federal Reserve, to begin scaling back financial stimulus. In its monetary policy meeting in September, the Federal Reserve kept its key policy rate target unchanged but announced that the unwinding of its balance sheet would begin in October. In the 31 October–1 November meeting, the Federal Reserve again maintained its key policy rate target and noted that balance sheet normalization was proceeding.

The European Central Bank followed suit in October, announcing that it would begin to taper its monthly asset purchases from EUR60 billion to EUR30 billion starting in January 2018. The Bank of Japan, however, kept its monetary policy unchanged in its 31 October meeting.

The strong global economic growth is also translating into gains in developing economies. While Q3 2017 GDP releases have been limited, the few markets in emerging East Asia that have released data so far have been encouraging. The PRC had GDP growth of 6.8% y-o-y in Q3 2017, which was only marginally lower than the 6.9% y-o-y growth in the previous quarter despite the ongoing deleveraging. In the Republic of Korea, preliminary estimates for Q3 2017 showed GDP growing at an annual rate of 3.6% versus 2.9% in the previous quarter. In Singapore, GDP grew 4.6% y-o-y in Q3 2017, up from 2.9% y-o-y in Q2 2017. In Viet Nam, GDP growth climbed to 7.5% y-o-y in Q3 2017 from a revised 6.3% y-o-y hike in the previous quarter.

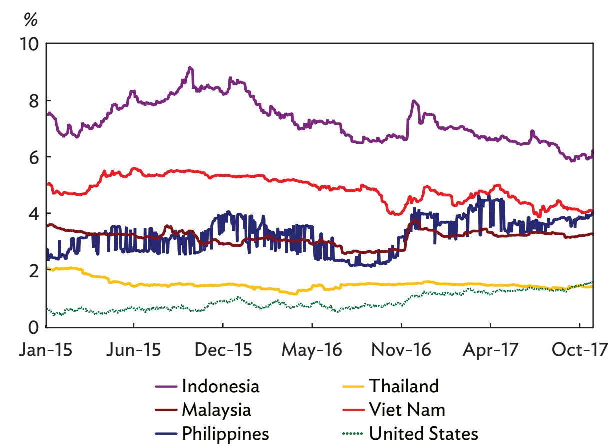
The strong global economic growth and gradual normalization of monetary policies in the US and the eurozone have pushed bond yields upward in advanced economies. Yields in emerging East Asia followed suit, tracking movements in advanced economies while also reflecting better growth prospects domestically. Hong Kong, China, whose yields closely track US yields, and the Republic of Korea showed the most dramatic rise in their 2-year yields among all emerging East Asian markets between 1 September and 31 October (**Figure 7a**). The Republic of Korea also had a steep rise due to increased expectations of a rate hike. In the PRC,

Figure 7a: 2-Year Local Currency Government Bond Yields



Note: Data as of 31 October 2017.
Source: Based on data from Bloomberg LP.

Figure 7b: 2-Year Local Currency Government Bond Yields



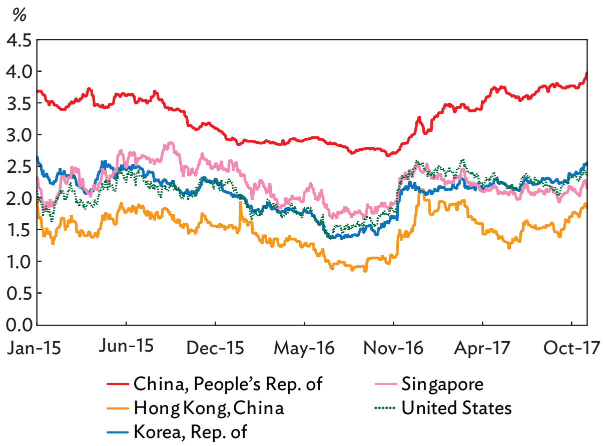
Note: Data as of 31 October 2017.
Source: Based on data from Bloomberg LP.

the yield rise was mostly driven by the government's deleveraging campaign.

Gains in the 2-year yield were noted in other markets between 1 September and 31 October. Indonesia initially experienced a decline during the review period before yields rose in the latter part of October (**Figure 7b**). The only market to experience an overall decline during the review period was Viet Nam, mostly due to monetary easing conducted by the State Bank of Vietnam.

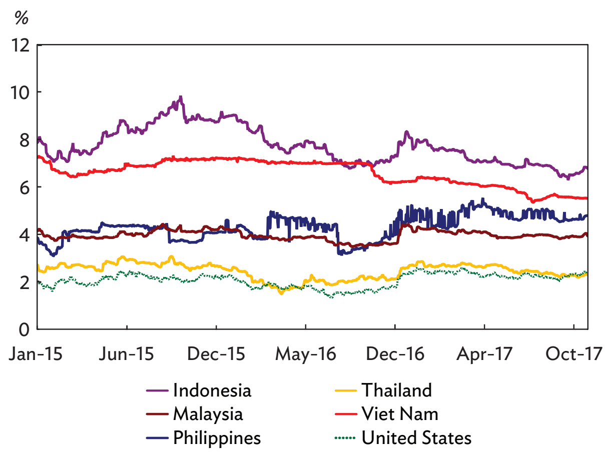
Movement in the 10-year yield was similar to that of the 2-year yield in all markets (**Figures 8a, 8b**).

Figure 8a: 10-Year Local Currency Government Bond Yields



Note: Data as of 31 October 2017.
Source: Based on data from Bloomberg LP.

Figure 8b: 10-Year Local Currency Government Bond Yields



Note: Data as of 31 October 2017.
Source: Based on data from Bloomberg LP.

Between 1 September and 31 October, nearly all government bond markets in emerging East Asia saw a rise in their yield curves (**Figure 9**). The yield curve shifted upward for all tenors in the PRC; Hong Kong, China; the Republic of Korea; and Singapore. While Hong Kong, China's and Singapore's yield movements were largely due to these markets tracking movements in the US, domestic factors pushed up yields in the PRC and the Republic of Korea. In the case of the PRC, continued deleveraging has pushed yields up, while an upgrade in the GDP growth outlook and an increase in the likelihood of a rate hike drove yield gains in the Republic of Korea.

Yields rose for most tenors in Indonesia, Malaysia, and Thailand. In the Philippines, yield movements were mixed.

Inflation has largely trended downward in Indonesia; Hong Kong, China; and Singapore (**Figure 10a**). In Viet Nam, inflation had been on a downward trend but recently has shown some spikes. Other markets saw mostly rising inflation, albeit with recent declines in the PRC and the Republic of Korea **(Figure 10b**).

Only Hong Kong, China experienced a rise in policy rates during the review period given that its monetary policy tracks changes in the US policy rate (**Figure 11a**). Both Indonesia and Viet Nam reduced their key policy rates (**Figure 11b**). Indonesia cut its key policy rate by 25 basis points (bps) in August and by another 25 bps in September, while Viet Nam cut its policy rate by 25 bps in July. While most central banks in emerging East Asia have kept policy rates unchanged, a number have indicated that domestic growth is expected to be sustained.

In particular, market participants view that the Bank of Korea is increasingly likely to raise the policy rate following an upgrade of its 2017 GDP forecast from 2.8% y-o-y to 3.0% y-o-y. In addition, a dissenting vote was recorded in favor of raising the policy rate during the central bank's recent decision to keep policy rates steady.

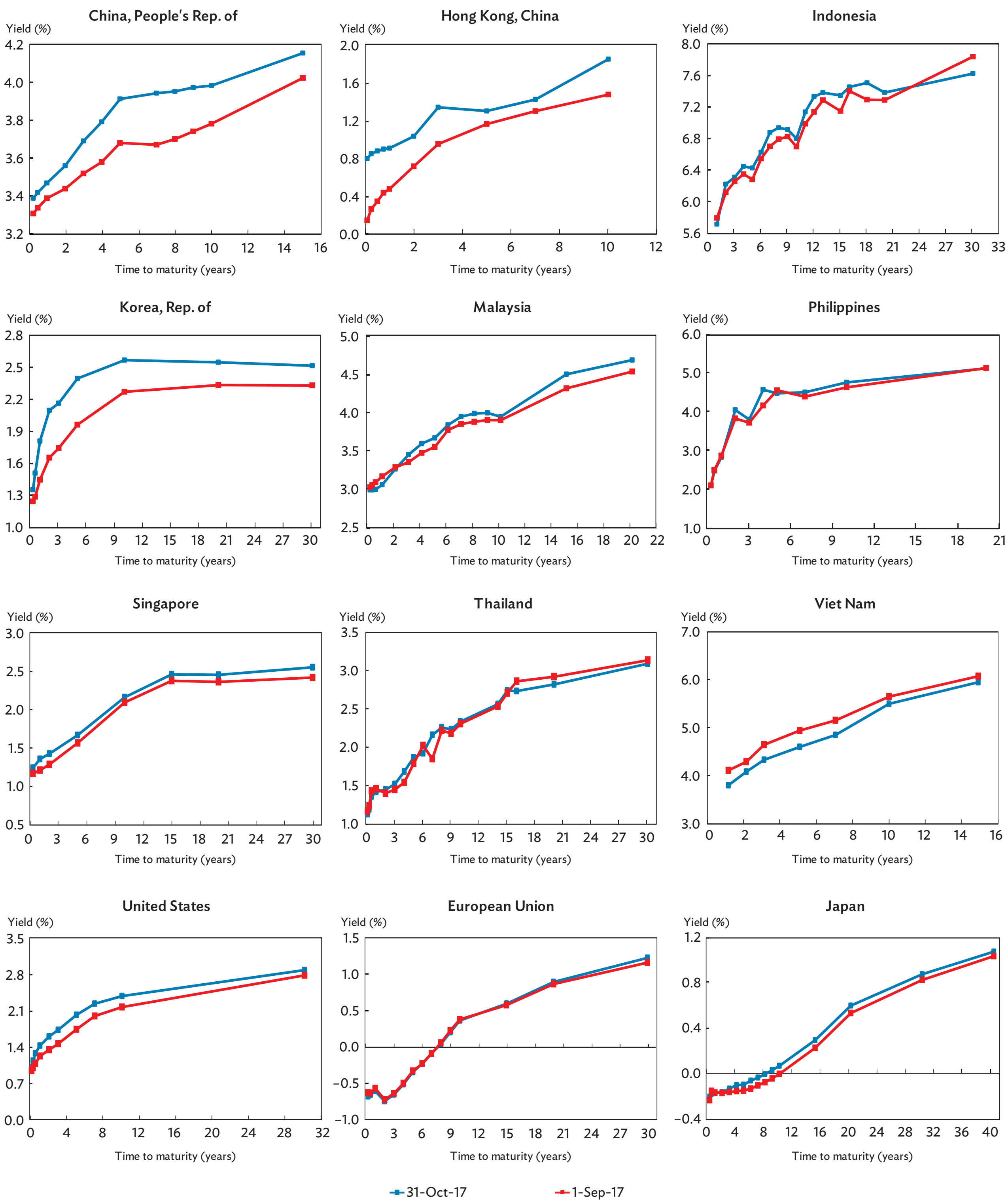
The 2-year versus 10-year yield spread rose in all markets except in the Republic of Korea, the Philippines, Singapore, and Thailand (**Figure 12**).

The AAA-rated corporate versus government yield spread fell in the PRC and rose in the Republic of Korea.

The spread between AAA-rated corporate yields and government yields narrowed between 1 September and 31 October in the PRC as investors sought AAA-rated corporates for their higher yields amid concerns over deleveraging. In the Republic of Korea, the spread between AAA-rated corporate and government yields rose, while in Malaysia movements were mixed (**Figure 13a**).

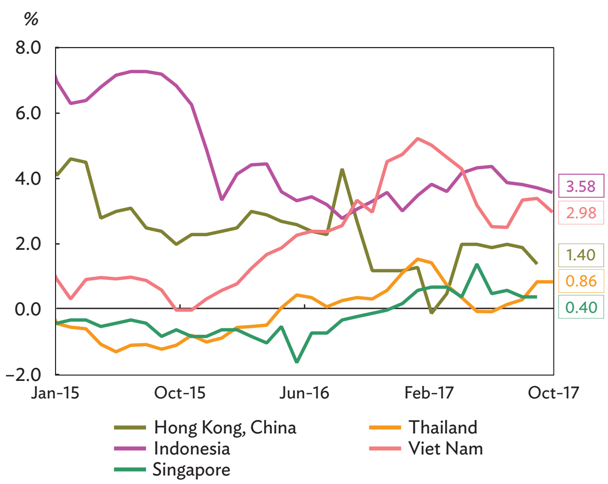
The spread between AAA-rated corporates and lower-rated corporates was broadly unchanged in the PRC and the Republic of Korea, and fell in Malaysia (**Figure 13b**).

Figure 9: Benchmark Yield Curves—Local Currency Government Bonds



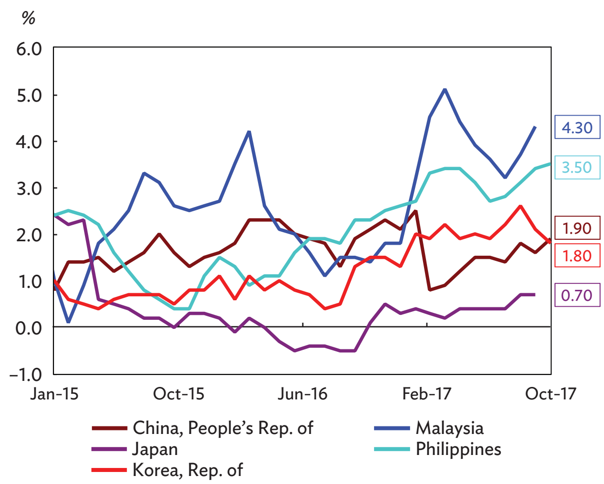
Source: Based on data from Bloomberg LP.

Figure 10a: Headline Inflation Rates



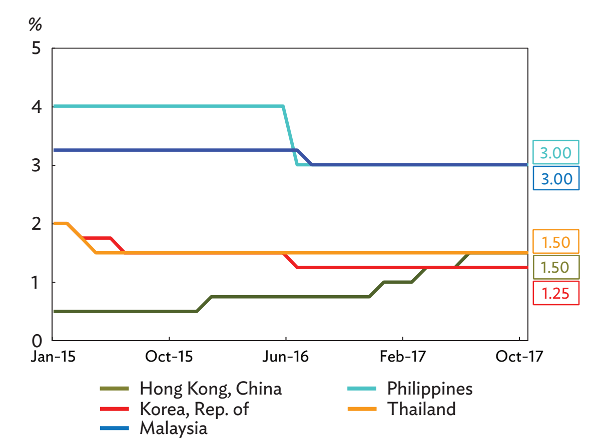
Note: Data as of October 2017 except for Hong Kong, China; and Singapore (September).
Source: Based on data from Bloomberg LP.

Figure 10b: Headline Inflation Rates



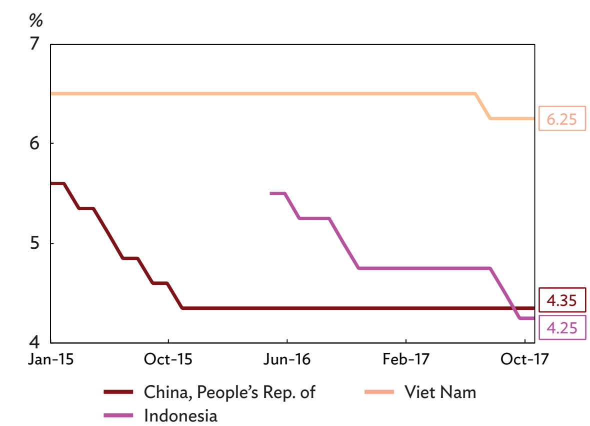
Note: Data as of October 2017 except for Japan and Malaysia (September).
Source: Based on data from Bloomberg LP.

Figure 11a: Policy Rates



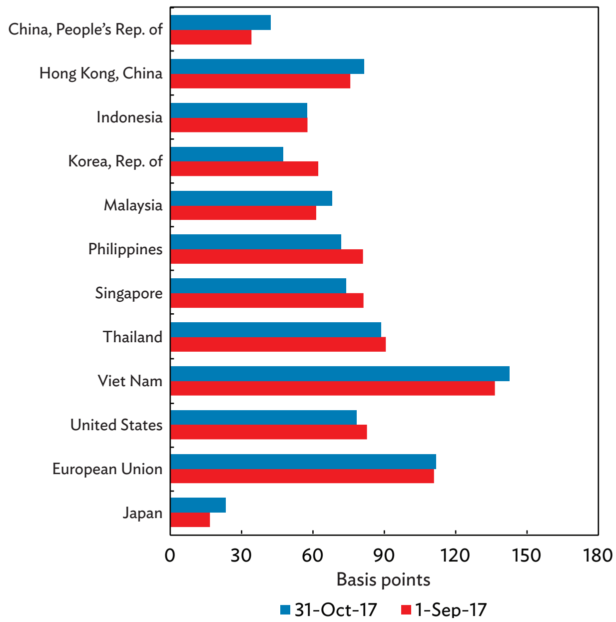
Notes:
1. Data as of 31 October 2017.
2. The policy rate of the Philippines was adjusted to 3.0% from 4.0% in June 2016 following the shift in the Bangko Sentral ng Pilipinas' monetary operations to an interest rate corridor system.
Source: Based on data from Bloomberg LP.

Figure 11b: Policy Rates



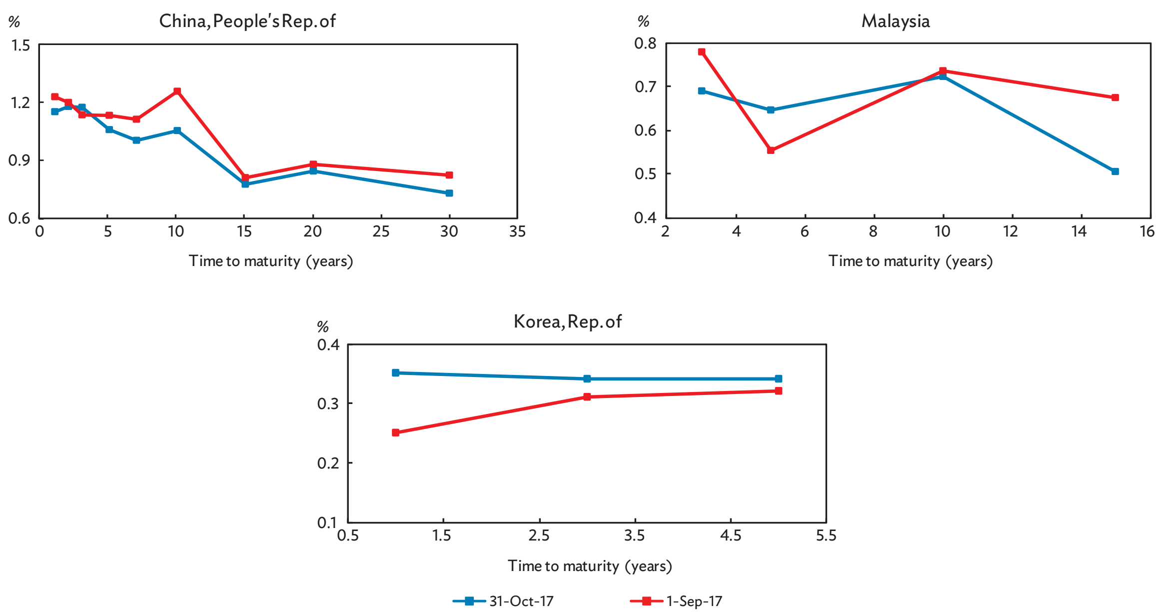
Notes:
1. Data as of 31 October 2017.
2. Bank Indonesia shifted its policy rate to the 7-day reverse repurchase rate effective 19 August 2016.
Source: Based on data from Bloomberg LP.

Figure 12: Yield Spreads Between 2-Year and 10-Year Government Bonds



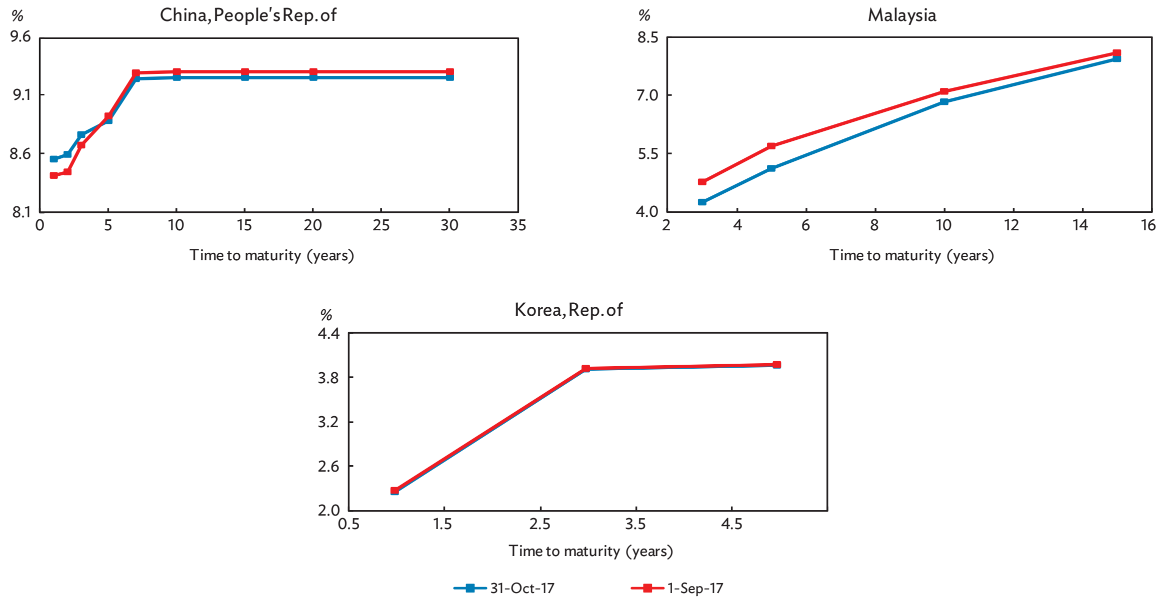
Source: Based on data from Bloomberg LP.

Figure 13a: Credit Spreads—Local Currency Corporates Rated AAA vs. Government Bonds



Notes:
1. Credit spreads are obtained by subtracting government yields from corporate indicative yields.
2. For Malaysia, data on corporate bond yields are as of 30 August 2017 and 31 October 2017.
Sources: People's Republic of China (*Wind Information*), Republic of Korea (*EDAILY BondWeb*), and Malaysia (Bank Negara Malaysia).

Figure 13b: Credit Spreads—Lower-Rated Local Currency Corporates vs. AAA



Notes:

1. For the People's Republic of China and the Republic of Korea, credit spreads are obtained by subtracting corporate indicative yields rated AAA from corporate indicative yields rated BBB+.
2. For Malaysia, credit spreads are obtained by subtracting corporate indicative yields rated AAA from corporate indicative yields rated BBB.
3. For Malaysia, data on corporate bond yields are as of 30 August 2017 and 31 October 2017.

Sources: People's Republic of China (*Wind Information*), Republic of Korea (*EDAILY BondWeb*), and Malaysia (Bank Negara Malaysia).

Policy and Regulatory Developments

People's Republic of China

People's Bank of China Removes Reserve Requirement Ratio on Forward Transactions

In September, the People's Bank of China removed reserve requirements imposed on the trading of foreign currency forwards. Previously, the ratio was set at 20%.

China Securities Regulatory Commission Imposes Limits on Money Market Funds

The China Securities Regulatory Commission (CSRC) tightened regulations on money market funds in September. Under the new guidelines, money market funds are limited in their lending to a single institution. The rules require money market funds to limit their holdings of deposits, bonds, and other assets from a single bank to no more than 10% of the bank's net assets. Additionally, assets from a single bank cannot exceed 2% of the outstanding assets of the mutual fund. Money market funds also cannot hold investments issued by institutions with a credit rating lower than AAA.

Hong Kong, China

Hong Kong, China Includes US Dollar Bonds Issued by the People's Republic of China as Collateral for Renminbi Liquidity Facility

In November, the Hong Kong Monetary Authority declared that the USD-denominated bonds issued by the People's Republic of China in October will be allowable as collateral for the Renminbi Liquidity Facility that Hong Kong, China banks can tap as a source of renminbi liquidity.

Indonesia

Bank Indonesia Allows Euro Swaps

In October, Bank Indonesia allowed hedging transactions involving the euro. The minimum transaction size for euro swaps is EUR1 million with terms of 3 months and 6 months. Earlier in July, the central bank allowed hedging transactions for Japanese yen swaps. These measures are expected to reduce dependence on the US dollar for trade and investment activities.

Indonesia's 2018 State Budget Bill Approved

In October, the House of Representatives approved the government's proposed 2018 state budget, which estimates revenue amounting to IDR1,894.7 trillion and expenditure of IDR2,220 trillion. The budget deficit is projected to reach an equivalent of 2.2% of GDP. The underlying macroeconomic assumptions for the 2018 state budget include (i) annual GDP growth of 5.4%, (ii) annual inflation of 3.5%, (iii) an exchange rate of IDR13,400 per USD1, (iv) a 3-month Treasury bill annual rate of 5.3%, and (v) an Indonesian crude oil price of USD48 per barrel.

Republic of Korea

Financial Services Commission Announces Comprehensive Measures for Household Debt Management

In October, the Financial Services Commission announced new measures to manage the Republic of Korea's growing household debt. These measures are intended to "reduce financial risks in the short-term; and to strengthen macroeconomic soundness and household income and repayment ability in the mid- to long-term." The measures include providing tailored assistance based on a borrower's capacity to repay debt. To manage risks affecting consumption and economic growth, the government will manage the household debt aiming to bring down and maintain its growth rate over the next 5 years at below 8.2%. The government will also adjust the calculation of debt-to-income ratios and introduce a debt service ratio to evaluate the credit risk profiles of borrowers more accurately. Lastly, the government will take measures to manage household debt from sectors that are more vulnerable to financial risk.

Malaysia

Malaysian Government Sets Budget for 2018

Prime Minister Najib Razak announced Malaysia's 2018 budget on 27 October, which amounted to MYR280.3 billion, or 7.5% higher than in 2017. A total of MYR234.3 billion will be allotted for operating expenditure and MYR46 billion for development. While the spending plan has increased, revenue collection is also projected to expand 6.4% to MYR239.9 billion in 2018, allowing the government to maintain its fiscal consolidation target. Also announced was a cut of 2 percentage points to the personal income tax for those earning between MYR20,000 and MYR70,000 annually.

Philippines

Bangko Sentral ng Pilipinas Streamlines Regulations on Bank and Quasi-Bank Bond Issuance

On 6 October, Bangko Sentral ng Pilipinas (BSP) amended its regulations on the issuance of bonds and commercial paper by banks and quasi-banks in order to streamline requirements and provide greater flexibility in tapping the capital market as an alternative funding source. According to the central bank, the amendments include removal of the minimum bond features, such as the requirement on eligible collateral, which can constrain banks and quasi-banks from issuing debt securities. The revised regulations reiterate compliance with the securities law and its implementing rules and regulations.

Bangko Sentral ng Pilipinas, Bureau of the Treasury, and the Securities and Exchange Commission Set to Launch a Repurchase Market for Banks in November

In October, BSP announced the rollout of the repurchase market for banks in November. Together with the Bureau of the Treasury (BTr) and the Securities and Exchange Commission, this initiative forms part of the capital market road map presented by government agencies in August with the goal of deepening the domestic debt market. These agencies are targeting to implement a series of financial reforms within 18 months. According to the BSP, the initial phase would focus on improving benchmark markets as this is critical for pricing risk assets and other capital market instruments. In addition, the BTr has also been assessing the performance of Government Securities Eligible Dealers in the primary and secondary markets, which will be the basis for recognizing market-makers. The BTr will announce the preliminary market-makers and launch the enhanced Government Securities Eligible Dealers program early next year.

Singapore

Singapore and the People's Republic of China Strengthen Capital Market Cooperation

In a second supervisory roundtable held on 3 November, the Monetary Authority of Singapore and the CSRC strengthened cooperation on capital market development and supervision. In particular, both sides agreed to collaborate on facilitating the development of their derivatives markets, set up a framework in supervising fund managers, and support qualified companies based in the People's Republic of China to list in Singapore. The roundtable meeting aimed to allow for future collaboration by enabling the Monetary Authority of Singapore and the CSRC to have a greater understanding of each other's regulatory framework.

Thailand

Public Debt Management Office Allots Special Period to Foreign Entities for THB-Denominated Bond Issuance Applications

The Public Debt Management Office (PDMO) regularly accepts applications for Thai baht bond issuance by foreign firms three times a year in March, July, and November. In a measure to further ease the appreciation of the Thai baht, the PDMO in September opened an additional period (6 September–6 October) for foreign entities to apply for permission to issue THB-denominated bonds. Upon approval, foreign entities must comply with the conditions that (i) issued bonds must carry a tenor of 3 years or less, (ii) the issue date must fall between 1 November 2017 and 31 March 2018, and (iii) proceeds must be used for either domestic transactions in baht or onshore USD–THB spot exchange.

Public Debt Management Office Announces Funding Plan for Fiscal Year 2018

In September, PDMO conducted a public dialogue and announced its funding plan for fiscal year 2018, which will help finance its budget deficit projected at THB450 billion. About 56.0% of the borrowing plan will be financed through the issuance of benchmark bonds with maturities of 5, 10, 15, 20, 30, and 50 years. PDMO also plans to issue savings bonds and short-term debt securities, and conduct a debt switch program.

Viet Nam

Government Approves Road Map for Bond Market Development

In August, the Government of Viet Nam approved a 3-year road map for bond market development, with the aim of aligning the bond market with the money market and capital market. Under the road map, the share of bonds to GDP is expected to increase to 45% by 2020 and to 65% by 2030.

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.

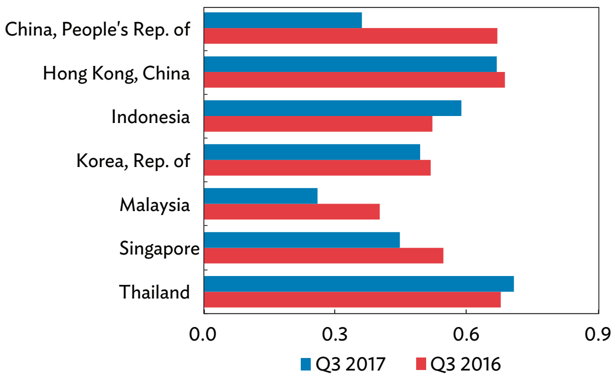
Quantitative Indicators for Government Bond Markets

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.

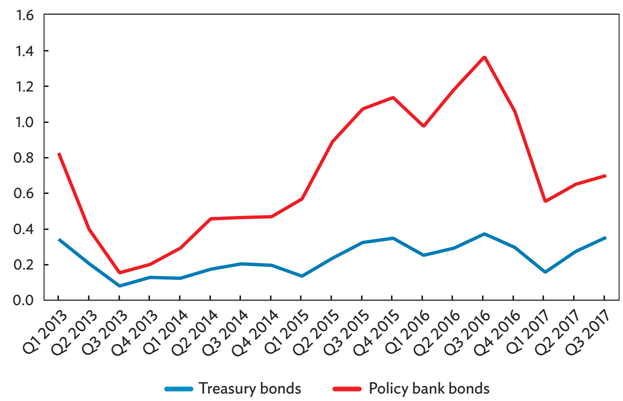
The average trading size for Treasury bonds fell to CNY51.7 million in 2017 from CNY73.8 million in 2016, while the average trading size for policy bank bonds fell to CNY51.7 million from CNY108.1 billion.

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,

Table 8: Local Currency Government Bond Survey Results—Indonesia

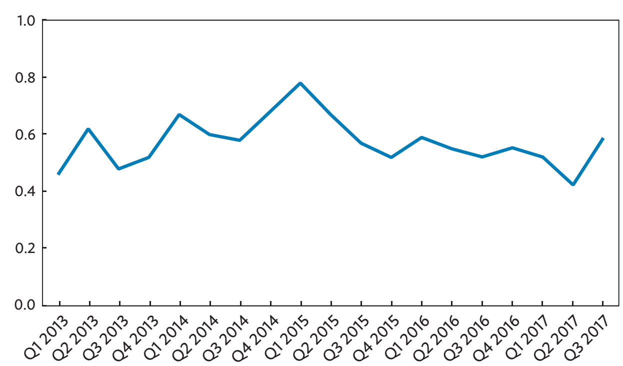
	Treasury Bills	Treasury Bonds
On-the-Run		
Bid–Ask Spread (bps)	18.3	3.3
Average Trading Size (IDR billion)	78.6	25.0
Off-the-Run		
Bid–Ask Spread (bps)	15.0	8.6
Average Trading Size (IDR billion)	35.0	17.0

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.

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.

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.

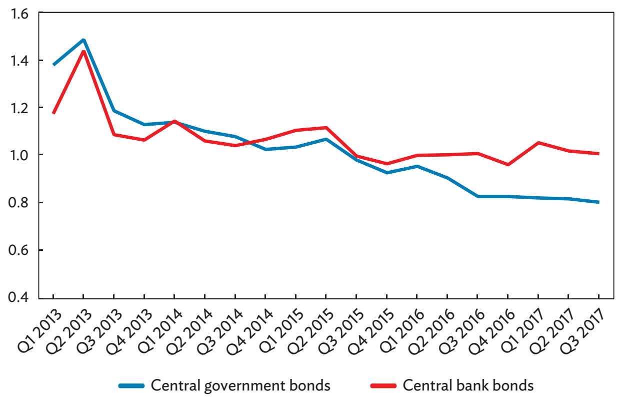
On the domestic front, uncertainties arose as the market anticipated increased spending by the new administration. Some survey participants noted the possibility of an increased bond supply to fund the 5-year economic plan, as well as additional debt issuance by government agencies. Meanwhile, others 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.

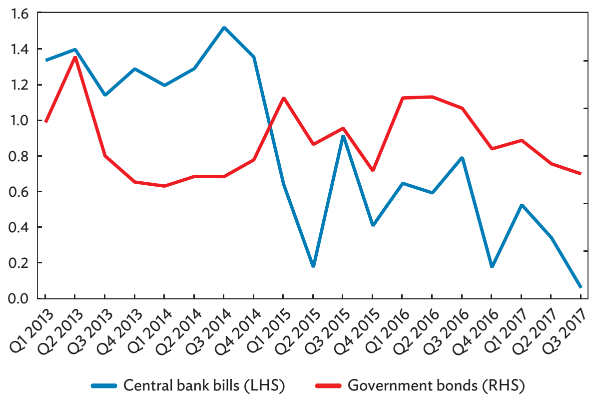
Table 10: Local Currency Government Bond Survey Results—Malaysia

	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

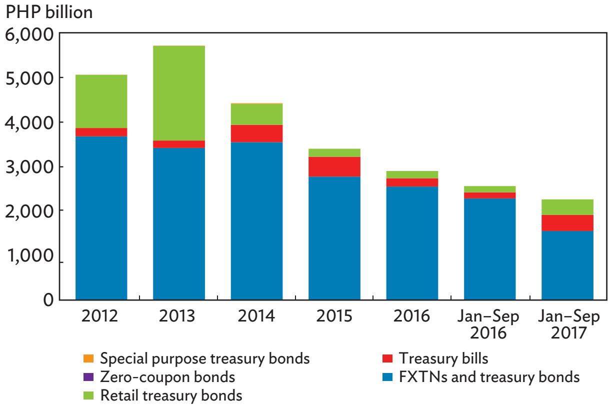
	Treasury Bonds	Treasury Bills
On-the-Run		
Bid–Ask Spread (bps)	3.7	5.3
Average Trading Size (PHP million)	85.7	85.0
Off-the-Run		
Bid–Ask Spread (bps)	12.0	15.6
Average Trading Size (PHP million)	43.3	34.0

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

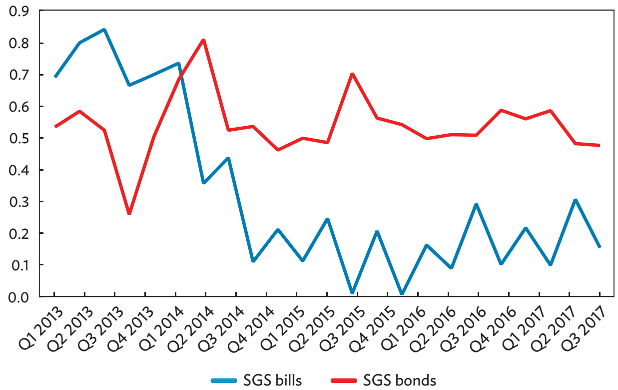
	SGS Bonds	SGS Bills	MAS Bills
On-the-Run			
Bid–Ask Spread (bps)	3.0	2.8	4.4
Average Trading Size (SGD million)	10.0	17.5	17.5
Off-the-Run			
Bid–Ask Spread (bps)	3.5	3.0	5.3
Average Trading Size (PHP million)	6.3	17.5	17.5

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

	Govern-ment 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.

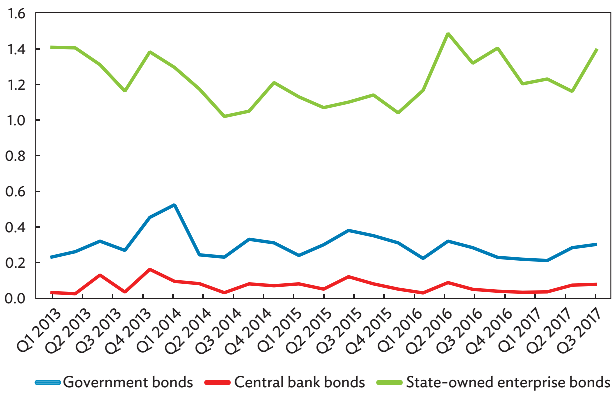
across all debt securities, excluding the average trading size of Government bonds which fell in 2017. Meanwhile, the average trading size was still higher for short-term securities versus those with long-term tenors (**Table 13**).

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

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.

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

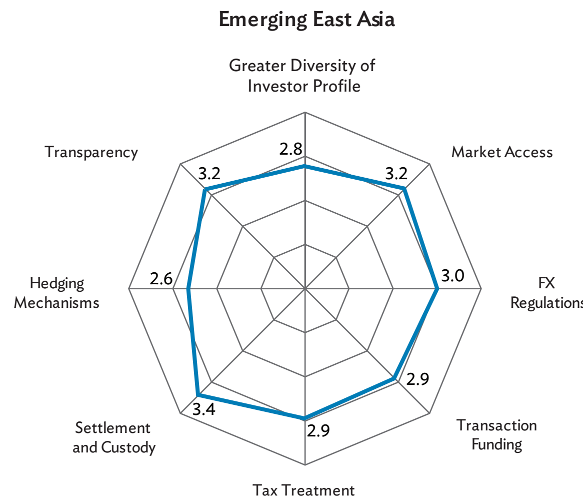
In addition to quantitative indicators of liquidity such as bid–ask spreads, the 2017 *AsianBondsOnline* liquidity survey also examined qualitative factors impacting liquidity in emerging East Asian bond markets. The survey solicited ratings from market participants about their perceptions of the current 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

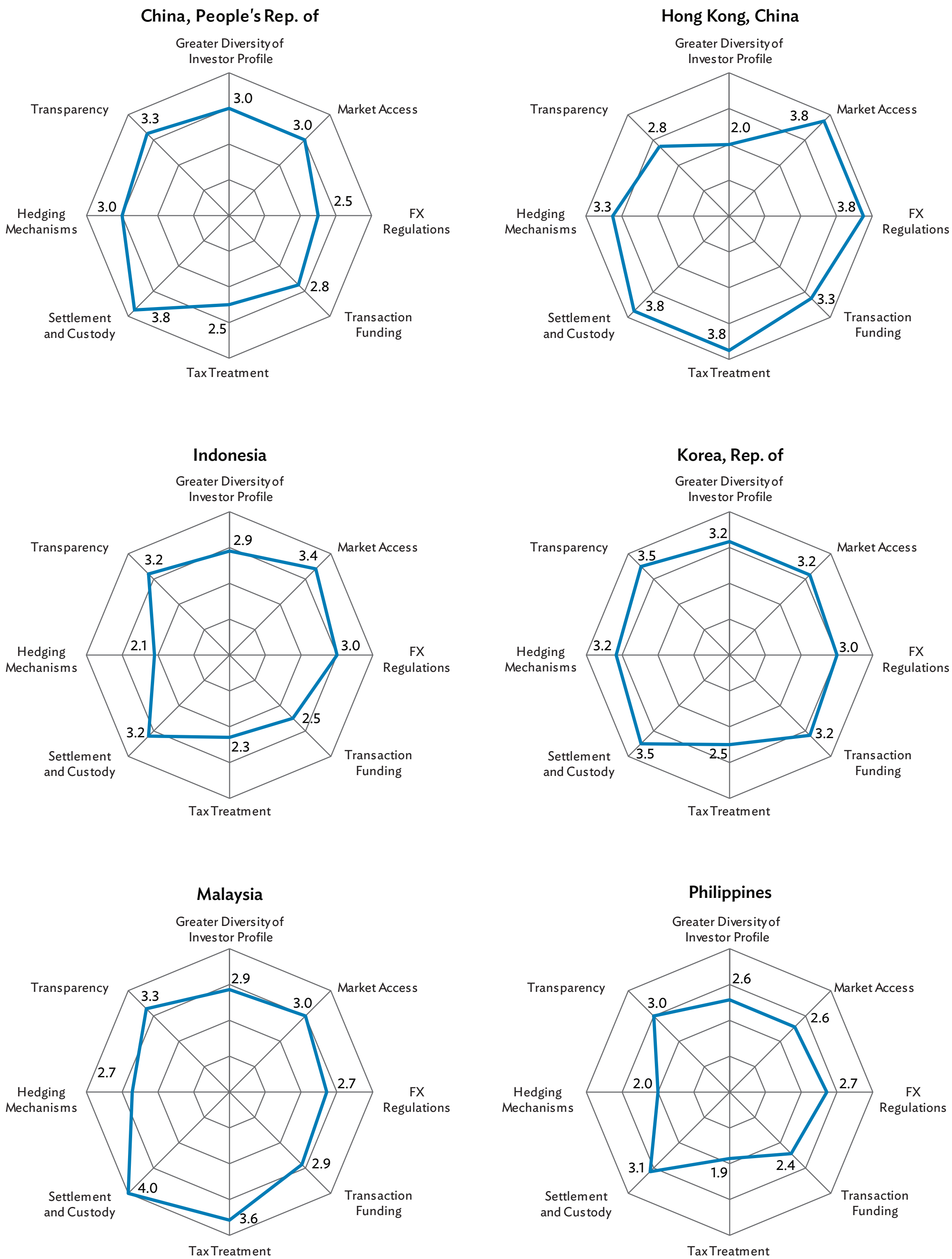


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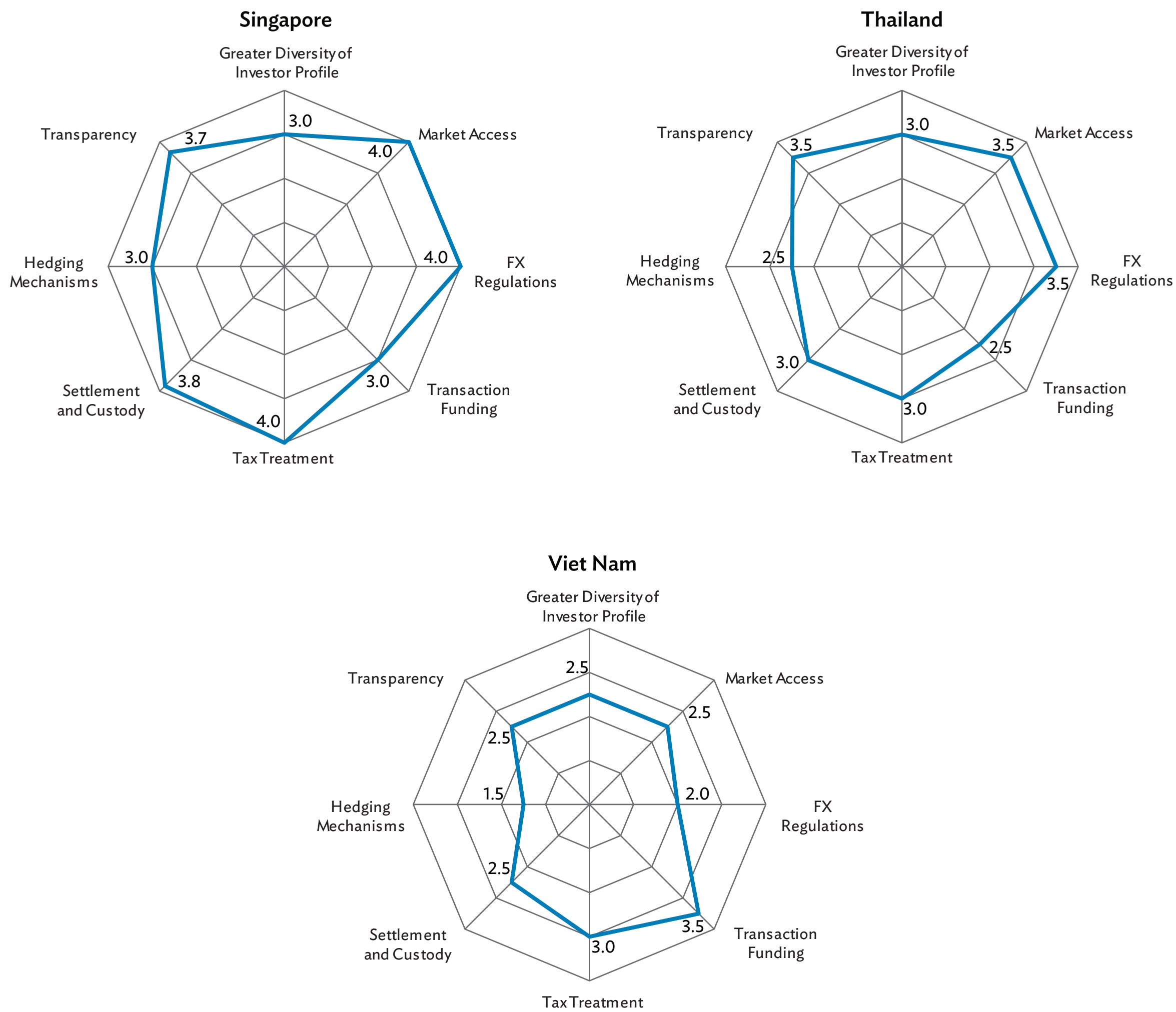
Figure 23 *continued*



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.

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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.

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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

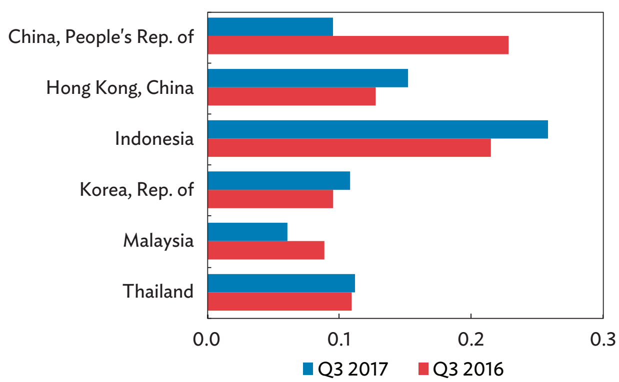
		PRC	HKG	INO	KOR	MAL	PHI	SIN	THA	VIE	Regional
Typical Issue Size of Corporate Bonds	Average (USD million)	169.0	51.6	51.0	41.7	107.0	106.1	160.7	53.3	33.0	85.9
Typical Bid–Ask Spread for Corporate Bonds	Average (bps)	10.4	18.8	15.9	3.8	7.2	41.7	14.2	5.0	–	14.6
	SD	8.5	15.9	8.1	4.2	3.8	14.4	5.2	0.0	–	12.2
	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**).

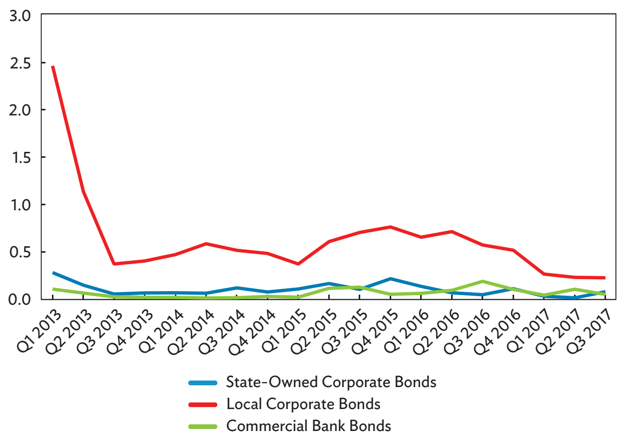
The bid–ask spread for commercial bank bonds rose to 20.8 bps in 2017 from 5 bps in 2016. Other corporate bond categories showed declines, with the largest decline seen for commercial paper, where the bid–ask spread fell to 5.8 bps from 10.0 bps. State-owned enterprise

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

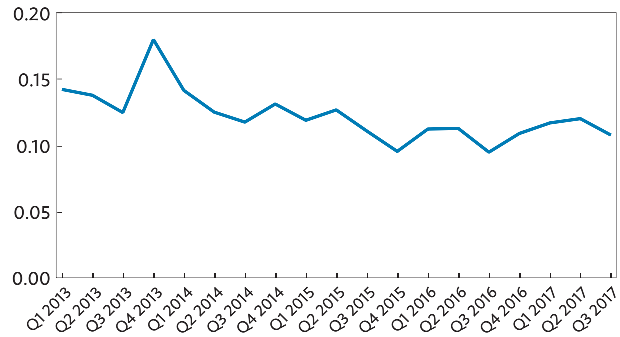
	Corporate Bonds
Average Issue Size (KRW billion)	47.8
Bid–Ask Spread (bps)	3.8
Average Trading Size (KRW billion)	9.7

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

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*.

as insurance companies and public funds, also drive the liquidity of corporate bonds.

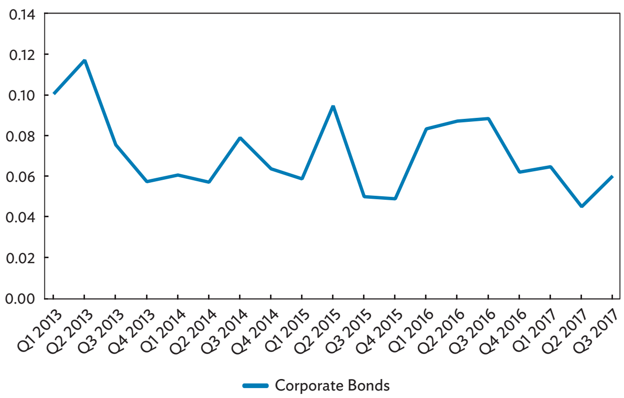
To further improve liquidity in the corporate bond market, a survey respondent suggested introducing hedging instruments like credit default swaps.

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.

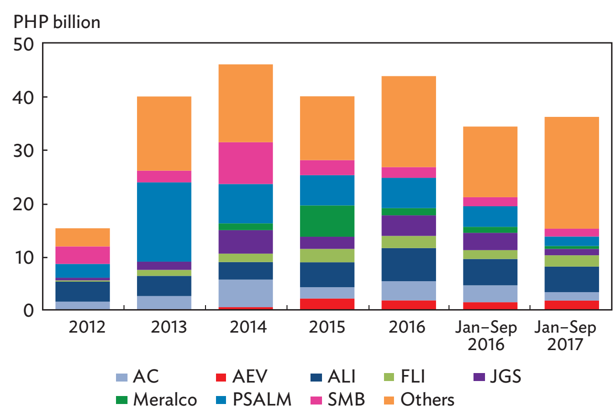
Philippines

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.

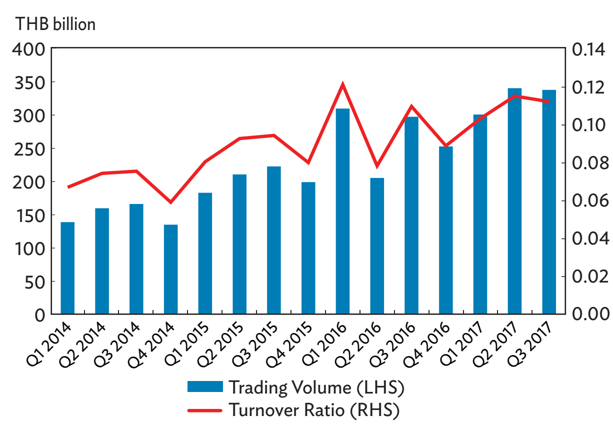
The average bid–ask spread for Thai LCY corporate bonds decreased to 5.0 bps in 2017 from 6.7 bps in 2016, with an average trading size of THB27.5 million (**Table 23**). The trading volume for corporate bonds rose steadily from THB251 billion in Q4 2016 to reach THB335.6 billion in Q3 2017. In the same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

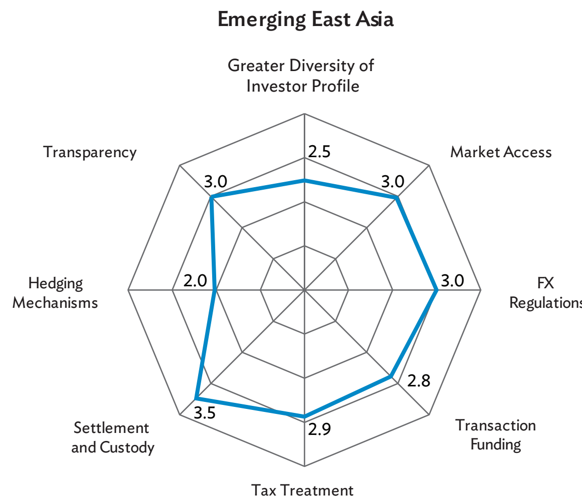
Qualitative Indicators for Corporate Bond Markets

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

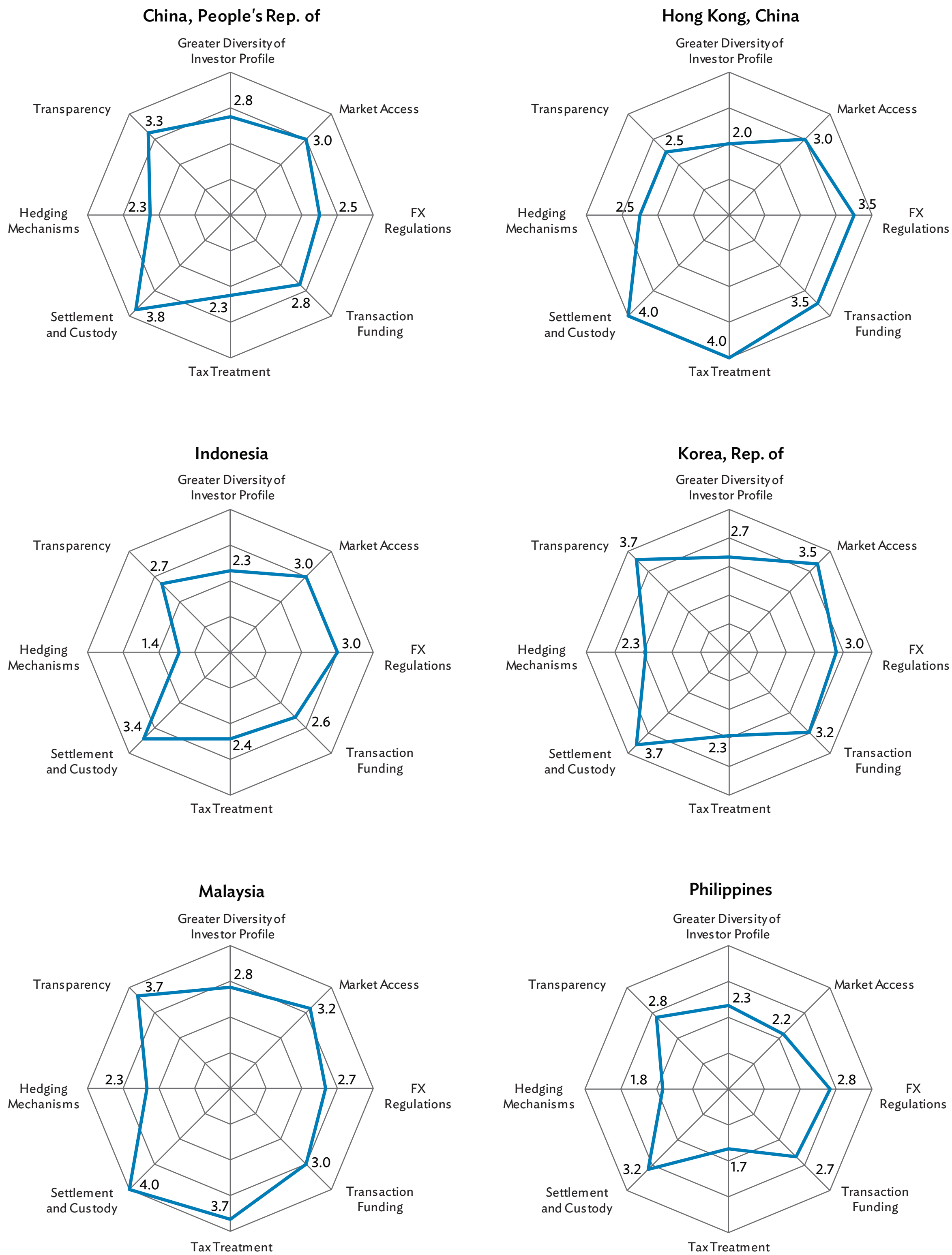


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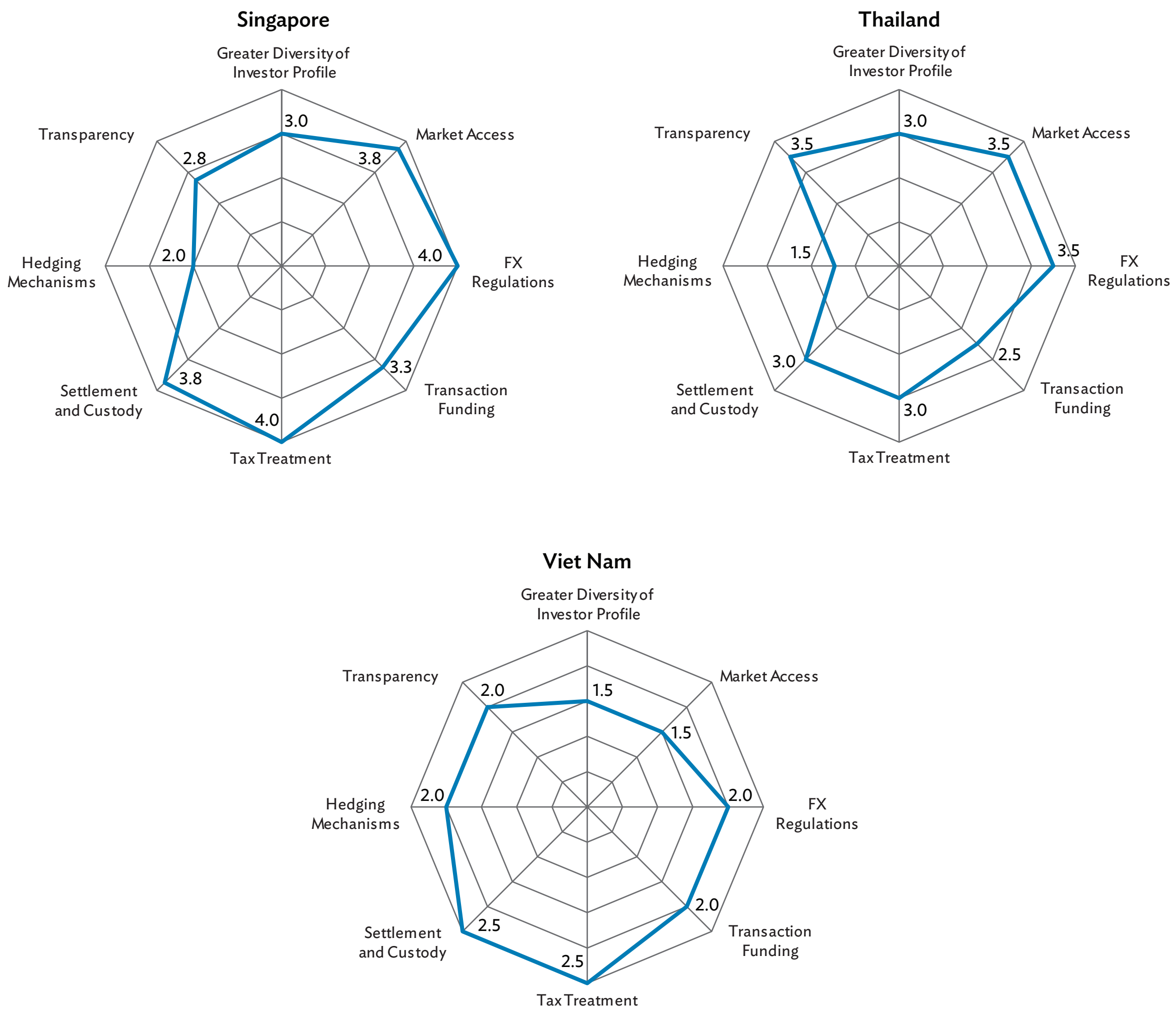
Figure 31 *continued*



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.

Foreign and Domestic Investments in Global Bond Markets

Introduction

Despite the pivotal role of commercial banks in the financial systems of Asian economies, equity and bond markets in Asia have grown rapidly in past decades. Well-functioning financial markets contribute to economic growth by improving resource allocation, reducing transaction and agency costs, channeling capital resources, ameliorating risk sharing, and boosting innovation.[12] As a complement to bank loans, a deep and liquid bond market plays a salient role in financing budget deficits, infrastructure investments, and private sector projects. The development of bond markets benefits Asian economic growth by providing long-term financing while diversifying banking sector risks and mitigating duration and currency mismatches.

However, challenges have emerged to Asian bond markets development, including a lack of liquidity, inactive institutional participation, and less favorable investor profiles (Plummer and Click 2005). The active participation of institutions facilitates market liquidity and depth, and enhances market efficiency by incorporating information into bond prices via trading. According to the International Monetary Fund (IMF) (2005), in many emerging Asian markets, domestic institutions trade passively in bond markets by adopting a buy-and-hold trading strategy, which leads to less liquidity in the market. More foreign investor participation would improve market liquidity in emerging markets (Peiris 2010). Foreign participation in local currency bond markets has also been found to lower interest rates in the United States (US) (Warnock and Warnock 2009) and emerging markets (Peiris 2010). A lack of foreign participation in bond markets tends to increase an economy's dependence on foreign currency debt (Burger and Warnock 2007), which exacerbates currency mismatch risk. In addition to foreign participation, a balanced investor profile consisting of investors with diversified mandates, especially investors with long-term investment horizons, helps mitigate risks arising from duration mismatches and increases market resilience to external shocks.

As global financial integration deepens, foreign participation in financial markets may become a channel for risk transmission. According to Belke and Rees (2014), bond yields in emerging markets are affected by external factors, which weakens the effectiveness of domestic monetary policy. During the low-interest-rate era following the global financial crisis, emerging bond markets attracted global investors seeking higher returns, which on the one hand lowered bond yields but at the same time posed risks to capital flow volatility. Thus, understanding the determinants of the investment decisions of foreign and domestic investors in bond markets fosters further development of emerging bond markets and facilitates financial stability in emerging economies.

This study extends existing knowledge on the drivers of foreign investment in global financial markets with new evidence and policy implications on bond market development. First, this study adds to the literature on international portfolio allocation. It has been widely established that investors benefit from global risk sharing and diversification (Lintner 1965). However, extant literature documents that investors do not seem to purely seek better returns worldwide as implied in the "Feldstein–Horioka puzzle" (Feldstein and Horioka 1980), which suggests that constraints to global capital flows include explicit trading barriers such as capital controls, different tax treatment, and transaction fees, as well as implicit trading barriers such as information asymmetry, and exchange rate and regulatory risks. Despite that many explicit barriers have been gradually lifted amid deepening global financial integration, investment biases persist in global capital markets due to various deadweight costs arising from remaining market frictions (French and

[12] See, among others, Greenwood and Jovanovic (1990), King and Levine (1993), Bencivenga and Smith (1993), Levine (1997), Rajan and Zingales (1998), Aghion et al. (2005), and Greenwood et al. (2010).

Poterba 1991, Lewis 1999, Chan et al. 2005, Horioka et al. 2016).

While the majority of empirical evidence on international investment decisions concentrates on equity markets,[13] relatively less is known about the determinants of investment behavior in global bond markets.[14] With their rapid expansion and ameliorated liquidity and transparency in recent decades (Bunda et al. 2009, McGuire and Schrijvers 2006), emerging bond markets have become more important in global portfolio allocation due to an improved risk–return profile. Hence, up-to-date evidence of factors influencing investment decisions in bond markets will improve the understanding of the investment preferences of global investors.

Extant evidence on investment decisions in bond markets show that bond market risk and return attributes significantly influence home bias (Fidora et al. 2007, Kim et al. 2014) and foreign bias (Burger and Warnock 2007; Burger, Warnock, and Warnock 2012; Horioka et al. 2016) in bond markets. This study joins the extant literature by comparing foreign and domestic investor preferences toward risk–return profiles in global bond markets. By highlighting key factors that lead to discrepancies in their bond investment patterns, this study addresses the following research questions: (i) What attracts foreign investments in global bond markets? (ii) What factors significantly drive discrepancies in the different portfolio decisions of foreign and domestic investors? By addressing the above questions, this research extends Fidora et al. (2007) and Kim et al. (2014) with novel evidence on how foreign investors react to risk–return attributes in global bond markets and adds to Burger and Warnock (2007); Burger, Warnock, and Warnock (2012); and Horioka et al. (2016) a new angle that compares the investment behavior of foreign and domestic investors in global bond markets. In addition, this study provides a useful reference for policy makers on guiding investment behavior and improving their investor profile in order to promote bond market development.

Using a sample from 41 bond markets during the period 2010–2015, we find evidence that foreign investors overweigh markets with better risk–return profiles. In particular, foreign investors chase return momentum and avoid high return volatilities. This is not necessarily true for domestic investors. Further evidence suggests that the return-chasing behavior of foreign investors is more pronounced in emerging bond markets than in developed bond markets. There is also evidence that foreign participation significantly increased when sovereign ratings improve and that markets with fewer capital controls tend to be overweighed by global foreign investors. These results imply the importance of integration and economic soundness in attracting greater foreign participation in bond markets. Given that foreign participation contributes to liquidity and market efficiency in emerging markets, our evidence suggests that capital account openness will contribute to bond market development by improving the investor profile and enhancing market depth. Meanwhile, the return-chasing behavior of foreign investors in emerging bond markets highlights the importance of sound public finances to not only maintain good credit ratings but also to improve the risk–return profile in emerging markets.

This research is organized as follows. Section 2 reviews the related literature on international portfolio allocation. Section 3 outlines the empirical research design and data sources. Evidence on the determinants of investment behavior in bond markets is discussed in section 4. Conclusions and potential policy implications are summarized in section 5.

Literature Review

In a world where capital has perfect global mobility, rational investors will chase assets that offer higher returns. According to Feldstein and Horioka (1980), investors' return-chasing behavior will theoretically lead to a weak correlation between domestic saving and the investment rate, although empirical evidence does not support this argument. This phenomenon is known as the Feldstein–Horioka puzzle. Consistently, the "home bias" literature documents that despite the benefits of global diversification and risk sharing, investors are widely found to allocate international markets inappropriately by overweighing domestic markets in their international portfolios (French and Poterba 1991, Lewis 1999).[15]

[13] See, among others, Dahlquist and Robertsson 2001; Dahlquist et al. 2003; Edison and Warnock 2004; Faruqee et al. 2004; Ahearne et al. 2004; Chan et al. 2005; Aggarwal et al. 2005; Covrig, Lau, and Ng 2006; Ferreira and Matos 2008; and Kho et al. 2009.
[14] See, among others, Burger and Warnock (2007), Fidora et al. (2007), and Horioka et al. (2016).
[15] Global investors do not allocate international portfolios in the same way as predicated in the international version of the asset pricing model (Levy and Sarnat 1970, Solnik 1974).

Chan et al. (2005) developed an international assets allocation model and showed that various deadweight costs arising from market friction erode the expected returns on overseas investments and lead to investment biases in either domestic (home bias) or some foreign (foreign bias) markets. Empirical evidence from global equity markets suggests that deadweight costs caused by explicit trading barriers such as capital controls and tax treatment, as well as implicit barriers such as information asymmetry and investor protections, contribute to investment biases worldwide.[16]

Even though global bond market capitalization is much larger than equity market capitalization, and assets with lower volatility (e.g., bonds) tend to exhibit more pronounced home bias than assets with higher volatility (e.g., equities) (Fidora et al. 2007), extant empirical evidence on the composition of international asset portfolios mainly focuses on equity markets. Compared to research on equity markets, relatively less evidence has been produced to understand global bond portfolio allocation and the preferences of bond market investors.

Among the literature on investment behavior in global bond markets, a group of studies focus on how risk–return factors drive investment bias. Evidence on domestic bias includes Fidora et al. (2007) and Kim et al. (2014). Fidora et al. (2007) examine the role of real exchange rate volatility on global bond and equity portfolio decisions. They show that real exchange rate volatility significantly explains home bias in global financial markets and that reduced real exchange rate volatility helps decrease home bias, especially for bond portfolios. Kim et al. (2014) investigate foreign investment in global bond and stock markets and find that market performance has a more pronounced impact than macroeconomic factors on home biases in both bond and equity markets. Other researchers look at foreign biases. Burger and Warnock (2007) investigate US investors' bond holdings in 40 global markets and find that they do not diversify holdings well and avoid emerging bond markets with unfavorable risk–return profiles, such as higher variance and negative skewness, that are related to unstable macroeconomic conditions. Burger, Warnock, and Warnock (2012) analyze factors that attracted US investors in emerging local currency bond markets in 2006 and 2008, and find that US investors overweigh markets with higher returns, positive skewness, and better openness features. They imply that various types of risks stemming from economic, political, and market factors limit global risk sharing and financial integration. Horioka et al. (2016) examine foreign holdings in Asian bond markets and find that foreign investors value higher risk-adjusted returns and lower exchange rate risk when investing in Asian bond markets.

Other studies focus on social factors and examine how various deadweight costs in the form of different social factors shape investors' portfolio decisions in bond markets. For example, there are studies investigating investor behavior with regard to factors such as familiarity (Ferreira and Miguel 2011); patriotism, culture, and domestic creditor protection (Pradkhan 2016a, 2016b); and political constraints and instability (Eichler and Plaga 2017).

Given the increasing size of bond markets and improving risk–return profiles in global bond markets, more knowledge needs to be produced to understand possible determinants that could differentiate between foreign and domestic investor preferences. Such knowledge would be especially helpful to policy makers in improving investor profiles in individual markets. Foreign and domestic investors may have different preferences in terms of investment horizon, risk appetite, and mandates. Knowledge that depicts how they behave differently in the bond market could shed light on policy developments that encourage certain types of investors toward a more desirable investor profile.

Empirical Design

Research Method

Dependent Variables

In the spirit of Dahlquist and Robertsson (2001) and Chan, Covrig, and Ng (2005), this study defines foreign (domestic) bias (FB [DB]) as the deviation of a market's weight in the aggregate foreign (domestic) investment portfolio from the market's weight in the world bond portfolio, which is calculated as follows:

$$FB_{i,t} = \log\left(\frac{w_{i,t}^{FI}}{w_{i,t}^{M}}\right), \text{ and } DB_{i,t} = \log\left(\frac{w_{i,t}^{DI}}{w_{i,t}^{M}}\right), \qquad (1)$$

[16] See, among others, Faruqee et al. 2004, Ahearne et al. 2004, Aggarwal et al. 2005, Chan et al. 2005, Ferreira and Matos 2008, and Kho et al. 2009.

where $w_{i,t}^{FI}$, $w_{i,t}^{DI}$, and $w_{i,t}^{M}$ denote the weights of market i's foreign investors' global portfolio, domestic investors' global portfolio, and world bond market portfolio, respectively, at time t. Since a market's weight in the global portfolio reflects the relative importance of an individual market in the global market, while its weight in the foreign (domestic) global portfolio captures the actual proportion that foreign (domestic) investors allocate to it relative to its benchmark size. Thus, foreign (domestic) investment bias reflects the relative preference of foreign (domestic) investors toward a particular bond market.

Independent Variables

According to extant literature, factors that may influence foreign investment in domestic financial markets fall into several categories: asset risk–return profile, currency risks, financial development, and macroeconomic stability. In this study, we group these factors into two aspects capturing investor mandates and the market-level environment.

Investor mandates. Trading strategies and investment mandates shape investment behavior. The literature has documented that historical performance affects investors' portfolio decisions. Investors tend to choose assets with strong historical performance (Grinblatt and Keloharju 2001, Edison and Warnock 2004, and Ferreira and Matos 2008). Existing literature also shows that the riskiness of assets affects investment decisions. Del Guercio (1996) suggests that the "prudent-man rule" affects the investment behavior of institutions such as banks and mutual funds. Gompers and Metrick (2001) indicate that institutional investors bear the legal role of fiduciaries and avoid risky assets due to such motives. Covrig, Lau, and Ng (2006) find that foreign and domestic mutual funds prefer stocks with low return variability. In bond market investments, Burger and Warnock (2007) and Burger, Warnock, and Warnock (2012) find that bond risk–return characteristics significantly affect US investor preferences. Fidora et al. (2007) and Horioka et al. (2016) show that exchange rate volatility is a significant factor contributing to home bias and foreign investment in bond markets, respectively.

In empirical tests, we capture momentum-seeking by following Edison and Warnock (2004) and measure return level (RMEAN) as the average monthly return on a bond market index during the past 12 months. We address the prudent-man's rule in institutional investment decisions with measures of volatility and skewness of bond returns. This study calculates the return volatility (RVOL) and skewness (RSKE) as the standard deviation and skewness of monthly returns on bond indexes over the past 12 months. To account for currency risk, we follow Fidora et al. (2007) and construct effective real exchange rate volatility (FXVOL) as the standard deviation of the monthly effective real exchange rate during the past 12 months. To further consider the role of less frequent large swings in exchange rate movements, we also account for exchange rate skewness (FXSKE) in individual markets using skewness of monthly percentage changes of real effective exchange rates during the past 12 months.

Market investment environment. Well-developed financial markets offer more investment instruments, less investment controls, and better liquidity, thus making these markets more accessible to investors. Macroeconomic stability means an economy has sound economic fundamentals and a good public debt management situation. Greater macroeconomic stability facilitates an improved risk–return profile for debt instruments as well as a robust currency. To depict the investment environment in bonds, this study follows existing literature and considers the following aspects: financial development and macroeconomic stability.

Market depth and liquidity matter for investors, especially institutional investors who trade in relatively large volumes (Tesar and Werner 1995). To maintain a liquid trading environment, financial markets need to reach a certain minimum efficient scale. Empirical research commonly adopts market size and trading turnover as proxies for liquidity (Edison and Warnock 2004; Ahearne, Griever, and Warnock 2004; Dahlquist and Robertsson 2001; Tesar and Werner 1995). Empirically, due to the limited availability of data on trading volume, this study gauges market depth using bond market size (SIZE), which is measured as the natural logarithm of the aggregated value of outstanding bonds in a bond market as of the end of the year. In addition to capturing market depth, market size is also found to play multiple roles in affecting investment behavior. Greater market size can imply greater information availability (Edison and Warnock 2004) and better corporate governance quality (Kho, Stulz, and

Warnock 2009). Eichengreen and Luengnaruemitchai (2004) document that the size of Asian bond markets is positively related to a stronger institutional environment and a competitive banking sector. Thus, the inclusion of market size also captures institutional quality and financial development.

A well-functioning financial market also features more mature financial institutions such as banks and brokers serving as market makers (Eichengreen and Luengnaruemitchai 2004), which facilitates better liquidity and improves market efficiency. In empirical tests, we measure financial market development (FINDEV) as the natural logarithm of the financial development indicator constructed in Svirydzenka (2016). This financial development index comprehensively covers financial market depth, accessibility, and efficiency, and the level of financial institution development. The index ranges between 0 (less developed) to 1 (well developed).

There is evidence that explicit investment barriers in the form of capital controls significantly shape foreign portfolio investment decisions (Chan et al. 2005). Following Chan et al. (2005), we use the index on capital flow controls (OPENNESS) constructed by the Economic Freedom Network. Empirically, we construct OPENNESS as the natural logarithm of the capital control index from Table 4Dii of the Economic Freedom Network, where a higher score indicates that an economy imposes fewer restrictions on capital flows. The lowest score of 0 and the highest score of 10 indicate full capital controls and a fully open capital account, respectively.

To quantify macroeconomic stability and outlooks, we employ S&P Global's sovereign ratings on foreign and local currency government bonds (RATING) to proxy for macroeconomic fundamentals. A higher rating indicates a more stable economic outlook. Empirically, we allocate numeric scores to S&P Global's 23 sovereign bond rating levels, with the highest score of 22 representing AAA, which is the highest investment grade, and 0 representing D, which is default. We take the simple average of foreign and local currency government bond ratings to capture the average level of macroeconomic stability.

Empirical Model Estimations

To identify the determinants of foreign and domestic bond investment biases (FB and DB), the following model was estimated:

$$Bias_{i,t} = \alpha + \beta X_{i,t} + \gamma Dummy + \varepsilon_{i,t}, \qquad (2)$$

where $Bias_{i,t}$ is the market level investment biases (FB and DB) for market i at time t, $X_{i,t}$ is the vector of market attributes and investor mandate variables, and dummy is the vector of time- and market-fixed effects to reflect information that is not captured by the independent variables. This study estimates the model specifications using panel-fixed effects, with clustered standard errors at the market level.[17] We also use systematic generalized method of moments (GMM) to account for possible endogeneity concerns.

Sample Construction

We collect year-end, cross-border portfolio holdings in debt securities from the International Monetary Fund's Coordinated Portfolio Investment Survey (CPIS).[18] We identify the source markets and destination markets of bond portfolio investments to obtain the aggregated bond investments into and out of each market. To avoid the influence of the global financial crisis on international investment behavior, our sample covers the period 2010–2015. The outstanding amount of debt securities issued by all domestic entities is collected from Table C1 of the Bank for International Settlements (BIS) debt securities statistics (DEBT_SEC2), which contains data on the aggregated amount of outstanding international and domestic debt securities. For markets that do not report aggregated outstanding debt securities, we sum the outstanding amounts of foreign and domestic debt securities. Real effective exchange rates are also collected from BIS. Sovereign bond ratings from S&P Global are collected from Bloomberg. The index on capital controls is from Table 4Dii constructed by the Economic Freedom Network. Monthly returns on local bond markets are collected from the JP Morgan GBI Aggregate Diversified Index and Emerging Market Bond Index Global Diversified via Bloomberg. The financial development indicator is collected from

[17] Hausman tests give different results for different model specifications, thus we use fixed-effect estimations and report random-effect estimations as robustness checks.
[18] The IMF's CPIS covers year-end global holdings in debt instruments from 2001 to 2015. Since data on June holdings are only available since 2013, we only include year-end holdings to keep record frequency consistent. The database is accessible at http://data.imf.org/?sk=B981B4E3-4E58-467E-9B90-9DE0C3367363

Svirydzenka (2016). After matching all the variables, we get a final panel dataset consisting of 241 observations covering 41 bond markets for the period 2010–2015. Our sample is reasonably representative. The 41 target markets receive 86.7% of total foreign holdings from the 88 reporting markets in the CPIS and the aggregated bond market size of the 41 sample markets account for 95.3% of the global bond market size.

Table 24 reports summary statistics of foreign and domestic biases in our sample across markets and years. We first compare our statistics with Kim et al. (2014) since we use the same data sources. In general, the home bias measures in our sample are very comparable to those in Kim et al. (2014). Panel A shows that in terms of mean foreign bias, most developed bond markets are overweighed by foreign investors with a foreign bias higher than 0, while emerging bond markets are under-weighed by foreign investors. Compared to developed bond markets, most emerging bond markets, especially those in Latin America and emerging Asia, are generally under-weighed. Among these markets, the People's Republic of China's bond market has the lowest foreign investment bias, largely driven by its relatively large bond market size and limited access for foreign investors. In contrast to emerging Latin America and Asia, emerging European bond markets are generally not under-weighed by foreign investors, which probably reflects better financial integration in the eurozone. In contrast, home bias is still pervasive in global bond markets, with all mean domestic biases higher than 0. Panel B depicts foreign and domestic biases across sample years. On average, home bias is still prevalent in global bond markets after years of globalization and integration, while foreign bias seems to increase during the review period, indicating that foreign investors are becoming more willing to invest in global bond markets.

To get a clear picture of how investment biases have evolved during the past decade, we calculate foreign and domestic biases for both developed and emerging markets in **Figure 32**. Based on the BIS classification of economic development status and regional location, we depict the evolution of foreign and domestic biases in developed and emerging markets in **Figure 33a**. While the home bias persists worldwide, home biases in developed markets are generally lower than in emerging markets. As global financial integration has deepened in recent decades, the whole world in general witnessed a slight decline in home bias in bond markets. At the same time, developed markets are largely invested in by global foreign investors compared to emerging markets, which are under-weighed in foreign investor portfolios relative to their scale. While foreign bias remains stable in developed markets, foreign bias in emerging markets picked up after the global financial crisis, indicating that global investors were seeking higher returns in emerging markets during the easy money era.

To take a closer look at trends at the regional level, we break down developed and emerging markets into three subregions: the Americas, Asia and the Pacific, and Europe. **Figures 33b** and **33c** show the investment biases of emerging and developed markets across different subregions, respectively. As shown in Figure 33b, while home bias levels in emerging markets in all three subregions are quite close to each other and present a similar decreasing trend, emerging markets exhibit different foreign bias patterns across subregions.

First, emerging European markets are fairly weighed by global investors. Before the global financial crisis, emerging European markets were overweighed by foreign investors. Foreign bias decreased to a fair level during the global financial crisis and slightly picked up again after 2011. Overall, European emerging bond markets are overweighed by foreign investors due to deepened financial integration within the eurozone. Second, emerging Latin America was overweighed before the global financial crisis and experienced a sell-off during the crisis. Foreign bias gradually increased after the global financial crisis and now emerging Latin American bond markets' weight in foreign investor portfolios is close to their relative size. Third, emerging Asian bond markets have generally been under-weighed compared to their relative size in past decades. Foreign investors reduced investments during the global financial crisis and resumed investments during the post-crisis period. The under-weighing of emerging Asian bond markets in global investor portfolios is partially driven by capital control measures adopted in some Asian markets.

Figure 33c shows interesting patterns for developed markets across subregions. A positive foreign bias in developed European markets serves as evidence of deepened financial integration. Developed markets in the Americas have lower home bias levels, while developed Asia and the Pacific markets have the highest home bias levels along with a clear decreasing trend during the review period. However, both developed Americas and

Table 24: Summary Statistics of Foreign and Domestic Biases in Global Bond Markets

Panel A. Foreign and Domestic Biases across Markets

Developed Markets	Foreign Bias Mean	Domestic Bias Mean
Austria	0.92	4.82
Belgium	0.78	4.63
Canada	0.38	3.82
Denmark	0.03	4.46
Finland	1.07	4.96
France	0.58	2.57
Germany	0.62	2.59
Greece	0.24	5.40
Hong Kong, China	−0.22	4.85
Ireland	0.82	3.50
Italy	0.39	3.08
Japan	−1.92	1.81
Korea, Republic of	−0.70	4.16
Luxembourg	1.34	2.33
Netherlands	1.10	3.03
New Zealand	0.95	6.73
Norway	0.77	4.40
Portugal	0.48	5.18
Singapore	0.09	4.79
Spain	0.46	3.60
Sweden	0.93	4.51
Switzerland	0.41	4.38
United Kingdom	0.35	2.39
United States	−0.68	0.95

Developing Markets	Foreign Bias Mean	Domestic Bias Mean
Argentina	−0.41	6.38
Brazil	−0.80	3.82
Chile	−0.23	6.37
China, People's Republic of	−1.81	3.02
Hungary	0.69	6.74
India	−0.68	4.97
Indonesia	0.57	6.32
Israel	−0.46	5.88
Malaysia	−0.02	5.58
Mexico	0.17	4.86
Philippines	0.21	6.60
Poland	0.46	5.78
Russian Federation	−0.59	5.31
South Africa	−0.08	5.99
Thailand	−1.05	5.73
Turkey	0.36	5.83
Venezuela	0.64	7.28

Notes: Market classification based on Bank for International Settlements' database. This table lists the detailed summary statistics of foreign and domestic investment biases in bond markets across 41 global markets. Foreign and domestic biases are defined as the deviations of a market's weight in the aggregate foreign and domestic bond investment portfolios from the market's weight in the world bond portfolio. The calculation is conducted using the following formulas for foreign and domestic bias, respectively:

$$FB_{i,t} = \log\left(\frac{w_{i,t}^{FI}}{w_{i,t}^{M}}\right) \text{ and } DB_{i,t} = \log\left(\frac{w_{i,t}^{DI}}{w_{i,t}^{M}}\right)$$

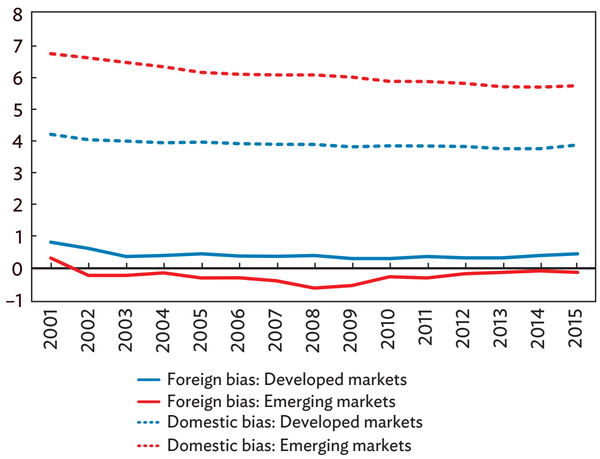
Sources: Authors' calculations using IMF and BIS databases.

Panel B. Foreign and Domestic Biases across Years

Year	N	Foreign Bias							Domestic Bias						
		mean	min	p25	p50	p75	max	std.	mean	min	p25	p50	p75	max	std.
2010	39	0.09	−2.31	−0.33	0.29	0.68	1.36	0.82	4.62	0.98	3.39	4.92	5.78	7.29	1.56
2011	39	0.16	−1.94	−0.31	0.37	0.64	1.53	0.77	4.63	0.99	3.29	4.99	5.91	7.19	1.58
2012	40	0.17	−1.98	−0.30	0.29	0.74	1.31	0.75	4.61	0.99	3.41	4.88	5.76	7.14	1.52
2013	41	0.14	−1.92	−0.24	0.31	0.70	1.32	0.71	4.57	0.96	3.58	4.74	5.75	7.25	1.51
2014	41	0.20	−1.77	−0.06	0.43	0.68	1.26	0.73	4.57	0.91	3.66	4.63	5.79	7.37	1.50
2015	41	0.24	−1.86	−0.10	0.49	0.73	1.26	0.75	4.66	0.88	3.81	4.63	5.82	7.43	1.48
Total	**241**	**0.17**	**−2.31**	**−0.29**	**0.34**	**0.69**	**1.53**	**0.75**	**4.61**	**0.88**	**3.55**	**4.75**	**5.79**	**7.43**	**1.51**

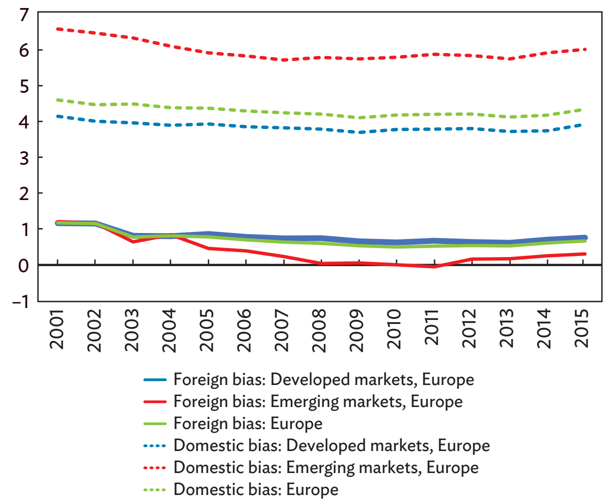
Note: This table lists the detailed summary statistics of foreign and domestic investment biases in bond markets across 6 sample years.
Sources: Authors' calculations using IMF and BIS databases.

Figure 32: The Evolution of Foreign and Domestic Biases in Global Bond Markets



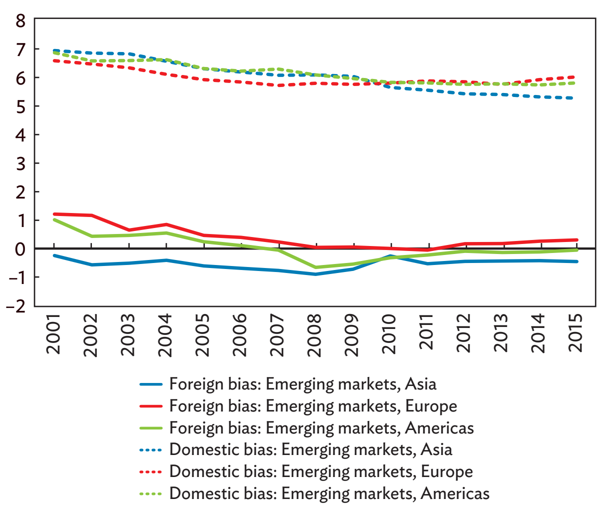
Sources: Authors' calculations using IMF and BIS databases.

Figure 33a: Investment Biases in Developed versus Emerging Markets



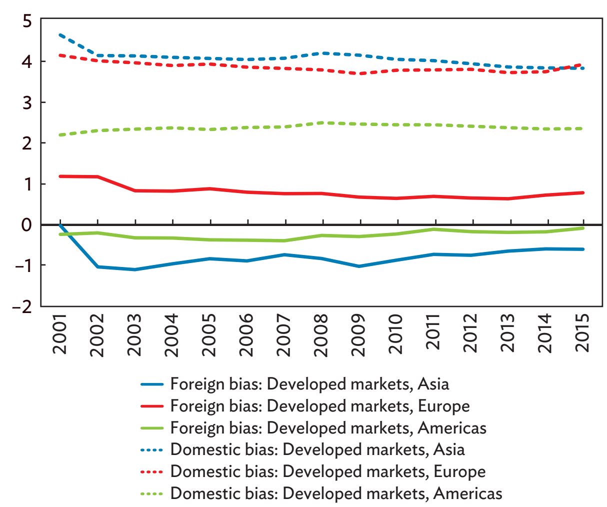
Sources: Authors' calculations using IMF and BIS databases.

Figure 33b: Investment Biases in Emerging Markets



Sources: Authors' calculations using IMF and BIS databases.

Figure 33c: Investment Biases in Developed Markets



Sources: Authors' calculations using IMF and BIS databases.

the developed Asia and the Pacific have a negative foreign bias, partially because of the large size of these bond markets (especially the US and Japan) and their relatively low returns. Overall, home bias is still pervasive in global bond markets but shows a decreasing trend in certain markets. Foreign investors mostly under-weigh bond markets outside of Europe, especially Asian bond markets.

Tables 25 and **26** list the summary statistics and pair-wise Pearson correlation coefficients of all key variables that are used in our sample, respectively.[19] Table 26 suggests that most variables in our sample are not subject to multi-collinearity.

[19] Due to the limited availability of bond index returns, we only have 253 observations with return-related variables such as momentum, volatility, and skewness. We calculated the correlation matrix including these return-related variables using a smaller sample and there is no evidence that these variables are highly correlated. The alternative correlation matrix is available upon request.

Table 25: Summary Statistics for Key Variables

Variables	N	Mean	Min	p5	p10	p50	p90	p95	Max	Std.
FB	241	0.17	−2.31	−1.34	−0.81	0.34	1.00	1.12	1.53	0.75
DB	241	4.61	0.88	1.99	2.52	4.75	6.52	6.73	7.43	1.51
RMEAN	241	0.47	−7.20	−0.57	−0.31	0.46	1.28	1.74	3.74	0.95
RVOL	241	2.02	0.26	0.59	0.68	1.41	3.78	6.98	11.62	2.03
RSKE	241	0.07	−1.92	−1.11	−0.87	0.05	0.96	1.35	2.07	0.74
FXVOL	241	0.01	0	0.01	0.01	0.01	0.02	0.03	0.12	0.01
FXSKE	241	−0.07	−2.73	−1.34	−0.99	−0.02	0.81	0.99	2.24	0.77
SIZE	241	13.38	10.78	11.47	11.79	13.07	15.29	15.86	17.43	1.45
FinDev	241	−0.47	−1.57	−1.16	−0.98	−0.39	−0.16	−0.13	−0.03	0.32
OPENNESS	241	1.49	0	0.57	0.57	1.58	2.16	2.25	2.33	0.57
RATING	241	17.4	3	8	11.5	18.5	22	22	22	4.68

Notes: This table lists the summary statistics of key variables. The sample period is 2010–2015. Foreign and domestic biases (FB and DB, respectively) are defined as the deviations of a market's weight in the aggregate foreign and domestic bond investment portfolios from the market's weight in the world bond portfolio. RMEAN is the cumulative monthly return on the local bond market index during the past 12 months. RVOL and RSKE are the standard deviation and skewness of monthly returns on bond indexes during the past 12 months. SIZE is the natural logarithm of aggregated value of outstanding bonds in a bond market. FXVOL and FXSKE are the standard deviation and skewness of monthly real effective exchange rates changes during the past 12 months, respectively. FinDev is the natural logarithm of the financial development indicator constructed in Svirydzenka (2016). OPENNESS is the natural logarithm of the capital control index from Table 4dii of the Economic Freedom Network. RATING is the average rating of foreign and local currency sovereign bonds from S&P Global Ratings.

Source: Authors' calculations.

Table 26: Correlation Matrix for Key Variables

Variables	FB	DB	RMEAN	RVOL	RSKE	FXVOL	FXSKE	SIZE	FinDev	OPENNESS	RATING
FB	1.000										
DB	0.136	1.000									
RMEAN	0.342	−0.885	1.000								
RVOL	0.055	0.105	−0.073	1.000							
RSKE	0.056	0.333	−0.289	0.098	1.000						
FXVOL	0.144	−0.074	0.138	0.051	−0.169	1.000					
FXSKE	−0.162	0.289	−0.350	0.002	0.245	−0.201	1.000				
SIZE	0.123	−0.125	0.176	0.005	0.064	0.178	−0.325	1.000			
FinDev	−0.301	−0.938	0.748	−0.105	−0.307	0.045	−0.237	0.076	1.000		
OPENNESS	0.004	−0.681	0.648	−0.151	−0.481	0.161	−0.364	0.213	0.587	1.000	
RATING	0.248	−0.397	0.493	−0.058	−0.243	0.149	−0.221	0.151	0.296	0.650	1.000

Note: This table reports Pearson correlation coefficients between each pair of variables. A total of 241 observations for the period 2010–2015 were used for the calculations.

Source: Authors' calculations.

Empirical Analysis

What determines foreign and domestic biases in global bond markets?

Table 27 reports the estimations of the impacts of various market attributes on foreign and domestic investment biases. In Panel A, we include bond return characteristics and currency risks. Columns 2 and 3 show that foreign investors display a significant preference toward bond markets with relatively higher returns and lower volatility: a 1% increase in monthly bond index returns increases foreign bias by 0.025% and a 1% increase in bond index volatility decreases foreign bias by 0.032%. However, bond risk–return profiles do not have a significant impact on domestic investor biases. Furthermore, when foreign exchange risk is included in columns 4 and 5, neither foreign nor domestic investor investment preferences are significantly affected by currency risks.

In Panel B, we include additional market developments and macroeconomic conditions. Higher returns on bond

Table 27: Determinants of Foreign and Domestic Biases

Panel A

Variables	Foreign Bias	Domestic Bias	Foreign Bias	Domestic Bias
Risk–Return Profile				
RMEAN	0.0248**	0.0219	0.0247**	0.0217
	(2.30)	(1.34)	(2.31)	(1.34)
RVOL	−0.0320***	0.00248	−0.0314***	0.00336
	(−2.75)	(0.13)	(−2.77)	(0.16)
RSKE	0.0064	−0.000625	0.00857	0.00188
	(0.41)	(−0.04)	(0.53)	(0.12)
FXVOL			0.908	0.913
			(0.89)	(1.03)
FXSKE			−0.00981	−0.0126
			(−0.74)	(−1.17)
Observations	241	241	241	241
Number of Markets	41	41	41	41
Adjusted R-squared	0.195	0.042	0.194	0.041
Time-Fixed Effects	YES	YES	YES	YES
Market-Fixed Effects	YES	YES	YES	YES
F Value	6.84	5.53	5.69	5.08

Panel B

Variables	Foreign Bias	Domestic Bias	Foreign Bias	Domestic Bias
Risk–Return Profile				
RMEAN	0.0262**	−0.00883	0.0253***	−0.00869
	(2.67)	(−0.97)	(3.63)	(−0.92)
RVOL	−0.0356***	−0.00213	−0.0305***	−0.00294
	(−2.82)	(−0.17)	(−2.79)	(−0.28)
RSKE	0.00183	0.0028	0.00849	0.00176
	(0.11)	(0.30)	(0.54)	(0.23)
FXVOL	1.007	0.0466	0.978	0.0512
	(0.91)	(0.13)	(1.08)	(0.15)
FXSKE	−0.00327	−0.00251	−0.0107	−0.00135
	(−0.26)	(−0.33)	(−0.84)	(−0.16)
Market Attributes				
SIZE	−0.0462	−0.652***	−0.0918	−0.645***
	(−0.44)	(−3.88)	(−0.89)	(−3.60)
FinDev	0.474	0.298	0.501	0.293
	(0.80)	(1.21)	(0.98)	(1.24)
OPENNESS	0.323***	−0.0492	0.311***	−0.0472
	(3.08)	(−0.65)	(2.92)	(−0.64)
Rating			0.0378**	−0.00590
			(2.57)	(−0.35)
Observations	241	241	241	241
Number of Markets	41	41	41	41
Adjusted R-squared	0.252	0.356	0.301	0.354
Time-Fixed Effects	YES	YES	YES	YES
Market-Fixed Effects	YES	YES	YES	YES
F Value	6.3	30.99	9.09	29.74

Notes: This table reports estimated impacts of different variables on foreign and domestic biases in global bond markets. The sample period is from 2010 to 2015. Dependent variables are foreign and domestic biases defined as the deviations of a market's weight in the aggregate foreign and domestic bond investment portfolios from the market's weight in the world bond portfolio. RMEAN is the cumulative monthly return on local bond market index during the past 12 months. RVOL and RSKE are the standard deviation and skewness of monthly returns on bond indexes during the past 12 months. SIZE is the natural logarithm of aggregated value of outstanding bonds in a bond market. FXVOL and FXSKE are the standard deviation and skewness of monthly real effective exchange rates changes during the past 12 months, respectively. FinDev is the natural logarithm of the financial development indicator constructed in Svirydzenka (2016). OPENNESS is the natural logarithm of capital control index from Table 4dii of the Economic Freedom Network. Rating is the average rating of foreign and local currency sovereign bonds from S&P Global Ratings. Models are estimated using panel-fixed effects by including time and market-fixed effects. T values are calculated from standard errors clustered at the market level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' calculations.

market indexes and lower volatility of bond market returns consistently attract foreign investment, but domestic investors are not sensitive to these risk–return profiles in local markets. Still, foreign and domestic investors do not significantly respond to currency risks. In addition to risk–return profiles, there is interesting evidence from market developments and macroeconomic attributes. While bond market size may not have a significant impact on foreign investor decisions, domestic bias is generally lower in larger bond markets. This evidence suggests that smaller bond markets tend to be more domestically biased compared to larger ones. Meanwhile, markets with fewer capital flow restrictions (greater openness) intuitively encourage more foreign investment, but domestic investment is not affected much by domestic market openness. Finally, foreign investors care more about macroeconomic prospects and stability, which are captured by sovereign ratings, while domestic investors are relatively less sensitive to domestic macroeconomic conditions. Overall, this evidence implies that when the risk–return profile, market accessibility, and macroeconomic conditions improve, foreign investment increases. Moreover, larger bond markets tend to be less domestically biased.

Since some bond markets are offshore financial centers, the trading behavior of foreign and domestic investors in such markets may differ from that in common bond markets. Thus, to examine whether our previous findings are sensitive to the inclusion of such offshore financial centers, we follow the classification of BIS and conduct a robustness check by excluding Hong Kong, China and Singapore from our sample. Also, when determining whether to use a panel-fixed effects or random effects model, a Hausman test indicates that panel-fixed effects are suitable for most model specifications but a few model specifications are more suited for random effects. In the baseline models in Table 27, we report results estimated using a panel-fixed effects model. To test whether the results are sensitive to the choice of the estimation model, we also report estimated results using a random effects model. The results of these tests are listed in **Table 28**.

The first two model specifications in Table 28 list the results estimated for the nonfinancial center subsample, and the last two columns report the estimated results using a random effects model. Largely, the results are consistent with those in Table 27. Foreign investors invest more in bond markets that offer higher returns and lower return volatility. Greater market accessibility and higher sovereign ratings also attract more foreign investment. In addition, there is evidence that foreign investors under-weigh large bond markets in their portfolio and that home bias declines as bond markets expand in size.

Since the value of foreign and domestic bias is observed within certain ranges, we utilize a Tobit model to deal with the censored dependent variables. To justify that these findings are robust to possible endogenous issues, we also use systematic GMM to tackle possible endogeneity. The results of these robustness checks are reported in **Table 29**. As shown, the previous results are robust to alternative estimation methods. Consistently, foreign investors overweigh markets that offer higher returns and lower risk, as well as more open bond markets and those in countries with macroeconomic stability. Meanwhile, a less favorable risk–return profile and small bond market size heighten home bias.

Foreign and domestic biases in developed and emerging bond markets

To further explore whether determinants of foreign and domestic holdings are systematically different in emerging and developed bond markets, this section presents additional tests on global investor bond holdings with a breakdown between emerging and developed markets. Our classification of emerging and developed markets is consistent with BIS classifications. **Table 30** lists the estimated results for foreign and domestic investment biases in emerging and developed markets.

In developed markets, the portfolio decision-making of foreign investors significantly depends on the accessibility of financial markets. In other words, global investors do not seem to invest in developed bond markets for return-seeking purposes. Greater market openness will foster foreign participation. However, in emerging markets, foreign investors exhibit concern over risks. They avoid markets with greater return volatility and overweigh markets with better economic fundamentals. Interestingly, among emerging markets, lower returns, a smaller market size, and a weaker sovereign rating lead to greater home bias.

Overall, the breakdown of bond market development offers insight into how foreign and domestic investors may behave in different market environments. In general, for emerging markets greater market size and a better sovereign rating will broaden the investor base and lower

Table 28: Determinants of Foreign and Domestic Biases—Robustness (I)

Estimation Method	Panel-Fixed Effects (without offshore centers)		Panel-Random Effects	
Variables	Foreign Bias	Domestic Bias	Foreign Bias	Domestic Bias
Risk-Return Profile				
RMEAN	0.0226***	−0.00846	0.0191***	−0.0209***
	(3.04)	(−0.83)	(2.70)	(−3.21)
RVOL	−0.0346***	−0.00158	−0.0252**	−0.000905
	(−3.03)	(−0.15)	(−2.32)	(−0.09)
RSKE	0.00727	0.00147	0.00933	0.00171
	(0.45)	(0.19)	(0.61)	(0.19)
FXVOL	1.048	−0.0528	0.759	−0.00388
	(1.12)	(−0.16)	(0.74)	(−0.01)
FXSKE	−0.00559	−0.00355	−0.00850	0.002
	(−0.43)	(−0.38)	(−0.66)	(0.24)
Market Attributes				
SIZE	−0.185**	−0.625***	−0.167**	−0.795***
	(−2.10)	(−3.07)	(−2.12)	(−8.14)
FinDev	0.646	0.217	0.0873	−0.462
	(1.16)	(0.85)	(0.26)	(−1.64)
OPENNESS	0.330***	−0.0475	0.309***	−0.0873
	(2.84)	(−0.62)	(2.68)	(−1.59)
Rating	0.0367**	−0.00556	0.0364***	−0.0141
	(2.55)	(−0.33)	(3.05)	(−1.05)
Observations	229	229	241	241
Number of markets	39	39	41	41
Year-Fixed Effects	YES	YES	YES	YES
Market-Fixed Effects	YES	YES	NO	NO
Adjusted R-squared /Chi^2	0.32	0.31	163.1	1678

Notes: This table reports estimated impacts of different variables on foreign and domestic biases using panel-random effects model on a full sample and using panel-fixed effects model on a sample of markets that exclude financial centers (Hong Kong, China; and Singapore), respectively. Dependent variables are foreign and domestic biases. RMEAN is the cumulative monthly return on the local bond market index during the past 12 months. RVOL and RSKE are the standard deviation and skewness of monthly returns on bond indexes over the past 12 months. SIZE is the natural logarithm of the aggregated value of outstanding bonds in a bond market. FXVOL and FXSKE are the standard deviation and skewness of monthly real effective exchange rates changes during the past 12 months, respectively. FinDev is the natural logarithm of the financial development indicator constructed in Svirydzenka (2016). OPENNESS is the natural logarithm of the capital controls index from Table 4dii of the Economic Freedom Network. Rating is the average rating of foreign and local currency sovereign bonds from S&P Global Ratings. The first two models are estimated using panel-fixed effects by including time- and market-fixed effects; the last two models are estimated using panel-random effects by including year-fixed effects. T values are calculated from standard errors clustered at the market level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' calculations.

home bias. For economies with a smaller bond market, regional integration would help to diversify the investor base. This finding sheds additional light on how emerging bond markets can improve their investor profile.

Conclusion

This study investigates the determinants of foreign and domestic biases in global bond markets. In particular, we try to understand the factors that shape foreign and domestic investor behavior and what drives the discrepancies between foreign and domestic investments.

In general, there is evidence that foreign investors chase better risk–return profiles in global bond markets and that their investments are significantly influenced by bond market accessibility and macroeconomic outlook as captured by sovereign ratings. Meanwhile, there is evidence that larger bond markets tend to have a lower home bias.

These findings have policy implications for bond market development. If an emerging economy wishes to broaden its bond market investor base, it can make its market more accessible by gradually increasing capital account openness while also maintaining sound public finances and an economic outlook that boosts foreign investor confidence and improves the risk–return profile of bonds. Finally, integrating regional bond markets can help small bond markets to broaden the investor base and lower home bias.

Table 29: Determinants of Foreign and Domestic Biases—Robustness (II)

Estimation Method	Tobit		GMM	
Variables	**Foreign Bias**	**Domestic Bias**	**Foreign Bias**	**Domestic Bias**
Risk–Return Profile				
RMEAN	0.0195*	−0.0209**	0.0243***	−0.00759
	(1.91)	(−2.03)	(2.72)	(−0.93)
RVOL	−0.0258**	−0.000901	−0.0218**	0.0239**
	(−2.50)	(−0.09)	(−2.05)	(2.55)
RSKE	0.00924	0.00171	0.00297	0.00565
	(0.68)	(0.12)	(0.24)	(0.51)
FXVOL	0.785	−0.00395	1.381	0.173
	(0.75)	(−0.00)	(1.43)	(0.2)
FXSKE	−0.00869	0.002	−0.00424	−0.00164
	(−0.62)	(0.14)	(−0.33)	(−0.14)
Market Attributes				
SIZE	−0.162***	−0.794***	−0.173**	−0.555***
	(−3.05)	(−17.12)	(−2.46)	(−9.15)
FinDev	0.113	−0.462**	0.39	−0.0475
	(0.45)	(−2.09)	(1.06)	(−0.14)
OPENNESS	0.308***	−0.0873	0.226***	−0.000846
	(4.02)	(−1.19)	(2.61)	(−0.01)
Rating	0.0364***	−0.0141	0.0348***	0.00438
	(3.89)	(−1.54)	(3.28)	(0.48)
Observations	241	241	200	200
Number of markets	41	41	41	41
Chi^2/F Value	107.8	413.1	5.14	11.26

Notes: This table reports estimated impacts of different variables on foreign and domestic biases using Tobit and systematic generalized method of moments (GMM) models, respectively. Dependent variables are foreign and domestic biases. RMEAN is the cumulative monthly return on local bond market index during the past 12 months. RVOL and RSKE are the standard deviation and skewness of monthly returns on bond indexes over the past 12 months. SIZE is the natural logarithm of aggregated value of outstanding bonds in a bond market. FXVOL and FXSKE are the standard deviation and skewness of monthly real effective exchange rates changes during the past 12 months, respectively. FinDev is the natural logarithm of the financial development indicator constructed in Svirydzenka (2016). OPENNESS is the natural logarithm of the capital control index from Table 4dii of the Economic Freedom Network. Rating is the average rating on foreign and local currency sovereign bonds from S&P Global Ratings. The first two models are estimated using panel-fixed effects by including time- and market-fixed effects; the last two models are estimated using panel-random effects by including year-fixed effects. T values are calculated from standard errors cluster at the market level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' calculations.

Table 30: Determinants of Foreign and Domestic Biases in Developed and Emerging Markets

Subsamples	Developed Markets		Emerging Markets	
Variables	Foreign Bias	Domestic Bias	Foreign Bias	Domestic Bias
Risk–Return Profile				
RMEAN	−0.00897	0.0268*	0.0269	−0.0146***
	(−0.58)	(1.78)	(1.47)	(−3.26)
RVOL	−0.0270	−0.0519	−0.0344***	0.00525
	(−1.45)	(−1.57)	(−3.47)	(0.93)
RSKE	0.00417	0.0096	−0.00106	0.000804
	(0.34)	(0.60)	(−0.03)	(0.11)
FXVOL	4.764*	1.239	0.574	−0.181
	(1.73)	(0.31)	(0.58)	(−0.99)
FXSKE	−0.0108	−0.0135	−0.0219	0.000051
	(−0.62)	(−0.55)	(−1.09)	(0.01)
Market Attributes				
SIZE	−0.0615	−0.375	−0.0813	−0.742***
	(−0.29)	(−0.98)	(−0.52)	(−7.76)
FinDev	−0.436	0.503	0.504	0.167
	(−0.51)	(0.45)	(0.77)	(1.17)
OPENNESS	0.273**	0.0506	0.346	−0.0904
	(2.76)	(0.34)	(1.60)	(−1.68)
Rating	0.00316	0.0119	0.0508*	−0.0116***
	(0.18)	(0.31)	(1.92)	(−4.45)
Observations	138	138	103	103
Number of markets	23	23	18	18
Number of markets	0.277	0.14	0.355	0.931
Number of markets	YES	YES	YES	YES
Number of markets	YES	YES	YES	YES
Chi^2/F Value	12.49	17.23	37.54	597

Notes: This table reports estimated determinants of foreign and domestic biases in emerging and developed bond markets. The market classification is from BIS. Dependent variables are foreign and domestic biases defined as the deviations of a market's weight in the aggregate foreign and domestic bond investment portfolios from the market's weight in the world bond portfolio. RMEAN is the cumulative monthly return on local bond market index during the past 12 months. RVOL and RSKE are the standard deviation and skewness of monthly returns on bond indexes over the past 12 months. SIZE is the natural logarithm of aggregated value of outstanding bonds in a bond market. FXVOL and FXSKE are the standard deviation and skewness of monthly real effective exchange rates changes during the past 12 months, respectively. FinDev is the natural logarithm of the financial development indicator constructed in Svirydzenka (2016). OPENNESS is the natural logarithm of the capital control index from Table 4dii of the Economic Freedom Network. Rating is the average rating on foreign and local currency sovereign bonds from S&P Global Ratings. Models are estimated using panel-fixed effects by including time- and market-fixed effects. T values are calculated from standard errors clustered at the market level. ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

Source: Authors' calculations.

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Appendix

Table A1: Variable Definitions and Data Sources

Variables	Definitions	Data Sources
Foreign bias and domestic bias (FB and DB)	Deviation of a market's weight in the aggregate foreign (domestic) investment portfolio from the market's weight in the world bond portfolio: $FB_{i,t} = \log(\frac{w_{i,t}^{FI}}{w_{i,t}^{M}})$ and $DB_{i,t} = \log(\frac{w_{i,t}^{DI}}{w_{i,t}^{M}})$	International Monetary Fund's Coordinated Portfolio Investment Survey
Bond market size (SIZE)	Natural logarithm of aggregated value of outstanding bonds in a bond market	BIS debt securities statistics (DEBT_SEC2) Table C1
Return momentum (RMEAN)	Average monthly return on bond market index during the past 12 months	JP Morgan GBI Aggregate Diversified Index; Emerging Market Bond Index Global Diversified
Return volatility (RVOL)	Standard deviation of monthly return on bond market index during the past 12 months	
Return skewness (RSKE)	Skewness of monthly return on bond market index during the past 12 months	
Exchange rate volatility (FXVOL)	Standard deviation of monthly percentage changes of real effective exchange rates during the past 12 months	BIS monthly effective exchange rates
Exchange rate skewness (FXSKE)	Skewness of monthly percentage changes of real effective exchange rates during the past 12 months	
Financial development (FINDEV)	Natural logarithm of financial development indicator constructed in Svirydzenka (2016): 0 (less developed) to 1 (well developed)	Svirydzenka (2016)
Financial market openness (OPENNESS)	Natural logarithm of capital control index from Table 4dii of the Economic Freedom Network: 0 (fully controlled) to 10 (fully open)	Economic Freedom Network
Sovereign rating (RATING)	Average rating on foreign and local currency sovereign bonds from S&P Global Ratings	Bloomberg

BIS = Bank for International Settlements.

Source: Authors' calculations.

Market Summaries

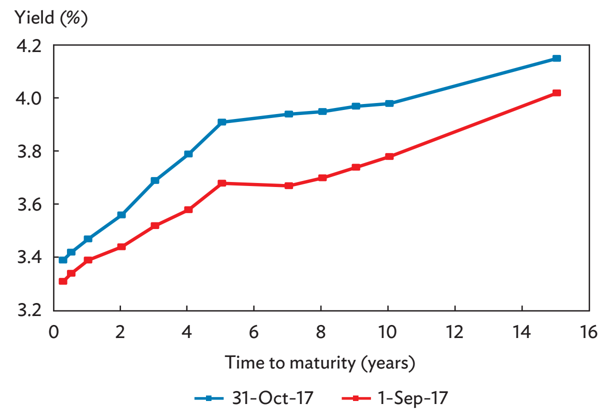
People's Republic of China

Yield Movements

The government bond yield curve of the People's Republic of China (PRC) shifted upward for all tenors between 1 September and 31 October (**Figure 1**). Excluding the 15-year tenor, the pick-up in yields was most pronounced at the long-end of the curve. Yields for tenors of 3 years or less rose an average of 11 basis points (bps), while yields rose an average of 23 bps for the 4-year through 10-year tenor. The 15-year tenor rose 13 bps.

The rise in the PRC's yields has been largely driven by concerns over the ongoing deleveraging campaign being conducted by the government to reduce debt levels. As a result of the bigger gains at the long-end of the curve, the 2-year versus 10-year yield spread rose to 42 bps on 31 October from 34 bps on 1 September.

Figure 1: The People's Republic of China's Benchmark Yield Curve—Local Currency Government Bonds



Source: Based on data from Bloomberg LP.

There was a temporary inversion in the PRC's yield curve as the government's deleveraging campaign pushed yields at the short-end to levels higher than those at the long-end. Yields at the long-end, such as the 10-year yield, declined in September after economic data releases showed weaker growth. For example, August industrial production (released in September) grew 6.0% year-on-year (y-o-y) after gaining 6.4% y-o-y in July. Growth in investment in fixed assets slowed to 7.8% y-o-y in January–August from 8.3% y-o-y in January–July.

Data on economic growth released since September indicate that the PRC will continue its relatively modest economic growth. The PRC's gross domestic product grew 6.8% y-o-y in the third quarter (Q3) of 2017, marginally down from second quarter (Q2) growth of 6.9% y-o-y. Industrial profits grew 22.8% y-o-y in January–September after gaining 21.6% y-o-y in January–August. Industrial production growth also picked up to 6.6% y-o-y in September from 6.0% y-o-y in August. In addition, while consumer price inflation remains benign, slowing to 1.6% y-o-y in September from 1.8% y-o-y in August, producer prices rose 6.9% y-o-y in September after climbing 6.3% y-o-y in August, reflecting strengthening in the manufacturing sector.

Yields at the long-end of the curve trended upward in October more rapidly than yields at the short-end. In addition to better economic data, the market was also concerned that the Government of the PRC would impose additional deleveraging measures. On 15 October, the People's Bank of China (PBOC) Governor Zhou Xiaochuan said that corporate debt remains too high and that there was a need to focus more effort on deleveraging and policies that promote financial stability.

Size and Composition

The PRC's local currency (LCY) bonds outstanding rose 5.3% quarter-on-quarter (q-o-q) and 14.2% y-o-y in Q3 2017 to reach CNY54.7 trillion at the end of September. The q-o-q growth rate accelerated from 4.1% in the previous quarter due to faster increases in the amount of both government and corporate bonds outstanding (**Table 1**).

Government bonds. Growth in the PRC's bond market was driven by increases in the government bond segment. Government bonds outstanding increased 6.1% q-o-q in Q3 2017, up from 5.8% q-o-q growth in the previous quarter, mainly led by local government bonds

Table 1: Size and Composition of the Local Currency Bond Market in the People's Republic of China

	Outstanding Amount (billion)						Growth Rates (%)			
	Q3 2016		Q2 2017		Q3 2017		Q3 2016		Q3 2017	
	CNY	USD	CNY	USD	CNY	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**47,980**	**7,178**	**51,931**	**7,658**	**54,693**	**8,221**	**4.2**	**113.3**	**5.3**	**14.2**
Government	33,154	4,969	37,159	5,480	39,438	5,928	6.0	35.1	6.1	19.0
Treasury Bonds and Local Government Bonds	20,912	3,134	24,405	3,599	26,340	3,959	10.3	57.7	7.93	26.0
Central Bank Bonds	27	4	0	0	0	0	(93.6)	(93.6)	0.0	(100.0)
Policy Bank Bonds	12,215	1,831	12,755	1,881	13,098	1,969	2.6	12.5	2.7	7.2
Corporate	14,736	2,209	14,771	2,178	15,255	2,293	0.3	256.0	3.3	3.5
Policy Bank Bonds										
China Development Bank	7,051	1,057	7,183	1,059	7,331	1,102	1.1	6.7	2.1	4.0
Export–Import Bank of China	2,028	304	2,217	327	2,280	343	2.0	11.6	2.9	12.4
Agricultural Devt. Bank of China	3,136	470	3,355	495	3,488	524	6.7	29.1	4.0	11.2

( ) = negative, CNY = Chinese yuan, LCY = local currency, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Treasury bonds include savings bonds and local government bonds.
3. Bloomberg LP end-of-period LCY–USD rates are used.
4. Growth rates are calculated from an LCY base and do not include currency effects.

Sources: *ChinaBond*, *Wind Info*, and Bloomberg LP.

outstanding, which grew 11.9% q-o-q in Q3 2017 versus 13.0% q-o-q in Q2 2017.

Local government bonds again registered the highest growth rate among all government bond categories as local governments continued their debt swap program and issued new debt amid the setting of 2017 issuance quotas by the Government of the PRC. Total local government debt has been capped at CNY18.8 trillion. However, as part of the deleveraging efforts of the PRC, local government bond growth in Q3 2017 was not as strong as it was in 2016. Local government bonds grew 43.2% y-o-y in Q3 2017 versus 50.0% y-o-y growth in the same period last year.

Issuance of local government bonds in Q3 2017 grew 20.5% q-o-q as local governments sought to fill their respective quotas. For 2017, the PRC set quotas of CNY1.6 trillion for the issuance of local government bonds and CNY3.0 trillion for debt swaps. The target completion date for the local government debt swap program is in 2018.

Treasury bonds outstanding grew only 3.9% q-o-q in spite of an 83.1% q-o-q increase in issuance as the new bonds mostly replaced maturing bonds. In particular, CNY600 billion of special Treasury bonds were issued in August as part of the refinancing program.

There were no central bank bonds outstanding in Q3 2017 as the PBOC no longer issues such bonds.

Corporate bonds. The PRC's corporate bonds outstanding grew 3.3% q-o-q in Q3 2017 after declining 0.1% q-o-q in the previous quarter. Growth was driven by the capital-raising efforts of banks as outstanding commercial bank bonds and Tier 2 notes gained 7.4% q-o-q (**Table 2**). Local corporate bonds and medium-term notes also showed stronger growth, rising 4.4% q-o-q and 3.3% q-o-q, respectively. The deleveraging efforts and subsequent rise in interest rates at the short-end of the curve discouraged the issuance of short-term debt, leading to a 6.5% q-o-q decline in outstanding commercial paper. State-owned enterprise bonds also fell 2.1% q-o-q.

Total issuance of corporate bonds increased 45.1% q-o-q in Q3 2017 to CNY1.6 trillion, largely to finance maturing bonds as corporate bonds outstanding grew only 3.3% q-o-q. By category, the fastest growth came from local corporate bonds, which more than doubled, followed by medium-term notes, which grew 68.4% q-o-q (**Figure 2**).

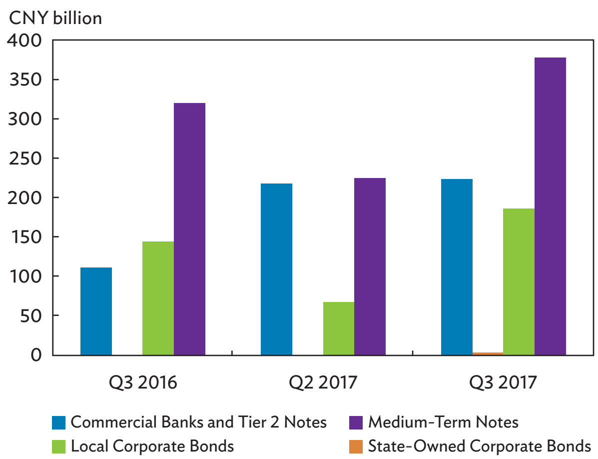
The PRC's corporate bond market continues to be dominated by a few big issuers (**Table 3**). At the end of Q3 2017, the top 30 corporate bond issuers accounted for CNY6.1 trillion worth of corporate bonds outstanding, or about 40.2% of the total market. Of the top 30, the 10 largest issuers accounted for CNY3.9 trillion. China Railway, the top issuer, has more than three times the outstanding amount of bonds as State Grid Corporation of China, the second largest

Table 2: Corporate Bonds Outstanding in Key Categories

	Amount (CNY billion)			Growth Rate (%)			
				Q3 2016		Q3 2017	
	Q3 2016	Q2 2017	Q3 2017	q-o-q	y-o-y	q-o-q	y-o-y
Commercial Bank Bonds and Tier 2 Notes	2,372	2,713	2,915	1.0	27.6	7.4	22.9
SOE Bonds	560	519	508	1.0	(3.7)	(2.1)	(9.2)
Local Corporate Bonds	2,911	2,932	3,060	1.0	16.8	4.4	5.1
Commercial Paper	2,380	1,657	1,549	0.9	(4.8)	(6.5)	(34.9)
Medium-Term Notes	4,604	4,662	4,816	1.0	7.4	3.3	4.6

( ) = negative, CNY = Chinese yuan, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, SOE = state-owned enterprise, y-o-y = year-on-year.
Sources: *ChinaBond* and *Wind Info*.

Figure 2: Corporate Bond Issuance in Key Sectors



CNY = Chinese yuan, Q2 = second quarter, Q3 = third quarter.
Sources: *ChinaBond* and *Wind Info*.

issuer. The top 30 issuer includes 14 banks, which continue to dominate the list as they generate funding in order to beef up their capital bases and liquidity, and lengthen their maturity profiles.

Table 4 lists the largest corporate bond issuances in Q3 2017. All of the companies on the list are financial firms except for China Railway Corporation.

Investor Profile

Treasury bonds and policy bank bonds. Banks were the single largest holder of Treasury bonds and policy bank bonds at the end of September, though this share had declined to 66.8% from 68.4% a year earlier (**Figure 3**). In contrast, the share held by funds institutions rose to 16.2% from 13.6% in the same period.

Corporate bonds. Funds institutions were the largest holders of corporate bonds at the end of September with a share of 48.2% of outstanding corporate bonds, up from a 44.9% share at the end of September 2016 (**Figure 4**). The share held by banks declined to 15.8% from 18.1% during the review period. **Figure 5** presents investor profiles across different corporate bond categories at the end of September. Funds institutions are the dominant buyers in the PRC of both local corporate bonds and medium-term notes, while banks and insurance companies are the dominant holders of commercial bank bonds.

Liquidity

The volume of interest rate swaps declined 9.7% q-o-q in Q3 2017. The 7-day repurchase remained the most used interest rate swap, comprising a 73.6% share of the total interest rate swap volume during the quarter (**Table 5**).

The trading volume of government bonds rose in Q3 2017; however, turnover ratios were still lower than in Q3 2016, owing to the ongoing deleveraging of the government (**Figure 6**).

Ratings Update

In September, S&P Global downgraded the PRC's long-term foreign currency rating to A+ from AA– with a stable outlook. In its decision, S&P Global cited the PRC's rising debt levels as a reason for the downgrade.

Table 3: Top 30 Issuers of Local Currency Corporate Bonds in the People's Republic of China

Issuers		Outstanding Amount		State-Owned	Listed Company	Type of Industry
		LCY Bonds (CNY billion)	LCY Bonds (USD billion)			
1.	China Railway	1,456.5	218.93	Yes	No	Transportation
2.	State Grid Corporation of China	401.8	60.40	Yes	No	Public Utilities
3.	China National Petroleum	325.0	48.85	Yes	No	Energy
4.	Bank of China	288.9	43.42	Yes	Yes	Banking
5.	Agricultural Bank of China	278.0	41.79	Yes	Yes	Banking
6.	Industrial and Commercial Bank of China	268.0	40.28	Yes	Yes	Banking
7.	Bank of Communications	245.0	36.83	Yes	Yes	Banking
8.	China Construction Bank	212.0	31.87	Yes	Yes	Banking
9.	Shanghai Pudong Development Bank	204.6	30.75	No	Yes	Banking
10.	China Everbright Bank	188.9	28.39	Yes	Yes	Banking
11.	Industrial Bank	185.0	27.81	No	Yes	Banking
12.	China Minsheng Banking	170.1	25.57	No	Yes	Banking
13.	China CITIC Bank	157.5	23.67	No	Yes	Banking
14.	State Power Investment	142.0	21.35	Yes	Yes	Energy
15.	Bank of Beijing	137.9	20.73	Yes	Yes	Banking
16.	PetroChina	137.0	20.59	Yes	Yes	Energy
17.	Huaxia Bank	130.4	19.60	Yes	Yes	Banking
18.	Central Huijin Investment	109.0	16.38	Yes	Yes	Asset Management
19.	China Huarong Asset Management	106.0	15.93	Yes	Yes	Asset Management
20.	Tianjin Infrastructure Construction and Investment Group	96.3	14.48	Yes	No	Construction
21.	China Three Gorges	95.5	14.35	Yes	Yes	Public Utilities
22.	CITIC Securities	95.3	14.32	Yes	Yes	Brokerage
23.	Dalian Wanda Commercial Properties	93.0	13.98	No	Yes	Real Estate
24.	China Cinda Asset Management	91.0	13.68	Yes	Yes	Asset Management
25.	China Merchants Bank	89.0	13.38	Yes	Yes	Banking
26.	Guotai Junan Securities	87.3	13.12	No	Yes	Brokerage
27.	Haitong Securities	87.1	13.09	No	Yes	Brokerage
28.	China Guangfa Bank	86.5	13.00	Yes	Yes	Banking
29.	Shenhua Group	82.5	12.40	Yes	Yes	Mining
30.	China Datang Corporation	79.7	11.98	Yes	Yes	Energy
Total Top 30 LCY Corporate Issuers		**6,126.79**	**920.93**			
Total LCY Corporate Bonds		**15,254.99**	**2,293.02**			
Top 30 as % of Total LCY Corporate Bonds		**40.2%**	**40.2%**			

CNY = Chinese yuan, LCY = local currency, USD = United States dollar.
Notes:
1. Data as of end-September 2017.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

Table 4: Notable Local Currency Corporate Bond Issuance in the Third Quarter of 2017

Corporate Issuers	Coupon Rate (%)	Issued Amount (CNY billion)
China Railway Corporation		
5-year bond	4.30	13
5-year bond	4.31	15
10-year bond	4.48	5
10-year bond	4.61	7
China Everbright Bank		
3-year bond	4.20	22
10-year bond	4.70	12
Bank of China		
10-year bond	4.45	30
Central Huijin Investment		
5-year bond	4.38	26
Huaxia Bank		
3-year bond	4.30	22

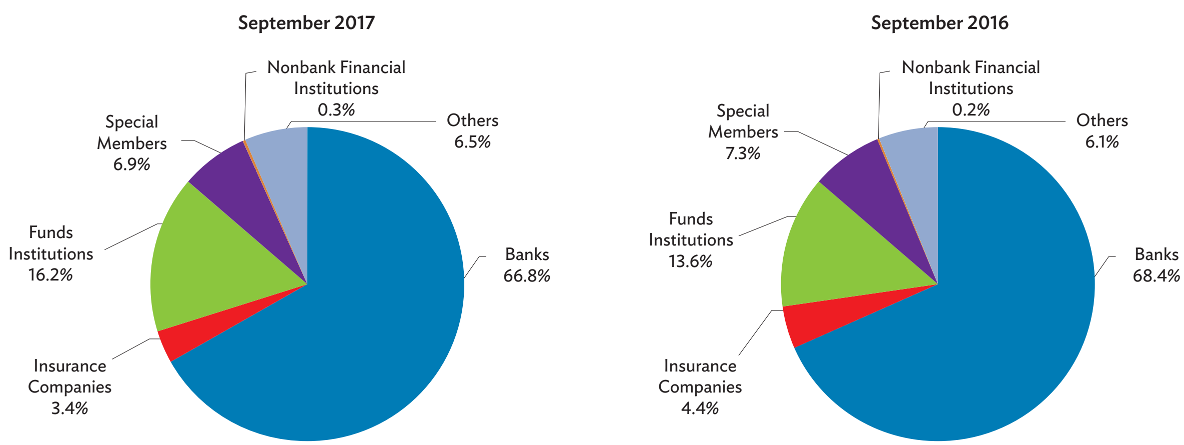
CNY = Chinese yuan.
Source: Based on data from Bloomberg LP.

Policy, Institutional, and Regulatory Developments

People's Bank of China Reduces Reserve Requirement Ratio for Select Institutions

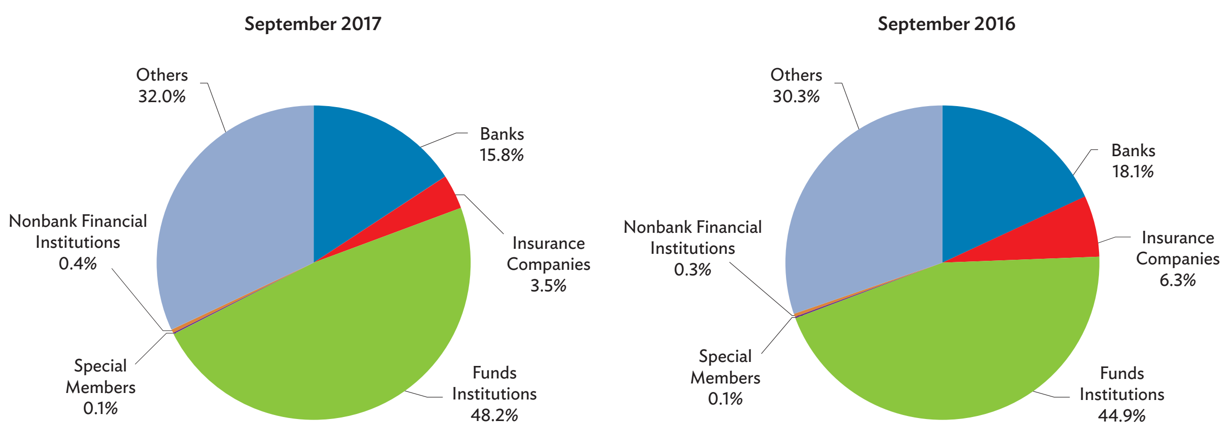
In September, the PBOC announced that it would reduce the reserve requirement ratio for banks that meet established lending metrics to small and medium-sized enterprises, and to the agriculture sector. Banks will receive a 50-bps reduction in their ratio if their loans to the abovementioned sectors meet or exceed either 1.5% of new lending in 2017 or 1.5% of outstanding loans. Banks can receive a 150-bps reduction if the loans to these sectors comprise 10% or more of either new lending in 2017 or outstanding loans. Alternatively, banks will qualify for the 150-bps reduction if 10% or more of their

Figure 3: Local Currency Treasury Bonds and Policy Bank Bonds Investor Profile



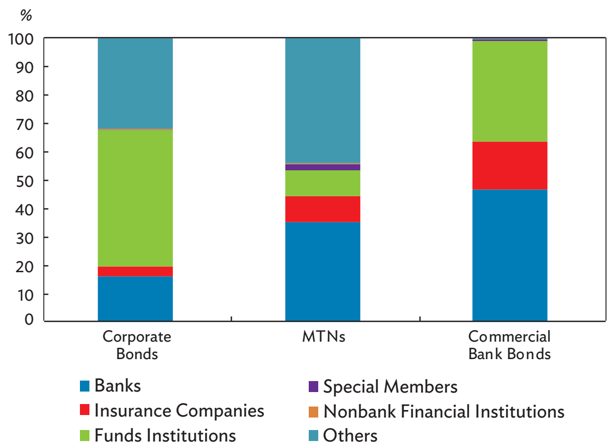
Source: *ChinaBond*.

Figure 4: Local Currency Corporate Bonds Investor Profile



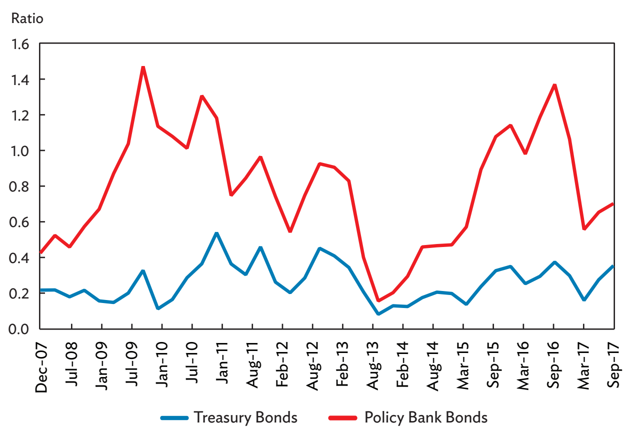
Source: *ChinaBond*.

Figure 5: Investor Profile across Bond Categories



MTNs = medium-term notes.
Note: Data as of end-September 2017.
Source: *ChinaBond*.

Figure 6: Turnover Ratios for Government Bonds



Source: *ChinaBond*.

outstanding loans are made to the specially designated "inclusive finance" sector. Rural banks can get a 100-bps reduction if 10% or more of new loans are made to local entities. The reductions will take effect in 2018.

Table 5: Notional Values of the People's Republic of China's Interest Rate Swap Market in the Third Quarter of 2017

Interest Rate Swap Benchmarks	Notional Amount (CNY billion)	Share of Total Notional Amount (%)	Growth Rate (%)
	Q3 2017		q-o-q
7-Day Repo Rate	2,690.3	73.64	6.78
Overnight SHIBOR	12.0	0.33	38.34
3-Month SHIBOR	941.9	25.78	201.09
1-Year Lending Rate	1.7	0.05	191.01
3-Year Lending Rate	1.4	0.04	13.45
5-Year Lending Rate	0.1	0.002	0.00
Depository Institution 7-day Repo Rate	6.1	0.17	(75.31)
Total	**3,653.5**	**100.00**	**(9.71)**

( ) = negative, CNY = Chinese yuan, q-o-q = quarter-on-quarter, Q3 = third quarter, Repo = repurchase, SHIBOR = Shanghai Interbank Offered Rate.
Note: Growth rate computed based on notional amounts.
Sources: *AsianBondsOnline* and *ChinaMoney*.

People's Bank of China Removes Reserve Requirement Ratio on Forward Transactions

In September, the PBOC removed reserve requirements imposed on the trading of foreign currency forwards. Previously, the ratio was set at 20%.

China Securities Regulatory Commission Imposes Limits on Money Market Funds

The China Securities Regulatory Commission tightened regulations on money market funds in September. Under the new guidelines, money market funds are limited in their lending to a single institution. The rules require money market funds to limit their holdings of deposits, bonds, and other assets from a single bank to no more than 10% of the bank's net assets. Additionally, assets from a single bank cannot exceed 2% of the outstanding assets of the mutual fund. Money market funds also cannot hold investments issued by institutions with a credit rating lower than AAA.

Hong Kong, China

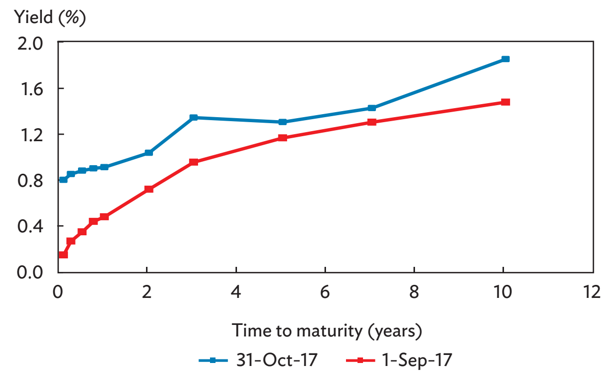
Yield Movements

Hong Kong, China's local currency (LCY) bond yield curve shifted upward for all tenors between 1 September and 31 October (**Figure 1**). The rise in yields was much larger at the short-end and the very long-end of the curve, with yields rising an average of 48 basis points (bps) for tenors of 3 years or less and an average of 40 bps for the 10-year and 15-year tenors. Yields rose an average of 13 bps for the 5-year and 7-year tenors. As a result, the 2-year versus 10-year yield spread rose to 81 bps on 31 October from 75 bps on 1 September.

Hong Kong, China's government bond yield movements largely tracked rate movements in the United States (US) as the Hong Kong dollar is pegged to the US dollar.

Hong Kong, China's inflation has been relatively stable, largely due to a lack of cost pressures from both domestic and imported goods. The inflation rate fell to 1.4% year-on-year (y-o-y) in September from 1.9% y-o-y in August.

Figure 1: Hong Kong, China's Benchmark Yield Curve—Exchange Fund Bills and Notes



Source: Based on data from Bloomberg LP.

Size and Composition

Hong Kong, China's outstanding LCY bonds rose 2.2% quarter-on-quarter (q-o-q) and 4.0% y-o-y to reach HKD1,904 billion (USD244 billion) at the end of the third quarter (Q3) of 2017 (**Table 1**). Growth accelerated from 0.6% q-o-q in the second quarter (Q2) of 2017.

The growth in outstanding bonds was largely driven by increases in Hong Kong, China's outstanding government bonds, which rose 3.7% q-o-q in Q3 2017 from 0.8% q-o-q in Q2 2017.

Among Hong Kong, China's government bonds, gains were noted in Exchange Fund Bills (EFBs). The q-o-q growth of 5.5% in EFBs was largely due to strong demand from financial institutions amid high interbank liquidity. The Hong Kong Monetary Authority issued additional EFBs in Q3 2017 beyond its original planned issuance in order to accommodate banks' liquidity.

Table 1: Size and Composition of the Local Currency Bond Market in Hong Kong, China

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2016		Q2 2017		Q3 2017		Q3 2016		Q3 2017	
	HKD	USD	HKD	USD	HKD	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**1,831**	**236**	**1,862**	**239**	**1,904**	**244**	**4.3**	**18.0**	**2.2**	**4.0**
Government	1,067	138	1,076	138	1,116	143	5.4	21.8	3.7	4.6
Exchange Fund Bills	911	117	923	118	974	125	6.0	28.0	5.5	6.9
Exchange Fund Notes	51	7	43	6	41	5	(4.1)	(16.9)	(5.1)	(20.3)
HKSAR Bonds	105	14	111	14	101	13	4.8	2.0	(8.5)	(3.8)
Corporate	764	98	786	101	788	101	2.9	13.1	0.2	3.2

( ) = negative, HKD = Hong Kong dollar, HKSAR = Hong Kong Special Administrative Region, LCY = local currency, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. Growth rates are calculated from an LCY base and do not include currency effects.
Sources: Hong Kong Monetary Authority and Bloomberg LP.

Exchange Fund Notes (EFNs) and Hong Kong Special Administrative Region (HKSAR) bonds both registered q-o-q declines in Q3 2017. EFNs fell 5.1% q-o-q and HKSAR bonds fell 8.5% q-o-q. EFNs have declined owing to a lack of issuance as EFB issuance is now solely limited to the 2-year tenor.

HKSAR bonds declined in Q3 2017 as the government only issued a single 15-year HKSAR bond valued at HKD600 million under the Institutional Bond Issuance Programme.

The amount of corporate bonds outstanding rose 0.2% q-o-q and 3.2% y-o-y in Q3 2017. Hong Kong, China's top 30 nonbank issuers had outstanding LCY bonds amounting to HKD148.4 billion at the end of June, comprising 18.8% of total corporate bonds outstanding. A majority of the top 30 issuers were the financing vehicles of large Hong Kong, China-based companies (**Table 2**). The Hong Kong Mortgage Corporation remained the top issuer with outstanding bonds of HKD26.7 billion, followed by Sung Hung Kai Properties (Capital Market) with HKD12.4 billion and MTR Corporation (C.I.) with HKD10.0 billion. Among the top 30 nonbank issuers at the end of June, six were state-owned companies and six were Hong Kong Exchange-listed firms.

Among the top five nonbank issuances in Q3 2017, the majority came from the financing vehicles of a number of Hong Kong, China companies with the exception of MTR Corporation (**Table 3**).

Ratings Update

S&P Global lowered Hong Kong, China's credit rating to AA+, citing Hong Kong, China's connections with the People's Republic of China as the reason for the downgrade.

Policy, Institutional, and Regulatory Developments

Hong Kong, China Includes US Dollar Bonds Issued by the People's Republic of China as Collateral for Renminbi Liquidity Facility

In November, the Hong Kong Monetary Authority declared that the USD-denominated bonds issued by the People's Republic of China in October will be allowable as collateral for the Renminbi Liquidity Facility that Hong Kong, China banks can tap as a source of renminbi liquidity.

Table 2: Top 30 Nonbank Corporate Issuers of Local Currency Corporate Bonds in Hong Kong, China

	Issuers	Outstanding Amount		State-Owned	Listed Company	Type of Industry
		LCY Bonds (HKD billion)	LCY Bonds (USD billion)			
1.	The Hong Kong Mortgage Corporation	26.7	3.4	Yes	No	Finance
2.	Sun Hung Kai Properties (Capital Market)	12.4	1.6	No	No	Real Estate
3.	MTR Corporation (C.I.)	10.0	1.3	Yes	Yes	Transportation
4.	Swire Pacific MTN Financing	8.9	1.1	No	No	Finance
5.	HKCG (Finance)	8.5	1.1	No	No	Finance
6.	CLP Power Hong Kong Financing	7.8	1.0	No	No	Finance
7.	The Link Finance (Cayman) 2009	7.8	1.0	No	No	Finance
8.	Hongkong Electric Finance	7.4	0.9	No	No	Finance
9.	NWD (MTN)	7.3	0.9	No	Yes	Finance
10.	Swire Properties MTN Financing	5.9	0.8	No	No	Finance
11.	Wharf Finance	5.7	0.7	No	No	Finance
12.	CK Property Finance (MTN)	4.2	0.5	No	No	Finance
13.	Vanke Real Estate (Hong Kong)	3.7	0.5	No	No	Real Estate
14.	Kowloon-Canton Railway	3.4	0.4	Yes	No	Transportation
15.	Urban Renewal Authority	2.8	0.4	Yes	No	Real Estate
16.	Cathay Pacific MTN Financing	2.4	0.3	No	Yes	Finance
17.	Leading Affluence	2.3	0.3	No	No	Real Estate
18.	Tencent Holdings	2.2	0.3	No	Yes	Comunications
19.	Bohai International Capital	2.0	0.3	No	No	Iron and Steel
20.	China Energy Reserve and Chemicals Group Overseas	2.0	0.3	No	No	Oil
21.	Emperor International Holdings	1.9	0.2	No	Yes	Real Estate
22.	Hong Kong Science and Technology Parks	1.7	0.2	Yes	No	Real Estate
23.	Wheelock Finance	1.7	0.2	No	No	Finance
24.	Value Success International	1.5	0.2	No	No	Finance
25.	Cheung Kong Finance (MTN)	1.5	0.2	No	No	Finance
26.	Airport Authority Hong Kong	1.5	0.2	Yes	No	Transportation
27.	Hysan (MTN)	1.4	0.2	No	Yes	Real Estate
28.	Wharf Finance (No. 1)	1.3	0.2	No	No	Finance
29.	Nan Fung Treasury	1.3	0.2	No	No	Finance
30.	Henderson Land MTN	1.2	0.2	No	No	Finance
Total Top 30 Nonbank LCY Corporate Issuers		**148.4**	**19.0**			
Total LCY Corporate Bonds		**787.8**	**100.9**			
Top 30 as % of Total LCY Corporate Bonds		**18.8%**	**18.8%**			

LCY = local currency.
Notes:
1. Data as of end-September 2017.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Hong Kong Monetary Authority data.

Table 3: Notable Local Currency Corporate Bond Issuance in the Third Quarter of 2017

Corporate Issuers	Coupon Rate (%)	Issued Amount (HKD billion)
CK Property Finance (MTN)		
5-year bond	1.88	1.45
10-year bond	2.95	0.90
Sun Hung Kai Properties (Capital Market)		
7-year bond	2.55	0.35
7-year bond	2.55	0.30
7-year bond	2.50	0.30
10-year bond	2.68	0.38
10-year bond	2.70	0.36
10-year bond	2.65	0.30
10-year bond	2.70	0.30
MTR Corporation		
15-year bond	2.46	0.72
30-year bond	2.99	0.70
30-year bond	2.83	0.32
HKCD (Finance)		
10-year bond	2.65	0.70
Swire Properties MTN Financing		
7-year bond	2.55	0.20
8-year bond	2.60	0.20
10-year bond	2.65	0.20

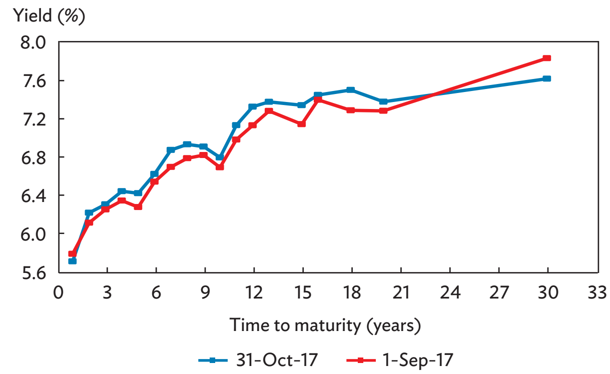
HKD = Hong Kong dollar.
Source: Central Moneymarkets Unit, Hong Kong Monetary Authority.

Indonesia

Yield Movements

Between 1 September and 31 October, all local currency (LCY) government bond yields climbed in Indonesia except for the 1-year and 30-year maturities (**Figure 1**). Bond yields rose an average of 12 basis points (bps) from the 2-year through the 20-year tenors, while shedding 8 bps and 21 bps, respectively, at the short-end and long-end of the curve. The spread between the 2-year and 10-year tenors slipped from 58 bps on 1 September to 57 bps on 31 October.

Figure 1: Indonesia's Benchmark Yield Curve—Local Currency Government Bonds



Source: Based on data from Bloomberg LP.

The overall rise in yields was due largely to a sell-off as investor sentiment turned negative. In September, the United States (US) Federal Reserve signaled further tightening and the beginning of its balance sheet normalization in October. In addition, the European Central Bank also announced that it will taper its asset purchases beginning in January 2018.

Compared to its regional peers, a relatively large share of Indonesia's bonds are held by foreign investors, making its bond market sensitive to capital flight risks. At the end of September, the share of foreign investors hit 40.0%, up from the end-June level of 39.5%. This share had reached a high of 40.5% earlier in September after Bank Indonesia's policy rate cut. However, as monetary policy direction in most advanced economies became hawkish, investors turned cautious and took profits. At the end of October, nonresident holdings of Indonesian government bonds had fallen to 38.4% of the total. The Ministry of Finance, however, stated that this decline was just a temporary market reaction. Meanwhile, onshore demand continues to support the market.

Bank Indonesia lowered its policy rate by 25 bps each in August and again in September. Low inflation provided the central bank room for easing monetary policy to boost growth. In its meeting on 18–19 October, the central bank took a pause and maintained the 7-day reverse repurchase rate at 4.25%. The deposit facility rate and the lending facility rate were also maintained at 3.50% and 5.00%, respectively. The central bank deems that current rates are consistent with holding inflation within its target range and keeping the current account deficit at a manageable level. Consumer price inflation trended lower in July–October and has remained within Bank Indonesia's full-year 2017 target range of between 3.0% and 5.0%.

Real gross domestic product (GDP) growth inched up to 5.06% year-on-year (y-o-y) in the third quarter (Q3) of 2017 compared with 5.01% from the prior quarter, falling below Bank Indonesia and analysts' expectations. Growth in household consumption continued to weaken, rising 4.93% y-o-y in Q3 2017 versus 4.95% in the previous quarter. Government spending rebounded, posting growth of 3.5% after contracting in the previous 2 quarters. Also, contributing to the overall y-o-y growth in Q3 2017 were investments (7.1%) and exports (17.3%). Based on the revised state budget for 2017, full-year economic growth is estimated at 5.2%.

Size and Composition

The LCY bond market in Indonesia continued to expand to reach a size of IDR2,426.1 trillion (USD180 billion) at the end of September. Growth was up 4.1% quarter-on-quarter (q-o-q) in Q3 2017 from 1.8% in the second quarter (Q2) of 2017 (**Table 1**). On a y-o-y basis, growth moderated to 12.7% from 16.4% in the same review period. Both the government and corporate bond segments contributed to overall growth during the quarter.

At the end of September, government bonds accounted for 85.2% of Indonesia's total LCY bond stock. The

Table 1: Size and Composition of the Local Currency Bond Market in Indonesia

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2016		Q2 2017		Q3 2017		Q3 2016		Q3 2017	
	IDR	USD	IDR	USD	IDR	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**2,153,035**	**165**	**2,331,240**	**175**	**2,426,060**	**180**	**7.5**	**27.2**	**4.1**	**12.7**
Government	1,866,325	143	1,998,689	150	2,066,296	153	7.7	29.4	3.4	10.7
Central Govt. Bonds	1,749,384	134	1,952,234	146	2,046,933	152	6.2	25.6	4.9	17.0
of which: *Sukuk*	239,868	18	297,424	22	329,039	24	9.6	59.5	10.6	37.2
Central Bank Bills	116,941	9	46,455	3	19,363	1	35.8	132.3	(58.3)	(83.4)
of which: *Sukuk*	9,442	0.7	9,421	0.7	12,626	0.9	26.4	22.3	34.0	33.7
Corporate	286,710	22	332,550	25	359,763	27	6.2	14.9	8.2	25.5
of which: *Sukuk*	10,744	0.8	13,385	1	13,958	1	12.4	29.7	4.3	29.9

( ) = negative, IDR = Indonesian rupiah, LCY = local currency, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. Growth rates are calculated from an LCY base and do not include currency effects.
4. The total stock of nontradable bonds as of end-September stood at IDR233.4 trillion.
Sources: Bank Indonesia; Directorate General of Budget Financing and Risk Management, Ministry of Finance; Indonesia Stock Exchange; and Bloomberg LP.

remaining share of 14.8% was accounted for by corporate bonds. In the same period, conventional bonds dominated the LCY bond market with a share of 85.3% of the total. Nonetheless, the share of *sukuk* (Islamic bonds) has been slowly but steadily rising. *Sukuk* accounted for 14.7% of the aggregate bond stock at the end of September, up from 13.7% at the end of June and 12.1% at the end of September 2016.

Government bonds. The outstanding amount of LCY government bonds rose 3.4% q-o-q in Q3 2017 and 10.7% y-o-y at the end of September. Growth was solely driven by central government bonds, which comprise Treasury bills and bonds issued by the Ministry of Finance. The outstanding size of central bank bills, or Sertifikat Bank Indonesia (SBI), which are issued by Bank Indonesia, continued to fall during the review period.

Central government bonds. At the end of September, central government bonds outstanding reached IDR2,046.9 trillion on growth of 4.9% q-o-q and 17.0% y-o-y. Increased demand for bonds allowed the government to accept more than its targeted amount in 11 out of 13 auctions during the quarter. Only one auction was partially awarded in Q3 2017. New issuance of Treasury instruments in Q3 2017 reached IDR153.2 trillion on growth of 32.3% q-o-q and 28.9% y-o-y.

Central bank bills. The outstanding amount of central bank bills contracted to IDR19.4 trillion at the end of September on declines of 58.3% q-o-q and 83.4% y-o-y.

The decline in the stock of central bank bills was due to Bank Indonesia's cessation of issuance of conventional SBI at the beginning of 2017. Bank Indonesia, however, continues to issue shariah-compliant SBI, the issuance volume of which is relatively small compared with previous issuance of conventional SBI.

New issuance of shariah-compliant SBI climbed from a low base of IDR1.1 trillion in Q2 2017 to IDR6.8 trillion in Q3 2017. While issuance was higher during the quarter, the size of central bank certificates declined, as maturities exceeded new issuance.

Corporate bonds. At the end of September, LCY corporate bonds outstanding rose to IDR359.8 trillion on higher growth of 8.2% q-o-q and 25.5% y-o-y in Q3 2017 compared with 3.6% q-o-q and 23.1% y-o-y in the previous quarter. The q-o-q expansion in corporate bonds was due to more active issuance during the quarter.

Corporate bonds in Indonesia lagged in terms of growth vis-à-vis the government segment, which is consistent with the findings of our annual bond market liquidity survey as bond market participants cited some of the factors deterring growth. Among these are the lengthy issuance process for issuing bonds, absence of market makers, and need for greater diversity in the investor base.

At the end of September, 111 corporate firms were tapping the bond market for their funding requirements. Of which, the top 30 largest issuers had outstanding bonds

Table 2: Top 30 Issuers of Local Currency Corporate Bonds in Indonesia

	Issuers	Outstanding Amount		State-Owned	Listed Company	Type of Industry
		LCY Bonds (IDR billion)	LCY Bonds (USD billion)			
1.	Indonesia Eximbank	33,538	2.49	Yes	No	Banking
2.	Bank Rakyat Indonesia	24,175	1.79	Yes	Yes	Banking
3.	Bank Tabungan Negara	17,950	1.33	Yes	Yes	Banking
4.	Indosat	14,113	1.05	No	Yes	Telecommunications
5.	Bank Pan Indonesia	12,085	0.90	No	Yes	Banking
6.	Bank Mandiri	11,000	0.82	Yes	Yes	Banking
7.	PLN	10,883	0.81	Yes	No	Energy
8.	Federal International Finance	10,780	0.80	No	No	Finance
9.	Adira Dinamika Multifinance	9,833	0.73	No	Yes	Finance
10.	Telekomunikasi Indonesia	8,995	0.67	Yes	Yes	Telecommunications
11.	Astra Sedaya Finance	8,215	0.61	No	No	Finance
12.	Bank Maybank Indonesia	8,121	0.60	No	Yes	Banking
13.	Hutama Karya	7,115	0.53	Yes	No	Non-Building Construction
14.	Medco-Energi International	7,000	0.52	No	Yes	Petroleum and Natural Gas
15.	Bank CIMB Niaga	6,850	0.51	No	Yes	Banking
16.	Sarana Multigriya Finansial	6,714	0.50	Yes	No	Finance
17.	Waskita Karya	6,557	0.49	Yes	Yes	Building Construction
18.	Sarana Multi Infrastruktur	5,900	0.44	Yes	No	Finance
19.	Bank Permata	5,810	0.43	No	Yes	Banking
20.	Perum Pegadaian	5,140	0.38	Yes	No	Finance
21.	Permodalan Nasional Madani	4,933	0.37	Yes	No	Finance
22.	Toyota Astra Financial Services	4,864	0.36	No	No	Finance
23.	Pupuk Indonesia	4,701	0.35	Yes	No	Chemical Manufacturing
24.	Bank OCBC NISP	4,400	0.33	No	Yes	Banking
25.	Indofood Sukses Makmur	4,000	0.30	No	Yes	Food and Beverages
26.	Adhi Karya	3,997	0.30	Yes	Yes	Building Construction
27.	Surya Artha Nusantara Finance	3,862	0.29	No	No	Finance
28.	Mandiri Tunas Finance	3,675	0.27	No	No	Finance
29.	BFI Finance indonesia	3,350	0.25	No	Yes	Finance
30.	Bank Bukopin	3,305	0.25	No	Yes	Banking
Total Top 30 LCY Corporate Issuers		**261,861**	**19.44**			
Total LCY Corporate Bonds		**359,763**	**26.70**			
Top 30 as % of Total LCY Corporate Bonds		**72.8%**	**72.8%**			

IDR = Indonesian rupiah, LCY = local currency, USD = United States dollar.
Notes:
1. Data as of end-September 2017.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Indonesia Stock Exchange data.

of IDR261.9 trillion, representing 72.8% of the aggregate corporate bond stock (**Table 2**). The top 30 list is dominated by banking and financial institutions. The list also includes 14 state-owned corporations, though state-owned firms Pupuk Indonesia and Adhi Karya were not among the top 30 corporate issuers at the end of June.

The top three firms on the list were state-owned banks. Maintaining its top spot was state-owned lender Indonesia Eximbank with outstanding bonds amounting to IDR33.5 trillion at the end of September. Next was another state-owned lender, Bank Rakyat Indonesia, whose total bonds increased to IDR24.2 trillion after it issued an aggregate of IDR5.2 trillion in new bonds in August. Climbing to the third spot at the end of September (from the fourth spot at the end of June) was Bank Tabungan Negara, which issued IDR5.0 trillion of new bonds in July.

In Q3 2017, corporate bond issuance reached IDR46.9 trillion, up 36.4% q-o-q and 71.7% y-o-y. A total of 27 firms tapped the bond market in Q3 2017 versus 18 issuers in Q2 2017. There were 71 new corporate bond series issued during the quarter, with issuance coming mostly from bank and financial institutions.

Table 3 presents the largest corporate bond issuances in Q3 2017. Leading the list were two state-owned banks, Bank Rakyat Indonesia and Bank Tabungan Negara, with aggregate bond issuance amounting to IDR5.2 trillion and IDR5.0 trillion, respectively. Third on the list was state-owned chemical manufacturing company, Pupuk Indonesia, whose dual-tranche issuance amounting to IDR3.6 trillion placed it among the top 30 corporate issuers at the end of September.

Table 3: Notable Local Currency Corporate Bond Issuance in the Third Quarter of 2017

Corporate Issuers	Coupon Rate (%)	Issued Amount (IDR billion)
Bank Rakyat Indonesia		
3-year bond	7.50	981
5-year bond	8.00	1,653
7-year bond	8.25	2,517
Bank Tabungan Negara		
3-year bond	8.30	1,466
5-year bond	8.50	1,295
7-year bond	8.70	853
10-year bond	8.90	1,386
Pupuk Indonesia		
3-year bond	7.90	1,485
7-year bond	8.60	2,085
Hutama Karya		
5-year bond	7.80	1,165
10-year bond	8.40	2,367
Indonesia Eximbank		
3-year bond	7.80	1,000
5-year bond	7.90	436
7-year bond	8.25	1,786
Bank Negara Indonesia		
5-year bond	8.00	3,000
Adhi Karya		
5-year bond	9.25	2,997

IDR = Indonesian rupiah.
Source: Indonesia Stock Exchange.

Investor Profiles

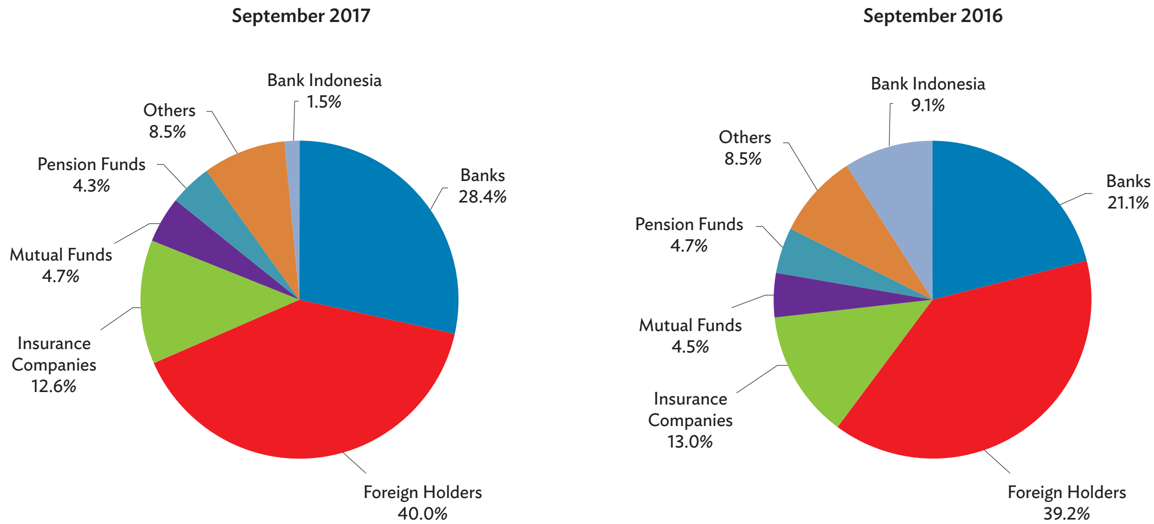
Offshore investors continued to comprise the largest investor group in Indonesia's LCY government bond market. The foreign holdings share climbed to 40.0% at the end of September from 39.5% at the end of June and from 39.2% in the same period a year earlier (**Figure 2**). In nominal terms, foreign investor holdings of LCY government bonds climbed to IDR819.4 trillion from IDR770.6 trillion at the end of June and from IDR685 trillion at the end of September 2016. While bond yields have declined since the start of the year, nonresident investors are still attracted to Indonesia's LCY government bonds as they offer the highest yields in the region.

In terms of maturity, foreign investors are mostly invested in longer-dated bonds (maturities of 10 years or more), which represent 36.0% of aggregate bond holdings, while 35.3% of offshore holdings are in bonds with maturities of 5 years to 10 years (**Figure 3**). At the end of September, bonds with maturities of 1 year or less comprised 6.1% of the total holdings of foreign investors.

Among domestic investors, banking institutions were the largest holder of government bonds. At the end of September, their holdings had risen significantly to a 28.4% share from 21.1% a year earlier. Banks have been increasing their holdings of government bonds as they seek alternative higher-yielding investments in which to park their excess funds.

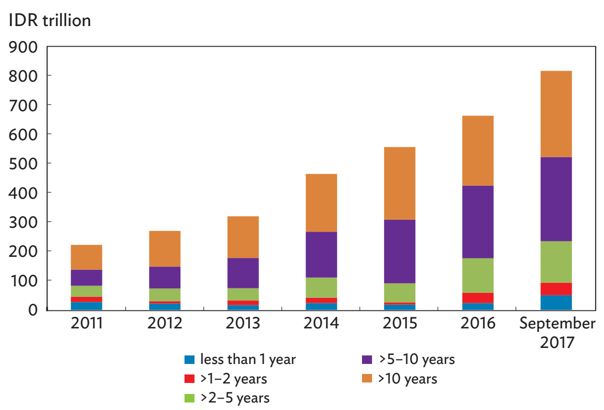
The only other domestic investor group that saw an increase in its holdings was mutual funds, whose share of

Figure 2: Local Currency Central Government Bonds Investor Profile



Source: Directorate General of Budget Financing and Risk Management, Ministry of Finance.

Figure 3: Foreign Holdings of Local Currency Central Government Bonds by Maturity



IDR = Indonesian rupiah.
Source: Directorate General of Budget Financing and Risk Management, Ministry of Finance.

the total inched up to 4.7% at the end of September from 4.5% in the same period a year earlier. All other investor groups recorded marginal declines in their respective holdings of government bonds except for Bank Indonesia, whose holdings slipped to a share of 1.5% at the end of September from 9.1% in September 2016.

Policy, Institutional, and Regulatory Developments

Bank Indonesia Allows Euro Swaps

In October, Bank Indonesia allowed hedging transactions involving the euro. The minimum transaction size for euro swaps is EUR1 million with terms of 3 months and 6 months. Earlier in July, the central bank allowed hedging transactions for Japanese yen swaps. These measures are expected to reduce dependence on the US dollar for trade and investment activities.

Indonesia's 2018 State Budget Bill Approved

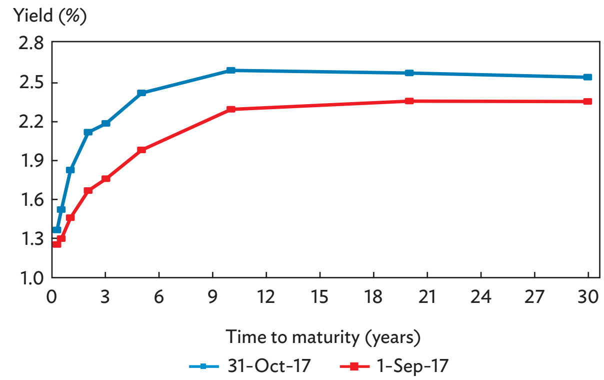
In October, the House of Representatives approved the government's proposed 2018 state budget, which estimates revenue amounting to IDR1,894.7 trillion and expenditure of IDR2,220 trillion. The budget deficit is projected to reach an equivalent of 2.2% of GDP. The underlying macroeconomic assumptions for the 2018 state budget include (i) annual GDP growth of 5.4%, (ii) annual inflation of 3.5%, (iii) an exchange rate of IDR13,400 per USD1, (iv) a 3-month Treasury bill annual rate of 5.3%, and (v) an Indonesian crude oil price of USD48 per barrel.

Republic of Korea

Yield Movements

Between 1 September and 31 October, local currency (LCY) government bond yields in the Republic of Korea rose for all tenors (**Figure 1**). The rise was most pronounced in the belly of the curve, with medium-term tenors of 2, 3, and 5 years gaining 43 basis points (bps) on average. At the short-end of the curve, the yield for the 1-year bond rose 36 bps and yields for 3-month and 6-month tenors rose 11 bps and 22 bps, respectively. The yields for tenors of 10 years and longer rose 23 bps on average. The spread between the 2-year and 10-year yields narrowed to 47 bps on 31 October from 62 bps on 1 September.

Figure 1: The Republic of Korea's Benchmark Yield Curve—Local Currency Government Bonds



Source: Based on data from Bloomberg LP.

Yields rose during the period in review on increased expectations of a rate hike by the Bank of Korea in response to tighter monetary stances in advanced economies and given current accommodative domestic conditions. This view was further supported following the 19 October Monetary Policy Board meeting when the central bank again raised its 2017 gross domestic product growth forecast. At this meeting, one board member also voted for a policy rate hike. These developments have fueled speculation of a rate hike sooner than expected, with the market anticipating a hike as early as the next monetary policy meeting in November. Yields rose further the week upon the release of the Bank of Korea's advance estimate of accelerated economic growth in the third quarter (Q3) of 2017.

The last week of September also saw an uptick in yields due to a sell-off by major foreign investment funds reducing their holdings of Korean domestic bonds. September saw the largest net foreign bond investment outflows for the year at KRW3.7 trillion.

In its Monetary Policy Board meeting on 19 October, the Bank of Korea decided to maintain the base rate at 1.25%. The central bank also raised its 2017 gross domestic product growth forecast to 3.0% from July's projection of 2.8%, while the 2018 growth forecast of 2.9% was maintained. The central bank stated that growth will continue to improve, supported by strong exports and facilities investments amid the global recovery. Consumption is recovering moderately. Full-year 2017 inflation is expected to average 2.0% before dipping to 1.8% in full-year 2018 due to weakening energy prices.

In line with a higher growth rate forecast, the Republic of Korea's gross domestic product growth accelerated to 3.6% year-on-year (y-o-y) in Q3 2017 from 2.9% y-o-y in the second quarter (Q2), based on advance estimates from the Bank of Korea. The faster growth was driven by a rebound in exports and larger annual increases in both private and government consumption. Exports grew 5.0% y-o-y in Q3 2017 after posting no growth in the previous quarter. Private consumption also rose 2.4% y-o-y in Q3 2017, slightly up from the 2.3% y-o-y growth posted in Q2 2017. Government consumption expanded 4.6% y-o-y, up from 3.1% y-o-y, mainly a result of higher spending from the supplementary budget. Meanwhile, gross fixed capital formation posted slightly lower growth in Q3 2017. By industry, the accelerated growth was driven by higher growth rates posted in manufacturing; electricity, gas, and water supply; and services. Growth in the construction sector eased in Q3 2017, while output in the agriculture sector contracted. On a quarter-on-quarter (q-o-q) basis, the Republic of Korea's economy grew 1.4% following a 0.6% expansion in Q2 2017.

Consumer price inflation in the Republic of Korea saw an uptick in Q3 2017 with the quarterly average rising to 2.3% y-o-y from 1.9% y-o-y in Q2 2017. Inflation rose to 2.6% y-o-y in August, the highest level in 5 years, from 2.2% y-o-y in July, before easing to 2.1% y-o-y in September. In October, inflation eased further to 1.8% y-o-y due to slower increases in food and utility prices.

Size and Composition

The Republic of Korea's LCY bond market posted growth of 1.4% q-o-q to reach KRW2,169 trillion (USD1,894 billion) at the end of September (**Table 1**). Government bonds increased 1.3% q-o-q to KRW904 trillion, primarily driven by growth in central government bonds. Corporate bonds rose 1.5% q-o-q to KRW1,265 trillion. On a y-o-y basis, the LCY bond market expanded 4.4%.

Government bonds. LCY government bonds outstanding posted modest growth of 1.3% q-o-q to reach KRW904 trillion at the end of September. The growth was led by a rise in the outstanding stock of central government bonds, composed largely of Korea Treasury Bonds (KTBs), which were up 2.2% q-o-q to KRW564 trillion. Meanwhile, the outstanding stocks of central bank bonds and other government bonds were almost unchanged from Q2 2017 at KRW174 trillion and KRW165 trillion, respectively.

Government bond issuance in Q3 2017 fell 1.3% q-o-q to KRW88 trillion due to lower issuance of central bank bonds and KTBs. The planned issuance of KTBs was lower in Q3 2017 versus Q2 2017 due to the more frequent auctions in Q2 2017 as part of the government's frontloading policy in the first half of 2017.

Corporate bonds. LCY corporate bonds outstanding also posted minimal growth in Q3 2017, rising 1.5% q-o-q to KRW1,265 trillion. **Table 2** provides a breakdown of the top 30 LCY corporate bond issuers in the Republic of Korea at the end of September, with aggregate LCY bonds outstanding of KRW808 trillion, representing 64% of the LCY corporate bond market. Financial companies such as banks and securities and investment firms continued to comprise a majority of the 30 largest corporate bond issuers. Korea Housing Finance Corporation remained the largest issuer with outstanding bonds valued at KRW116 trillion.

The marginal increase in the outstanding amount of corporate bonds was due to fewer new corporate issues in Q3 2017. Issuance fell 8.3% q-o-q to KRW103 trillion as some companies waited out the uncertainty in the market being generated by increased geopolitical risks and the subsequent uptick in yields. **Table 3** lists the notable corporate bond issuances in Q3 2017, which were mostly from banks. Doosan Infracore, a company that manufactures heavy machinery, had the single largest bond issuance (5-year bond) worth KRW500 billion.

Investor Profile

Insurance companies and pension funds remained the largest investor group in the LCY government bond market in the Republic of Korea at the end of June with

Table 1: Size and Composition of the Local Currency Bond Market in the Republic of Korea

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2016		Q2 2017		Q3 2017		Q3 2016		Q3 2017	
	KRW	USD	KRW	USD	KRW	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**2,076,602**	**1,886**	**2,138,183**	**1,869**	**2,168,965**	**1,894**	**0.6**	**3.9**	**1.4**	**4.4**
Government	855,763	777	892,171	780	903,697	789	0.3	5.2	1.3	5.6
Central Government Bonds	517,267	470	552,288	483	564,414	493	0.1	9.0	2.2	9.1
Central Bank Bonds	179,680	163	174,810	153	174,460	152	(1.0)	(3.6)	(0.2)	(2.9)
Others	158,816	144	165,073	144	164,823	144	2.4	4.0	(0.2)	3.8
Corporate	1,220,839	1,109	1,246,012	1,089	1,265,268	1,105	0.8	3.0	1.5	3.6

( ) = negative, KRW = Korean won, LCY = local currency, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Data for government bonds as of end-August 2017.
2. Calculated using data from national sources.
3. Bloomberg LP end-of-period LCY–USD rates are used.
4. Growth rates are calculated from local currency (LCY) base and do not include currency effects.
5. "Others" comprise Korea Development Bank Bonds, National Housing Bonds, and Seoul Metro Bonds.
6. Corporate bonds include equity-linked securities and derivatives-linked securities.
Sources: The Bank of Korea and *EDAILY BondWeb*.

Table 2: Top 30 Issuers of Local Currency Corporate Bonds in the Republic of Korea

	Issuers	Outstanding Amount		State-Owned	Listed on		Type of Industry
		LCY Bonds (KRW billion)	LCY Bonds (USD billion)		KOSPI	KOSDAQ	
1.	Korea Housing Finance Corporation	115,566	100.9	Yes	No	No	Housing Finance
2.	NH Investment & Securities	65,223	56.9	Yes	Yes	No	Securities
3.	Mirae Asset Daewoo Co.	59,693	52.1	No	Yes	No	Securities
4.	Korea Investment and Securities	52,790	46.1	No	No	No	Securities
5.	Korea Land & Housing Corporation	42,002	36.7	Yes	No	No	Real Estate
6.	Industrial Bank of Korea	37,364	32.6	Yes	Yes	No	Banking
7.	Hana Financial Investment	36,056	31.5	No	No	No	Securities
8.	KB Securities	31,090	27.1	No	No	No	Securities
9.	Mirae Asset Securities	29,067	25.4	No	Yes	No	Securities
10.	Samsung Securities	24,247	21.2	No	Yes	No	Securities
11.	Korea Deposit Insurance Corporation	23,510	20.5	Yes	No	No	Insurance
12.	Korea Electric Power Corporation	22,550	19.7	Yes	Yes	No	Electricity, Energy, and Power
13.	Shinhan Bank	21,872	19.1	No	No	No	Banking
14.	Korea Expressway	21,440	18.7	Yes	No	No	Transport Infrastructure
15.	Kookmin Bank	20,876	18.2	No	No	No	Banking
16.	Woori Bank	20,265	17.7	Yes	Yes	No	Banking
17.	Korea Rail Network Authority	19,360	16.9	Yes	No	No	Transport Infrastructure
18.	Daishin Securities	16,323	14.3	No	Yes	No	Securities
19.	Yhe Export-Import Bank of Korea	15,620	13.6	Yes	No	No	Banking
20.	NongHyup Bank	15,540	13.6	Yes	No	No	Banking
21.	KEB Hana Bank	15,260	13.3	No	No	No	Banking
22.	Korea Gas Corporation	13,279	11.6	Yes	Yes	No	Gas Utility
23.	Hyundai Capital Services	12,076	10.5	No	No	No	Consumer Finance
24.	Small & Medium Business Corporation	12,000	10.5	Yes	No	No	SME Development
25.	Shinhan Card	11,857	10.4	No	No	No	Credit Card
26.	Korea Student Aid Foundation	11,250	9.8	Yes	No	No	Student Loan
27.	Shinyoung Securities	11,049	9.6	No	Yes	No	Securities
28.	Standard Charted Bank Korea	10,740	9.4	No	No	No	Banking
29.	Korea Railroad Corporation	10,190	8.9	Yes	No	No	Transport Infrastructure
30.	Nonghyup	10,160	8.9	Yes	No	No	Financial
Total Top 30 LCY Corporate Issuers		**808,314**	**706**				
Total LCY Corporate Bonds		**1,265,268**	**1,105**				
Top 30 as % of Total LCY Corporate Bonds		**63.9%**	**63.9%**				

KOSDAQ = Korean Securities Dealers Automated Quotations, KOSPI = Korea Composite Stock Price Index, KRW = Korean won, LCY = local currency, SME = small and medium enterprise, USD = United States dollar.
Notes:
1. Data as of end-September 2017.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
3. Corporate bonds include equity-linked securities and derivatives-linked securities.
Sources: *AsianBondsOnline* calculations based on Bloomberg LP and *EDAILY BondWeb* data.

Table 3: Notable Local Currency Corporate Bond Issuance in the Third Quarter of 2017

Corporate Issuers	Coupon Rate (%)	Issued Amount (KRW billion)
Doosan Infracore		
5-year bond	2.00	500
Woori Bank		
3-year bond	2.00	370
Industrial Bank of Korea		
3-year bond	1.90	370
Kookmin Bank		
3-year bond	1.90	350
Shinhan Bank		
3-year bond	1.95	300
Hyundai Steel		
5-year bond	2.60	220
NongHyup Financial Group		
3-year bond	2.10	200

KRW = Korean won.
Source: Based on data from Bloomberg LP.

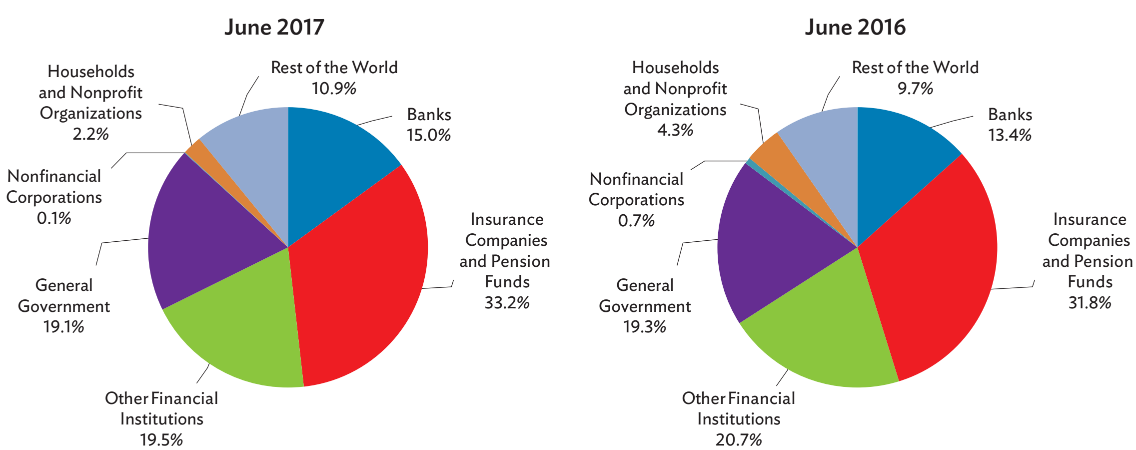
an aggregate share of 33.2%, up slightly from 31.8% in June 2016 (**Figure 2**). Other financial institutions and the general government held shares of 19.5% and 19.1%, respectively. The shares of banks and foreign investors inched up during the review period to 15.0% and 10.9%, respectively.

Insurance companies and pension funds also continued to comprise the largest share of the LCY corporate bond market at the end of June at 38.4% (**Figure 3**). The share of other financial institutions rose to 33.9% from 32.7% a year earlier; the share of the general government inched up to 13.0%. Meanwhile, the shares of banks, households and nonprofit institutions, and nonfinancial corporations fell slightly during the review period. The share of foreign investors in the Republic of Korea's LCY corporate bond market continued to be negligible.

Following consistent and strong net foreign investment inflows into the Republic of Korea's LCY bond market in the first half of 2017, Q3 2017 saw a massive sell-off (**Figure 4**). July saw the second highest monthly net foreign investment inflows of KRW2,755 billion before 2 consecutive months of net foreign outflows. In August, foreign investors sold a net KRW2,168 billion worth of LCY bonds. The outflows can be attributed to increased geopolitical tensions with the Democratic People's Republic of Korea. There was also a sizable amount of maturing Monetary Stabilization Bonds issued by the Bank of Korea, particularly those with tenors of 2 years or less.

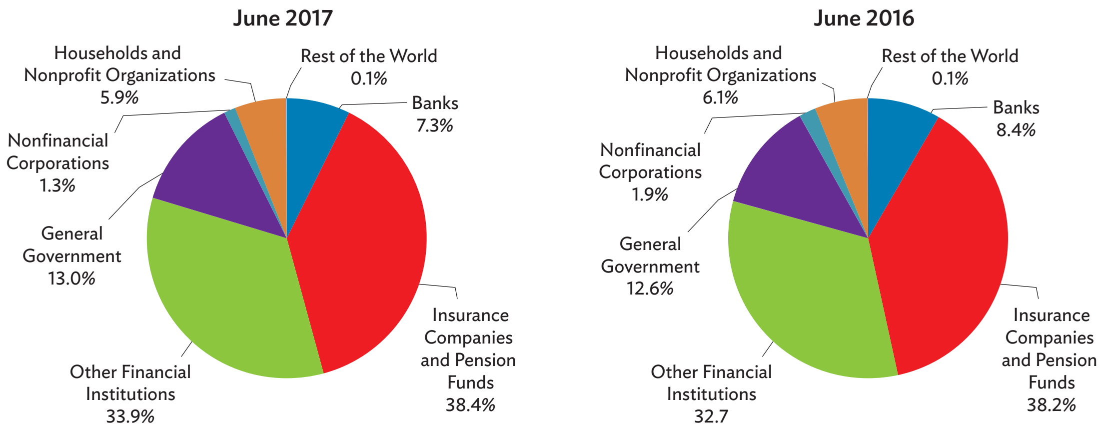
Foreign outflows accelerated in September as investors sold a net KRW3,732 billion of bonds. The bulk of the outflows occurred in the last week of September when major foreign funds withdrew from the local bond market, particularly bonds with medium-term tenors, and redeemed maturing commercial paper (**Figure 5**). Aside from heightened geopolitical risks, the outflows can be attributed to the decreasing real returns of investing in the Republic of Korea's bond market given an uptick in inflation as well as narrowing interest rate differentials with advanced economies.

Figure 2: Local Currency Government Bonds Investor Profile



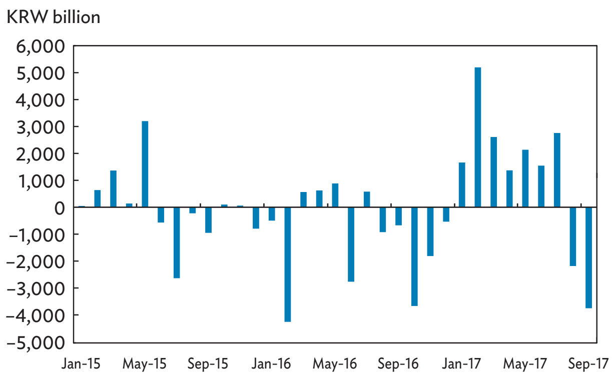
Sources: *AsianBondsOnline* and the Bank of Korea.

Figure 3: Local Currency Corporate Bonds Investor Profile



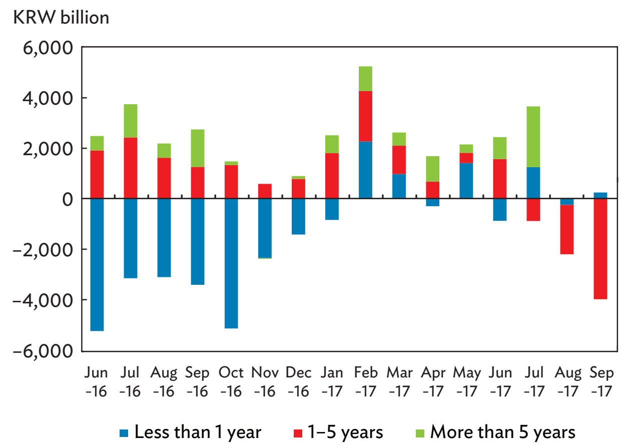
Sources: *AsianBondsOnline* and the Bank of Korea.

Figure 4: Net Foreign Investment in Local Currency Bonds in the Republic of Korea



KRW = Korean won.
Source: Financial Supervisory Service.

Figure 5: Net Foreign Investment in Local Currency Bonds in the Republic of Korea, by Tenor



KRW = Korean won.
Source: Financial Supervisory Service.

Policy, Institutional, and Regulatory Developments

Financial Services Commission Announces Comprehensive Measures for Household Debt Management

In October, the Financial Services Commission announced new measures to manage the Republic of Korea's growing household debt. These measures are intended to "reduce financial risks in the short-term; and to strengthen macroeconomic soundness and household income and repayment ability in the mid- to long-term."

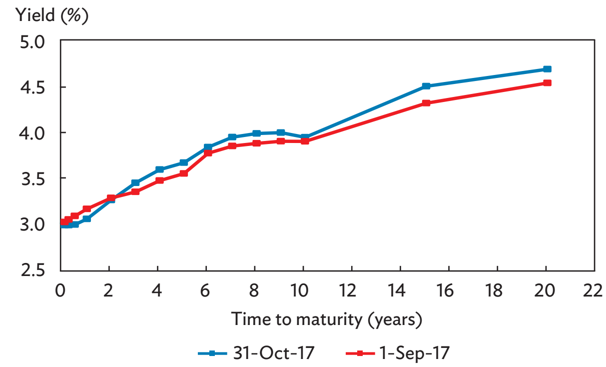
The measures include providing tailored assistance based on a borrower's capacity to repay debt. To manage risks affecting consumption and economic growth, the government will manage the household debt aiming to bring down and maintain its growth rate over the next 5 years at below 8.2%. The government will also adjust the calculation of debt-to-income ratios and introduce a debt service ratio to evaluate the credit risk profiles of borrowers more accurately. Lastly, the government will take measures to manage household debt from sectors that are more vulnerable to financial risk.

Malaysia

Yield Movements

Between 1 September and 31 October, yields for local currency (LCY) government bonds in Malaysia rose for most tenors (**Figure 1**). Yields for bonds with maturities of 2 years or less fell between 2 basis points (bps) and 11 bps. Yields for all maturities between 3 years and 20 years rose 11 bps on average. Among this group, 15-year maturities had the largest increase at 18 bps and 10-year maturities had the smallest increase at 4 bps. The yield spread between the 2-year and 10-year tenors widened during the review period from 61 bps to 68 bps.

Figure 1: Malaysia's Benchmark Yield Curve—Local Currency Government Bonds



Source: Based on data from Bloomberg LP.

The concentration of yield declines at the short-end of the curve reflects investors' preference for short-term tenors as the United States (US) Federal Reserve rate hike in December is highly likely even amid subdued inflation. The Federal Reserve recently assessed the US economy to be expanding at a solid pace and the labor market continues to strengthen. Investor cautiousness and the Federal Reserve's hawkish tone has possibly diminished buying interest for Malaysia's longer-tenor LCY government bonds, causing yields at the long-end of the curve to edge higher. However, yield increases were not substantial, suggesting onshore investor support for the local bond market. On the domestic front, the upward trend in domestic inflation may have contributed to rising yields even.

BNM decided to maintain its overnight policy rate at 3.00% during its monetary policy meeting on 9 November given the vibrant domestic economy supported by spillovers from the external sector, stable financial markets, and broadly upbeat prospects for global economic growth despite some risks coming from geopolitical concerns and monetary policy developments in advanced economies. However, amid strong local and global economic conditions and with inflation for full-year 2017 expected to be at the upper end of the forecast range, BNM stated that its Monetary Policy Committee may consider reviewing its accommodative monetary policy stance.

Consumer price inflation in Malaysia continued to trend upward, climbing to 4.3% y-o-y in September from 3.7% y-o-y in August and 1.5% y-o-y in September 2016. Price increases were observed in most major components of the Consumer Price Index. The transport group registered the most rapid y-o-y price advance, gaining 15.8% y-o-y in September. Inflation for the January–September period was 4.0% y-o-y, while core inflation remained unchanged at 2.4% y-o-y in September.

The Malaysian ringgit strengthened by 6.0% against the US dollar year-to-date through 31 October, spiking in September at MYR4.19 to USD1. The strength of the Malaysian ringgit is supported by a vibrant economy, the influx of foreign funds into the local bond market, the continued expansion of exports, and firmer oil prices.

Malaysia's gross domestic product expanded 5.8% in the second quarter of 2017, its fastest pace of growth since the first quarter of 2015. The economy's strength was underpinned by domestic demand and a pickup in global trade spilled over into the domestic economy. With faster growth rates in the first 2 quarter of 2017, BNM expects the economy to grow more rapidly than its initial forecast of 4.8% for full-year 2017.

Size and Composition

Malaysia's LCY bonds outstanding increased 1.4% q-o-q and 8.1% y-o-y to reach MYR1,263 billion (USD299 billion) at the end of September (**Table 1**). The buoyant Malaysian bond market was driven by both

Table 1: Size and Composition of the Local Currency Bond Market in Malaysia

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2016		Q2 2017		Q3 2017		Q3 2016		Q3 2017	
	MYR	USD	MYR	USD	MYR	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**1,168**	**282**	**1,246**	**290**	**1,263**	**299**	**0.4**	**8.6**	**1.4**	**8.1**
Government	632	153	670	156	671	159	(1.9)	4.9	0.1	6.2
Central Government Bonds	592	143	634	148	637	151	(1.3)	8.0	0.5	7.5
of which: *Sukuk*	236	57	263	61	266	63	1.9	14.6	1.1	12.7
Central Bank Bills	11	3	7	2	5	1	(29.5)	(56.7)	(27.2)	(50.2)
of which: *Sukuk*	0	0	0	0	0	0	–	(100.0)	–	–
Sukuk Perumahan Kerajaan	28	7	28	7	28	7	0.0	0.0	0.0	0.0
Corporate	537	130	576	134	593	140	3.3	13.3	2.9	10.4
of which: *Sukuk*	393	95	425	99	439	104	4.9	15.5	3.4	11.7

( ) = negative, – = not applicable, MYR = Malaysian ringgit, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. Growth rates are calculated from local currency base and do not include currency effects.
4. Sukuk Perumahan Kerajaan are Islamic bonds issued by the Government of Malaysia to refinance funding for housing loans to government employees and to extend new housing loans.
Sources: Bank Negara Malaysia Fully Automated System for Issuing/Tendering (FAST) and Bloomberg LP.

the government and corporate segments, with much of the growth coming from corporates. Government bonds outstanding summed to MYR671 billion and comprised 53.1% of the total, while corporate bonds outstanding summed to MYR593 billion and comprised 46.9%.

Total *sukuk* outstanding amounted to MYR733.7 billion at the end of September, an increase of 2.4% q-o-q and 11.5% y-o-y. *Sukuk* as a share of total LCY outstanding bonds increased to 58.1% at the end of September from 57.5% at the end of June. The larger proportion of *sukuk* than conventional bonds in Malaysia' LCY bond market is due to a broad investor base; most Malaysian fund managers are encouraged to invest in *sukuk*. The strong demand for *sukuk* results in high levels of liquidity, which translates to lower borrowing costs and encourages issuers to borrow via *sukuk* issuance. There is also a government-led push to develop Malaysia as a global center of Islamic finance, especially with the growing interest in using *sukuk* for financing and rising investor demand.

Government bonds. Total LCY government outstanding bonds in Malaysia amounted to MYR671 at the end of September on increases of 0.1% q-o-q and 6.2% y-o-y. Among the government bond segment's components, only central government bonds increased during the third quarter (Q3) of 2017. Central bank bills continued to fall amid maturing debt and sparse issuance, while the amounts of Sukuk Perumahan Kerajaan outstanding was unchanged at MYR28 billion.

The issuance of government securities increased 9.8% q-o-q to MYR33.5 billion in Q3 2017, reversing the 21.5% q-o-q drop in Q2 2017. The expansion during the quarter was supported mainly by increases in the issuances of Malaysian Government Securities and Treasury bills while the issuances of Government Investment Issues and central bank bills fell.

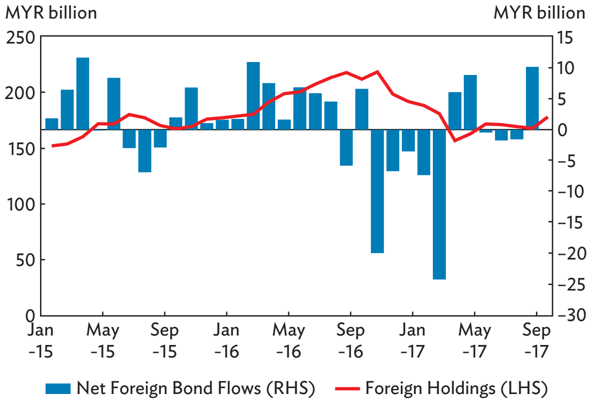
Foreign holdings of LCY government bonds totaled MYR177.9 billion at the end of September, climbing to its highest level since February (**Figure 2**).[20] The amount was 4.0% higher than at the end of June but 16.0% lower than at the end of September 2016.

In June–August, net outflows resulted from the maturing of foreign investments and profit taking, and the lingering effects of BNM's barring of Malaysian ringgit offshore trading which negatively affected foreign investor sentiment and consequently the inflow of funds.

In September, net inflows of MYR10.1 billion were recorded, the highest level since March 2016, after

[20] Excluding Bank Negara Malaysia bills.

Figure 2: Foreign Holdings and Capital Flows of Local Currency Government Bonds in Malaysia



LHS = left-hand side, MYR = Malaysian ringgit, RHS = right-hand side.
Notes:
1. Figures exclude foreign holdings of Bank Negara Malaysia bills.
2. Month-on-month changes in foreign holdings of local currency government bonds were used as a proxy for bond flows.
Source: Bank Negara Malaysia Monthly Statistical Bulletin.

3 consecutive months of net outflows. The reversal appeared to reflect renewed confidence among foreign investors seeking long-term returns in the Malaysian bond market on the back of strong economic fundamentals and an improving growth outlook. Positive flows were seen in all components of government securities, with Malaysian Government Securities having the biggest increase.

Year-to-date through September, foreign holdings of LCY government bonds registered net outflows of MYR13.9 billion, while foreign holdings as a percentage of total outstanding LCY government bonds fell to 27.9% at the end of September from 35.8% a year earlier. Market participants from our annual bond market liquidity survey indicated that these developments should not concern local regulators and that the Malaysian bond market investor base remains diverse. Most foreign investors who remained in the local market are "sticky" investors—such as central banks, governments, and pension funds—who are less swayed by shifting sentiments, thus reducing the risk of volatile outflows. In addition, measures from BNM to deepen the financial market have helped slow the pace and moderate the magnitude of foreign fund outflows. Survey participants also noted that the foreign holdings share is normalizing at around 25%–27% and it is unlikely to return to its pre-November 2016 levels. Survey participants further noted that with the lower level of foreign holdings, Malaysia will be less susceptible to volatility arising from speculative capital flight.

Corporate bonds. Outstanding LCY bonds in the corporate sector at the end of September showed faster growth rates than government bonds on both a q-o-q and y-o-y basis. Corporate bonds rose 2.9% q-o-q and 10.4% y-o-y, bringing the total outstanding amount to MYR593 billion. The share of *sukuk* in the Malaysia corporate bond market was 74.1 % at the end of Q3 2017, up from 73.7% in the preceding quarter. By instrument type, most corporate outstanding bonds are medium-term notes.

The bonds outstanding of the top 30 corporate issuers totaled MYR336.5 billion at the end of September, comprising 56.8% of the LCY corporate bond market (**Table 2**). By industry, financial firms were the biggest debt issuers with MYR158.4 billion, while telecommunications firms were the smallest with MYR4.5 billion. Danainfra Nasional remained the largest issuer with MYR36.9 billion of outstanding bonds at the end of September.

Corporate bond issuance continued to rise in Q3 2017, with issuances totaling MYR43.2 billion. The bulk of corporate bond issuance during the quarter came in September when the monthly total of MYR22.5 billion almost doubled the amount in August and more than tripled issuances in July. The growing amount of corporate bonds outstanding can be traced to the increase in government-guaranteed corporate bonds issued to finance infrastructure projects of the government as well as issuers seeking to lock in favorable rates ahead of further monetary tightening in advanced economies. *Sukuk* continue to comprise a higher proportion of corporate issuances than conventional bonds, accounting for 63.6% of the total in Q3 2017. *Sukuk* are more liquid than conventional bonds in Malaysia's corporate market, which induces issuers to borrow via *sukuk*. BNM is also encouraging corporates to promote deeper liquidity and offerings in the *sukuk* market to attract a more diverse group of foreign investors to Malaysia.

Table 3 shows the notable bond issuers in Q3 2017. In September, Prasarana Malaysia issued six tranches of government-guaranteed *murabahah sukuk* (Islamic bonds backed by a commodity mark-up sale transaction) totaling MYR4 billion, with maturities between 5 years and 30 years. Lembaga Pembiayaan Perumahan Sektor Awam again tapped the debt market during the quarter, raising MYR3.5 billion via multitranche sales; in Q2 2017, the property firm raised MYR3.25 billion.

Table 2: Top 30 Issuers of Local Currency Corporate Bonds in Malaysia

	Issuers	Outstanding Amount		State-Owned	Listed Company	Type of Industry
		LCY Bonds (MYR billion)	LCY Bonds (USD billion)			
1.	Danainfra Nasional	36.9	8.7	Yes	No	Finance
2.	Project Lebuhraya Usahasama	30.4	7.2	No	No	Transport, Storage, and Communications
3.	Cagamas	28.6	6.8	Yes	No	Finance
4.	Prasarana	22.7	5.4	Yes	No	Transport, Storage, and Communications
5.	Perbadanan Tabung Pendidikan Tinggi Nasional	18.5	4.4	Yes	No	Finance
6.	Khazanah	18.0	4.3	Yes	No	Finance
7.	Maybank	16.4	3.9	No	Yes	Banking
8.	Pengurusan Air	14.4	3.4	Yes	No	Energy, Gas, and Water
9.	Lembaga Pembiayaan Perumahan Sektor Awam	12.8	3.0	Yes	No	Property and Real Estate
10.	CIMB Bank	12.5	2.9	Yes	No	Finance
11.	Sarawak Energy	9.5	2.3	Yes	No	Energy, Gas, and Water
12.	Jimah East Power	9.0	2.1	Yes	No	Energy, Gas, and Water
13.	GOVCO Holdings	8.8	2.1	Yes	No	Finance
14.	Bank Pembangunan Malaysia	7.4	1.7	Yes	No	Banking
15.	YTL Power International	7.3	1.7	No	Yes	Energy, Gas, and Water
16.	Rantau Abang Capital	7.0	1.7	Yes	No	Finance
17.	Sarawak Hidro	6.5	1.5	Yes	No	Energy, Gas, and Water
18.	Danga Capital	6.5	1.5	Yes	No	Finance
19.	Public Bank	6.4	1.5	No	No	Banking
20.	ValueCap	6.0	1.4	Yes	No	Finance
21.	CIMB Group Holdings	5.7	1.4	Yes	No	Finance
22.	Aman Sukuk	5.5	1.3	Yes	No	Construction
23.	Putrajaya Holdings	5.4	1.3	Yes	No	Property and Real Estate
24.	Turus Pesawat	5.3	1.3	Yes	No	Transport, Storage, and Communications
25.	RHB Bank	5.2	1.2	No	No	Banking
26.	1Malaysia Development	5.0	1.2	Yes	No	Finance
27.	Celcom Networks	5.0	1.2	No	No	Transport, Storage, and Communications
28.	GENM Capital	5.0	1.2	No	No	Finance
29.	Jambatan Kedua	4.6	1.1	Yes	No	Transport, Storage, and Communications
30.	Telekom Malaysia	4.5	1.1	No	Yes	Telecommunications
Total Top 30 LCY Corporate Issuers		**336.5**	**79.7**			
Total LCY Corporate Bonds		**592.7**	**140.4**			
Top 30 as % of Total LCY Corporate Bonds		**56.8%**	**56.8%**			

LCY = local currency, MYR = Malaysian ringgit, USD = United States dollar.
Notes:
1. Data as of end-September 2017.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bank Negara Malaysia Fully Automated System for Issuing/Tendering (FAST) data.

Table 3: Notable Local Currency Corporate Bond Issuance in the Third Quarter of 2017

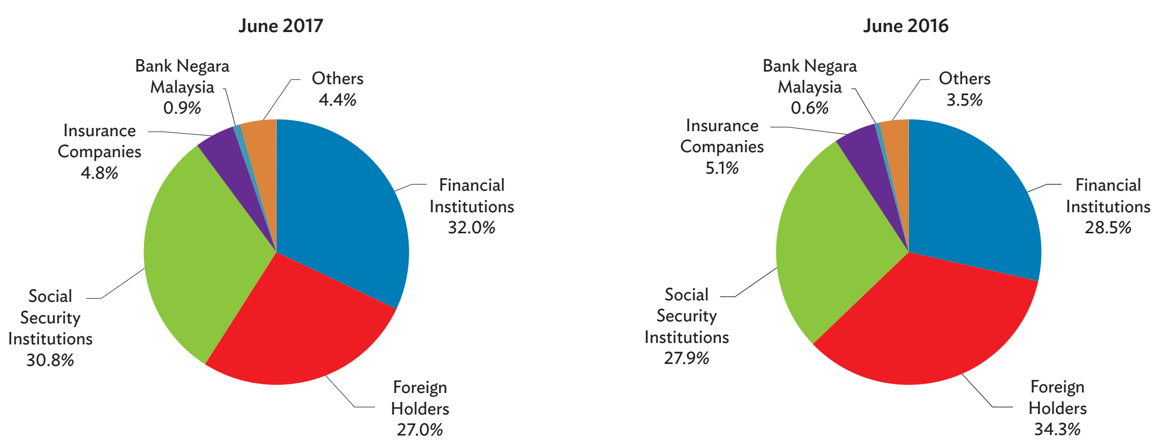
Corporate Issuers	Coupon Rate (%)	Issued Amount (MYR million)
Prasarana Malaysia		
5-year Islamic MTN	4.08	500
7-year Islamic MTN	4.28	800
8-year Islamic MTN	4.34	850
20-year Islamic MTN	5.01	650
25-year Islamic MTN	5.11	600
30-year Islamic MTN	5.23	600
Lembaga Pembiayaan Perumahan Sektor Awam		
3-year Islamic MTN	3.95	300
5-year Islamic MTN	4.08	500
7-year Islamic MTN	4.28	700
20-year Islamic MTN	5.05	1,000
30-year Islamic MTN	5.26	1,000
Cagamas		
1-year Islamic MTN	3.78	230
1-year Islamic MTN	3.78	180
5-year Islamic MTN	4.09	1,000

MYR = Malaysian ringgit.
Source: Bank Negara Malaysia Bond Info Hub.

Investor Profile

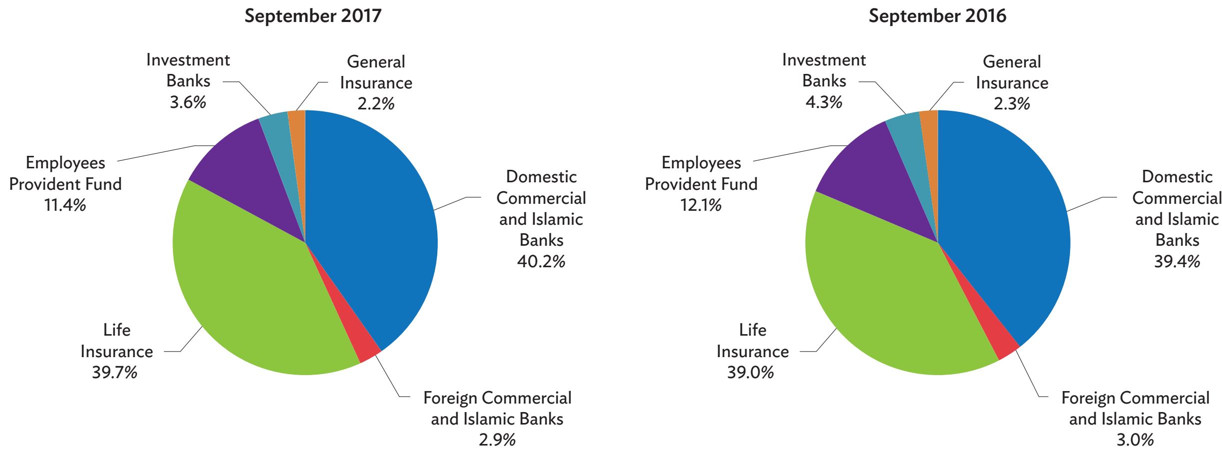
Foreign investors' share of LCY government bonds declined considerably to 27.0% at the end of June from 34.3% a year earlier (**Figure 3**). The drop was due to a sell-off by foreign investors after BNM strictly reinforced the prohibition on offshore trading of the Malaysian ringgit, which left the foreign investors with limited avenues to hedge risks, thus discouraging them to hold local bonds. This led to financial institutions having the highest share of government bond holdings among all investor groups in the Malaysian LCY bond market, accounting for a 32.0% share at the end of June, up from 28.5% a year earlier. Social security institutions were the second largest holders of government bonds at 30.8%. (Financial institutions such as banks and social security institutions such as pension funds are also known to be sticky investors.) Investor groups with smaller holdings as a share of the total LCY government bond market include insurance companies (4.8%), other investors (4.4%), and BNM (0.9%).

Figure 3: Local Currency Government Bonds Investor Profile



Note: "Others" include statutory bodies, nominees and trustee companies, and cooperatives and unclassified items.
Source: Bank Negara Malaysia.

Figure 4: Local Currency Corporate Bonds Investor Profile



Note: The Employees Provident Fund's bond holdings data are as of end-December 2016.
Sources: Bank Negara Malaysia and the Employees Provident Fund.

The investor profile of the LCY corporate bond market was little changed in September from a year earlier (**Figure 4**). Domestic commercial and Islamic banks and life insurance companies remained the dominant corporate bond holders. Domestic commercial and Islamic banks had the largest share at the end of September at 40.2% while life insurance companies were second with a 39.7% share. The two investor groups saw slight increases in their shares from 39.4% and 39.0% at the end of September 2016, respectively. On the other hand, the rest of the investor groups saw slightly decreases in their shares of corporate bond holdings.

Policy, Institutional, and Regulatory Developments

Bank Negara Malaysia Sets Out Additional Hedging Flexibility for Foreign Exchange

On 11 September, BNM set out additional hedging flexibility to further facilitate foreign exchange risk management as part of its measures to promote development of the Malaysian financial market. In its Supplementary Notice No. 3 on Foreign Exchange Administration Rules, BNM allows registered nonbank, nonresident market participants to forward hedge crude palm oil futures and options on crude palm oil futures for the purpose of managing ringgit exposure arising from such contracts.

Malaysian Government Sets Budget for 2018

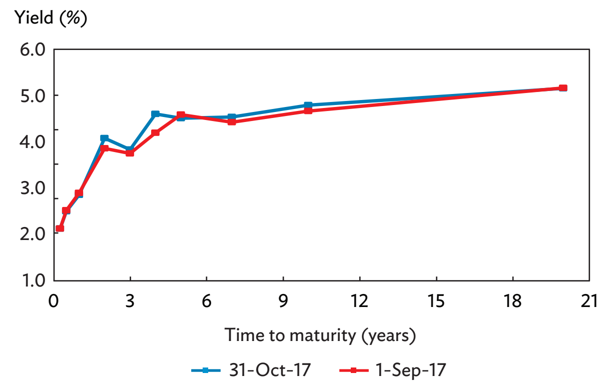
Prime Minister Najib Razak announced Malaysia's 2018 budget on 27 October, which amounted to MYR280.3 billion, or 7.5% higher than in 2017. A total of MYR234.3 billion will be allotted for operating expenditure and MYR46 billion for development. While the spending plan has increased, revenue collection is also projected to expand 6.4% to MYR239.9 billion in 2018, allowing the government to maintain its fiscal consolidation target. Also announced was a cut of 2 percentage points to the personal income tax for those earning between MYR20,000 and MYR70,000 annually.

Philippines

Yield Movements

Between 1 September and 31 October, yields movements for Philippine local currency (LCY) government bonds were mixed (**Figure 1**). Yields at the short-end of the curve (maturities of 1 year or less) fell by an average of 2.1 basis points (bps). Yields for all maturities between 2 years and 20 years rose except for the 5-year and 20-year tenors, which fell 7.8 bps and 0.8 bps, respectively. Those tenors with increases in yields rose by 19.1 bps on average, with the largest increase in 4-year tenor of 40.8 bps. The yield spread between the 2-year and 10-year tenors narrowed from 81 bps to 71 bps during the review period.

Figure 1: Philippines' Benchmark Yield Curve—Local Currency Government Bonds



Source: Based on data from Bloomberg LP.

The decline in yields at the short-end of the curve and the rise in yields of most long-tenor bonds suggests that market participants are being cautious ahead of widely expected interest rate hike from the United States (US) Federal Reserve in December. In its Federal Open Market Committee meeting on 31 October–1 November, the Federal Reserve stated that the US economy is expanding at a solid rate while the labor market continues to improve, which will likely pave the way for a rate hike before the end of the year even if inflation remains low. Therefore, investors buying long-term government securities are bidding for higher yields and are being more cautious in taking positions along that segment of the yield curve. The increase in yields observed during the review period is also reflective of the local market looking to movements in US Treasury yields as a guide. Nonetheless, ample liquidity in the market could absorb any sell-off that might curb further yield advances.

The Bangko Sentral ng Pilipinas (BSP) kept the overnight reverse repurchase interest rate unchanged at 3.00% during its monetary policy meeting on 09 November. The central bank assessed that inflation remained manageable and that expectations remained anchored within the government's target range of 2.0%–4.0%. Domestic economic activities remained firm, while an improvement in the economy's absorptive capacity seems to have mitigated inflationary pressures from credit expansion. The global economy continued to improve but lingering risks emanating from the advanced economies' policy directions and geopolitical concerns may negatively growth.

Consumer price inflation in the Philippines accelerated to 3.5% year-on-year (y-o-y) in October from 3.4% y-o-y in September, driven by faster price adjustments for food items and fuel. The October inflation rate is the highest since posting 3.7% in November 2014. Average inflation for January–September was 3.1%. While this is within the government's full-year target of 2.0%–4.0%, the National Economic Development Authority cited several upside risks to inflation in the near term such as higher domestic fuel prices and a weaker peso.

The Philippine peso lost 3.8% against the US dollar year-to-date through 31 October. According to the BSP, the weak peso can be attributed to the effects of higher corporate demand for imports and trade financing. Moreover, continued expectations of another rate hike from the Federal Reserve and expectations of a new chairperson when Janet Yellen's term ends in February have also contributed to the peso's weakness. Despite this, the BSP said the depreciation of the local currency remains manageable.

The gross domestic product of the Philippines expanded 6.5% y-o-y in the second quarter (Q2) of 2017, up from 6.4% y-o-y in the previous quarter, helped by the acceleration of government spending. The government's growth target range for full-year 2017 is 6.5%–7.5%. The BSP has said that the target is attainable given the Philippines' strong macroeconomic fundamentals and upbeat domestic economic activity backed by the implementation of key infrastructure projects and a rebound in exports.

Size and Composition

The Philippines' LCY bonds outstanding expanded in the third quarter (Q3) of 2017 at rates of 0.8% q-o-q and 8.5% y-o-y, which were down from 4.6% q-o-q and 10.2% y-o-y in Q2 2017 (**Table 1**). The LCY bond market reached a size of PHP5,210 billion (USD102 billion) at the end of September, lifted by both the government and corporate segments, which comprised 80.8% and 19.2% of the total, respectively.

Government bonds. Total LCY government bonds outstanding amounted to PHP4,212 billion at the end of September, barely unchanged on a q-o-q basis but up 6.5% y-o-y. Treasury bonds amounted to PHP3,822 billion, reflecting an increase on a y-o-y basis but a slight decrease on a q-o-q basis as bonds that matured in Q3 2017 exceeded issuances. On the other hand, Treasury bills outstanding grew 7.0% q-o-q and 16.0% y-o-y on the back of increased issuance during the quarter.

The government issued a total of PHP270.2 billion in Q3 2017, lower than in Q2 2017, which was largely lifted by the issuance of Retail Treasury Bonds.[21] The issuance of Treasury bonds amounted to PHP75 billion in Q3 2017, falling short of the PHP90 billion target set by the Bureau of the Treasury (BTr) as it rejected bids in one of its auctions during the quarter. Treasury bill issuance amounted to PHP95.2 billion in Q3 2017, also falling short from the PHP105 billion target as some auctions were partially awarded by the BTr. Even so, Treasury bills issued in Q3 2017 were higher compared with Q2 2017 as a result of more auctions during the quarter.

The Government of the Philippines is targeting its initial issuance of Chinese renminbi-denominated bonds, or panda bonds, in November. The bond sale is in its final regulatory preparation and the government has tapped the assistance of the Bank of China for government approval in the People's Republic of China. The government plans to issue USD200 million in 3-year and 5-year tenors. The BTr is timing its issuance based on the pricing environment, demand, and geopolitical developments that might affect investor sentiments.

Market players expect that the government's ambitious infrastructure plan will increase the supply of local government bonds in the market given the need to borrow more to fund these projects. However, the increase in issuance also partly depends on the outcome of the government's tax reform package. If the revenue-generating provisions are passed close to the original version of the Department of Finance, the government may not need to borrow more as its revenue will already be augmented, thus limiting the impact of infrastructure

Table 1: Size and Composition of the Local Currency Bond Market in the Philippines

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2016		Q2 2017		Q3 2017		Q3 2016		Q3 2017	
	PHP	USD	PHP	USD	PHP	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**4,800**	**99**	**5,168**	**102**	**5,210**	**102**	**2.4**	**1.6**	**0.8**	**8.5**
Government	3,955	82	4,211	83	4,212	83	1.9	0.4	0.04	6.5
Treasury Bills	293	6	318	6	340	7	1.8	3.7	7.0	16.0
Treasury Bonds	3,587	74	3,842	76	3,822	75	2.0	0.3	(0.5)	6.6
Others	76	2	51	1	50	1	0.0	(5.6)	(0.6)	(33.5)
Corporate	845	17	957	19	998	20	4.6	7.7	4.2	18.1

( ) = negative, LCY = local currency, PHP = Philippine peso, q-o-q = quarter-on-quarter, Q1 = first quarter, Q2 = second quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg end-of-period LCY–USD rates are used.
3. Growth rates are calculated from an LCY base and do not include currency effects.
4. "Others" comprise bonds issued by government agencies, entities, and corporations for which repayment is guaranteed by the Government of the Philippines. This includes bonds issued by Power Sector Assets and Liabilities Management (PSALM) and the National Food Authority, among others.
5. Peso Global Bonds (PHP-denominated bonds payable in US dollars) are not included.
Sources: Bloomberg LP and Bureau of the Treasury.

[21] Government bond issuance includes issuance of special bills.

development on the local bond market. Otherwise, the government may need to issue additional debt securities to ensure sufficient funds for its spending

Corporate bonds. The LCY corporate bond market remained upbeat in Q3 2017, with bonds outstanding increasing 4.2% q-o-q and 18.1% y-o-y to reach PHP998 billion at the end of September. Growth in the corporate segment was faster than in the government segment on both a q-o-q and y-o-y basis.

The property sector continued to comprise the largest share of total outstanding corporate bonds at the end of September at 28.4% (**Figure 2**). This was followed by banks (27.7%) and holding firms (21.1%). Media and communications, transport, utilities, and other sectors saw declines in shares at the end of September from a year earlier.

The combined outstanding bonds of the top 30 corporate issuers amounted to PHP853.8 billion or the equivalent of 85.6% of total LCY corporate bonds outstanding. The top 30 issuers comprise 26 listed firms and 4 unlisted firms, and are led by firms in the property sector (**Table 2**). Property giant Ayala Land occupied the top spot with bonds outstanding reaching PHP91.6 billion at the end of September, up from PHP87.3 billion at the end of June.

In Q3 2017, issuers from the corporate sector raised a total of PHP49.8 billion from the bond market, which was less than the amount issued in Q2 2017. BDO Unibank had the largest issuance during the quarter with a PHP11.8 billion 6-year bond carrying a coupon rate of 3.63%. Other notable issuances in Q3 2017 are listed in **Table 3**.

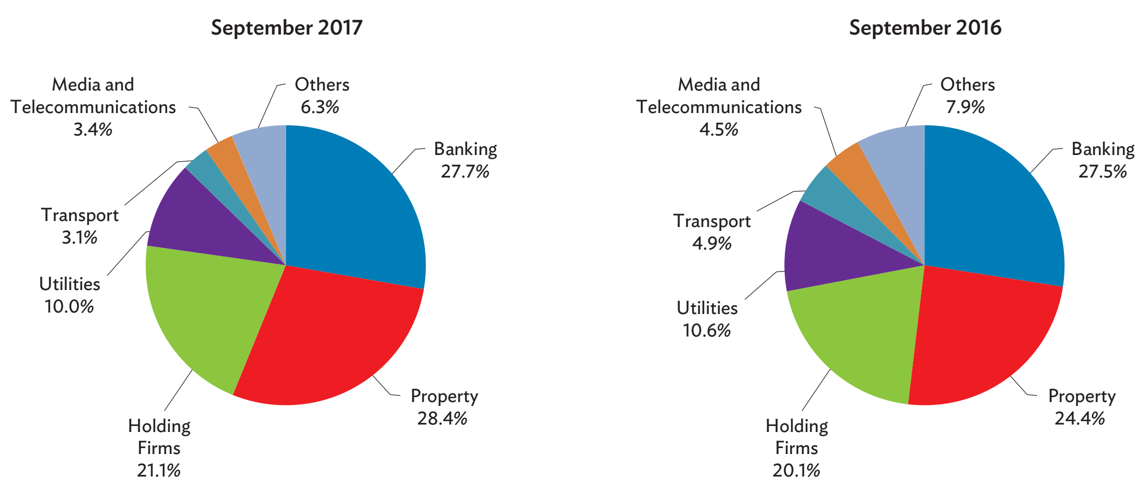
Investor Profile

Banks and investment houses remained the largest holder group of LCY government bonds among all investor groups, with holdings comprising 39.7% of the total market at the end of September, up from 37.0% a year earlier (**Figure 3**). Contractual savings and tax-exempt institutions were the second largest holders of government bonds with a 31.6% share of the total at the end of September, marginally up from 31.4% a year earlier. On the other hand, the holding shares of BTr-managed funds; brokers, custodians, and depositories; and government-owned or -controlled corporations and local government units each saw declines at the end of September from a year earlier.

Ratings Update

On 6 September, RAM Ratings revised its outlook on the Philippines' global and ASEAN-scale sovereign ratings from stable to positive on the back of stronger-than-expected economic growth in 2016 and the sustained inflow of foreign direct investment. The Philippines holds a global rating of $_{g}BBB_{3}$(pi) and an ASEAN-scale rating

Figure 2: Local Currency Corporate Bonds Outstanding by Sector



Source: Based on data from Bloomberg LP.

Table 2: Top 30 Issuers of Local Currency Corporate Bonds in the Philippines

Issuers		Outstanding Amount		State-Owned	Listed Company	Type of Industry
		LCY Bonds (PHP billion)	LCY Bonds (USD billion)			
1.	Ayala Land	91.6	1.8	No	Yes	Property
2.	SM Prime	73.8	1.5	No	Yes	Property
3.	Metrobank	59.2	1.2	No	Yes	Banking
4.	BDO Unibank	49.3	1.0	No	Yes	Banking
5.	SM Investments	47.3	0.9	No	Yes	Holding Firms
6.	Ayala Corporation	40.0	0.8	No	Yes	Holding Firms
7.	Philippine National Bank	35.1	0.7	No	Yes	Banking
8.	San Miguel Brewery	34.8	0.7	No	No	Brewery
9.	San Miguel	30.0	0.6	No	Yes	Holding Firms
10.	JG Summit Holdings	30.0	0.6	No	Yes	Holding Firms
11.	Filinvest Land	29.0	0.6	No	Yes	Property
12.	East West Bank	26.8	0.5	No	Yes	Banking
13.	Aboitiz Equity Ventures	24.0	0.5	No	Yes	Holding Firms
14.	Meralco	23.5	0.5	No	Yes	Electricity, Energy, & Power
15.	Security Bank	23.0	0.5	No	Yes	Banking
16.	GT Capital	22.0	0.4	No	Yes	Holding Firms
17.	Rizal Commercial Banking Corporation	20.8	0.4	No	Yes	Banking
18.	Vista Land and Lifescapes	20.0	0.4	No	Yes	Property
19.	Petron	18.6	0.4	No	Yes	Electricity, Energy, & Power
20.	China Bank	15.9	0.3	No	Yes	Banking
21.	Maynilad Water Services	15.7	0.3	No	No	Water
22.	Double Dragon Properties	15.0	0.3	No	Yes	Property
23.	MCE Leisure (Philippines)	15.0	0.3	No	No	Casinos & Gaming
24.	Philippine Long Distance Telephone Company	15.0	0.3	No	Yes	Telecommunications
25.	SMC Global Power Holdings	15.0	0.3	No	No	Electricity, Energy, & Power
26.	Union Bank of the Philippines	14.0	0.3	No	Yes	Banking
27.	Aboitiz Power	13.0	0.3	No	Yes	Electricity, Energy, & Power
28.	Globe Telecom	12.5	0.2	No	Yes	Telecommunications
29.	Megaworld	12.0	0.2	No	Yes	Property
30	Robinsons Land	12.0	0.2	No	Yes	Property
Total Top 30 LCY Corporate Issuers		**853.8**	**16.8**			
Total LCY Corporate Bonds		**997.9**	**19.6**			
Top 30 as % of Total LCY Corporate Bonds		**85.6%**	**85.6%**			

LCY = local currency, PHP = Philippine peso, USD = United States dollar.
Notes:
1. Data as of end-September 2017.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

of $_{sea}$A1(pi) from RAM. Continued economic growth and the successful implementation of growth-supporting measures such as a tax reform package and infrastructure projects, as well as the streamlining of business processes, could lead to a ratings upgrade. On the other hand, the deterioration of domestic finances and external position, as well as the failure of growth-enhancing initiatives, could trigger a ratings downgrade.

Table 3: Notable Local Currency Corporate Bond Issuance in the Third Quarter of 2017

Corporate Issuers	Coupon Rate (%)	Issued Amount (PHP billion)
BDO Unibank		
6-year bond	3.63	11.80
Double Dragon Properties		
7-year bond	6.10	9.70
Cyberzone Properties		
6-year bond	5.05	6.00

PHP = Philippine peso.
Source: Bloomberg LP.

Policy, Institutional, and Regulatory Developments

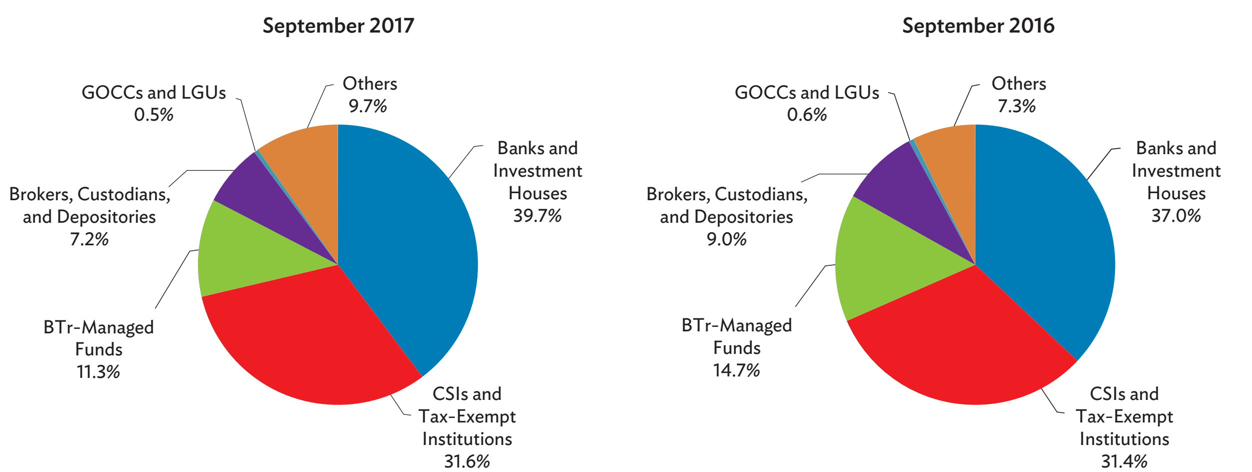
Bangko Sentral ng Pilipinas Streamlines Regulations on Bank and Quasi-Bank Bond Issuance

On 6 October, BSP amended its regulations on the issuance of bonds and commercial paper by banks and quasi-banks in order to streamline requirements and provide greater flexibility in tapping the capital market as an alternative funding source. According to the central bank, the amendments include removal of the minimum bond features, such as the requirement on eligible collateral, which can constrain banks and quasi-banks from issuing debt securities. The revised regulations reiterate compliance with the securities law and its implementing rules and regulations.

Bangko Sentral ng Pilipinas, Bureau of the Treasury, and the Securities and Exchange Commission Set to Launch a Repurchase Market for Banks in November

In October, BSP announced the rollout of the repurchase market for banks in November. Together with the BTr and the Securities and Exchange Commission, this initiative forms part of the capital market road map presented by government agencies in August with the goal of deepening the domestic debt market. These agencies are targeting to implement a series of financial reforms within 18 months. According to the BSP, the initial phase would focus on improving benchmark markets as this is critical for pricing risk assets and other capital market instruments. In addition, the BTr has also been assessing the performance of Government Securities Eligible Dealers in the primary and secondary markets, which will be the basis for recognizing market-makers. The BTr will announce the preliminary market-makers and launch the enhanced Government Securities Eligible Dealers program early next year.

Figure 3: Local Currency Government Bonds Investor Profile



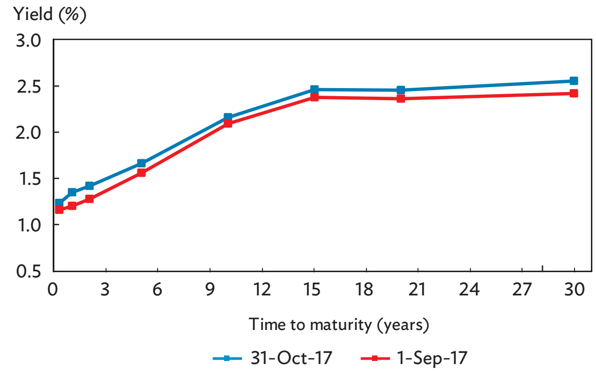
BTr = Bureau of the Treasury, CSIs = contractual savings institutions, GOCCs = government-owned or -controlled corporations, LGUs = local government units.
Source: Bureau of the Treasury.

Singapore

Yield Movements

Between 1 September and 31 October, yields for Singapore's local currency (LCY) government bonds rose for all tenors (**Figure 1**). Yields of Singapore Government Securities (SGS) with 1-year, 2-year, and 30-year maturities gained the most, rising 15, 14, and 13 basis points (bps), respectively. In the belly of the curve between the 5-year and 20-year tenors, bond yields rose an average of 9 bps. At the short-end, bonds with 3-month maturities rose 7 bps. The 2-year and 10-year yield spread narrowed to 74 bps on 31 October from 81 bps on 1 September.

Figure 1: Singapore's Benchmark Yield Curve—Local Currency Government Bonds



Source: Based on data from Bloomberg LP.

The rise in Singapore bond yields largely tracked the rise in the United States (US) Treasury yields. Factors contributing to the rise include the US Federal Reserve's positive outlook on the US economy, as reflected in its policy meeting on 31 October–1 November, as well as from its balance sheet normalization, which began in October. Despite leaving the policy rate on hold, the Federal Reserve expects inflation and employment to progress, among other economic conditions, making it conducive to gradually hike the federal funds rate.

Given the improving global outlook for 2017 and 2018, a robust domestic economy, and stable core inflation, the Monetary Authority of Singapore (MAS) decided on 13 October to maintain the rate of appreciation of the Singapore dollar nominal effective exchange rate policy band at zero. It also kept steady the policy band width and the level at which it is centered. However, unlike in the previous monetary policy guidance, MAS' latest policy statement gave no indication that the neutral policy stance would be maintained for an extended period, signaling a possible tightening as domestic economic conditions continue to improve.

Based on advance estimates, Singapore's economy grew 4.6% year-on-year (y-o-y) in the third quarter (Q3) of 2017 from 2.9% y-o-y in the second quarter (Q2) of 2017. Both the manufacturing and service industries supported the expansion with growth of 8.2% y-o-y and 2.6% y-o-y, respectively. On the other hand, the construction sector contracted 6.3% y-o-y in Q3 2017. Gross domestic product is forecast to grow 2%–3% in full-year 2017, an improvement from MAS' forecast of 1%–3% in May. Based on the MAS' survey in September, Singapore's economic growth will likely be supported by expansion in the electronics sector, export growth, and regional economic growth.

Singapore's inflation remains stable. According to MAS, cost pressures from wages will be relatively subdued as improving labor market conditions begin to absorb the previous labor market slack. A mild increase in food prices is expected in the short-term, while increasing commodity prices due to rising global demand will also contribute to a slight rise in inflation. Inflation is projected to come in around 0.5% for full-year 2017 while it is projected to remain in the 0%–1% range in 2018. Meanwhile, MAS core inflation is forecast at 1.5% in 2017 and between 1% and 2% in 2018.

In September, consumer price inflation was unchanged from August at 0.4% y-o-y. The increase in the price of services in September was offset by lower road transport prices, while food inflation remained largely unchanged.

Size and Composition

At the end of September, Singapore's LCY bonds outstanding reached SGD360 billion (USD265 billion), reflecting a rise of 3.8% quarter-on-quarter (q-o-q) and 10.4% y-o-y (**Table 1**). The rise came from increases in MAS bills and SGS bonds and bills outstanding.

Table 1: Size and Composition of the Local Currency Bond Market in Singapore

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2016		Q2 2017		Q3 2017		Q3 2016		Q3 2017	
	SGD	USD	SGD	USD	SGD	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**326**	**239**	**347**	**252**	**360**	**265**	**0.4**	**0.4**	**3.8**	**10.4**
Government	183	134	207	150	220	162	0.6	(2.6)	6.7	20.6
SGS Bills and Bonds	107	78	112	82	117	86	(2.0)	4.0	4.4	9.4
MAS Bills	76	56	94	69	103	76	4.6	(10.5)	9.4	36.3
Corporate	143	105	140	102	139	103	0.1	4.4	(0.4)	(2.6)

( ) = negative, LCY = local currency, MAS = Monetary Authority of Singapore, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, SGD = Singapore dollar, SGS = Singapore Government Securities, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Government bonds are calculated using data from national sources. Corporate bonds are based on *AsianBondsOnline* estimates.
2. SGS bills and bonds do not include the special issue of Singapore Government Securities held by the Singapore Central Provident Fund.
3. Bloomberg LP end-of-period LCY–USD rates are used.
4. Growth rates are calculated from an LCY base and do not include currency effects.
Sources: Bloomberg LP, Monetary Authority of Singapore, and Singapore Government Securities.

Government bonds. A 6.7% q-o-q increase in the outstanding stock of LCY government bonds brought the total to SGD220 billion at the end of September. Compared to the same period in 2016, LCY government bonds rose 20.6% y-o-y. SGS bills and bonds rose to SGD117 billion, reflecting an increase of 4.4% q-o-q and 9.4% y-o-y, while MAS bills rose to SGD103 billion, reflecting a rise of 9.4% q-o-q and 36.3% y-o-y.

SGS bills and bonds logged an increase of SGD4.9 billion as there were no redemptions in Q3 2017. Meanwhile, newly issued MAS bills rose 14.5% q-o-q and 39.6% y-o-y to SGD110.6 billion at the end of September.

Corporate bonds. Based on *AsianBondsOnline* estimates, total outstanding LCY corporate bonds in Singapore declined marginally by 0.4% q-o-q to SGD139 billion at the end of September. On a y-o-y basis, total outstanding LCY corporate bonds declined 2.6%.

At the end of September, bonds issued by the top 30 largest LCY corporate bond issuers comprised 50.0% of Singapore's total LCY corporate bonds. The three companies with the most bonds outstanding were all state-owned: Housing and Development Board (SGD23.1 billion), Temasek Financial I (SGD3.6 billion), and Land Transportation Authority (SGD3.5 billion). In the fourth spot was United Overseas Bank with SGD3.4 billion of total bonds outstanding. **Table 2** presents the corporate entities from various industries making up the list of the top 30 issuers.

Based on *AsianBondsOnline* estimates, newly issued corporate bonds amounted to SGD4.2 billion in Q3 2017. The largest issuance came from Singapore Airlines with a SGD700 million 10-year bond sold at a coupon rate of 3.13% (**Table 3**). The next largest was state-owned Housing and Development Board's 5-year bond sale worth SGD600 million at a 1.83% coupon rate. FCL Treasury and Olam International each issued perpetual bonds amounting to SGD350 million with coupon rates of 3.95% and 5.50%, respectively. In Q3 2017, new corporate bond issues contracted 9.6% q-o-q, but expanded 2.9% y-o-y.

Policy, Institutional, and Regulatory Developments

Monetary Authority of Singapore Simplifies Regulations for Venture Capital Funds

On 20 October, MAS simplified the authorization process for managers of venture capital funds. It exempted venture capital fund managers from the capital requirements and business conduct rules imposed on other fund managers, and cancelled the requirement for 5 years of relevant experience in fund management for shareholders and representatives of the venture capital fund. In order to qualify for the simplified regime, the venture capital manager must (i) only offer to accredited and/or institutional investors, (ii) invest at least 80% of the committed capital in securities issued by nonlisted start-up firms that are no more than 10 years old, and

Table 2: Top 30 Issuers of Local Currency Corporate Bonds in Singapore

	Issuers	Outstanding Amount		State-Owned	Listed Company	Type of Industry
		LCY Bonds (SGD billion)	LCY Bonds (USD billion)			
1.	Housing & Development Board	23.1	17.0	Yes	No	Real Estate
2.	Temasek Financial I	3.6	2.7	Yes	No	Finance
3.	Land Transport Authority	3.5	2.6	Yes	No	Transportation
4.	United Overseas Bank	3.4	2.5	No	Yes	Banking
5.	FCL Treasury	3.2	2.4	No	No	Finance
6.	Singapore Airlines	2.8	2.1	No	Yes	Transportation
7.	Capitaland	2.8	2.1	No	Yes	Real Estate
8.	Mapletree Treasury Services	2.2	1.6	No	No	Finance
9.	SP Powerassets	1.9	1.4	No	No	Utilities
10.	Olam International	1.8	1.4	No	Yes	Consumer Goods
11.	Keppel Corporation	1.7	1.3	No	Yes	Diversified
12.	DBS Group Holdings	1.5	1.1	No	Yes	Banking
13.	Oversea-Chinese Banking Corporation	1.5	1.1	No	Yes	Banking
14.	Public Utilities Board	1.4	1.0	Yes	No	Utilities
15.	DBS Bank	1.3	1.0	No	Yes	Banking
16.	National University of Singapore	1.3	0.9	No	No	Education
17.	City Developments Limited	1.2	0.9	No	Yes	Real Estate
18.	Hyflux	1.2	0.9	No	Yes	Utilities
19.	Capitaland Treasury	1.1	0.8	No	No	Finance
20.	Sembcorp Industries	1.0	0.7	No	Yes	Shipbuilding
21.	Ascendas REIT	1.0	0.7	No	Yes	Finance
22.	GLL IHT	1.0	0.7	No	No	Real Estate
23.	CMT MTN	0.9	0.7	No	No	Finance
24.	Singtel Group Treasury	0.9	0.7	No	No	Finance
25.	Neptune Orient Lines	0.9	0.6	No	Yes	Transportation
26.	Sembcorp Financial Services	0.9	0.6	No	No	Engineering
27.	SMRT Capital	0.8	0.6	No	No	Transportation
28.	Mapletree Commercial Trust	0.7	0.5	No	No	Real Estate
29.	Starhub	0.7	0.5	Yes	Yes	Telecommunications
30.	PSA Corporation	0.7	0.5	Yes	No	Marine Services
Total Top 30 LCY Corporate Issuers		**69.8**	**51.4**			
Total LCY Corporate Bonds		**139.5**	**102.7**			
Top 30 as % of Total LCY Corporate Bonds		**50.0%**	**50.0%**			

LCY = local currency, SGD = Singapore dollar, USD = United States dollar.
Notes:
1. Data as of end-September 2017.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

Table 3: Notable Local Currency Corporate Bond Issuance in the Third Quarter of 2017

Corporate Issuers	Coupon Rate (%)	Issued Amount (SGD million)
Singapore Airlines		
10-year bond	3.13	700
Housing and Development Board		
5-year bond	1.83	600
FCL Treasury		
Perpetual bond	3.95	350
Olam International		
Perpetual bond	5.50	350
Mapletree Treasury Services		
8-year bond	2.85	300

SGD = Singapore dollar.
Source: Bloomberg LP.

(iii) allow redemptions only at the end of the fund's life and bar issuance of new subscriptions for units of the fund after the close of fund-raising.

Singapore and the People's Republic of China Strengthen Capital Market Cooperation

In a second supervisory roundtable held on 3 November, MAS and the China Securities Regulatory Commission strengthened cooperation on capital market development and supervision. In particular, both sides agreed to collaborate on facilitating the development of their derivatives markets, set up a framework in supervising fund managers, and support qualified companies based in the People's Republic of China to list in Singapore. The roundtable meeting aimed to allow for future collaboration by enabling MAS and the China Securities Regulatory Commission to have a greater understanding of each other's regulatory framework.

Thailand

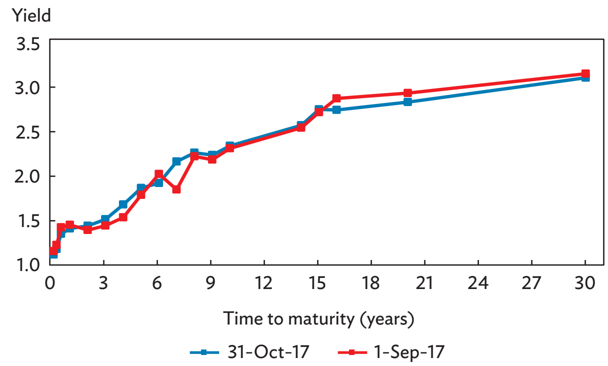
Yield Movements

Yields for Thailand's local currency (LCY) bonds mostly rose between 1 September and 31 October (**Figure 1**). Except for the 6- and 7-year bonds, yields for tenors of between 2 years and 15 years rose 3–14 basis points (bps). The yield for the 7-year bond had the largest gain at 31 bps. Bond yields for short-term bills of 1-year and below fell by an average of 5 bps. Yields for bonds with maturities of 6 years and for between 16 and 30 years fell by an average of 9 bps. The yield spread between the 2-year and 10-year maturities narrowed to 88 bps in 31 October from 90 bps in 1 September.

Prior to the United States (US) Federal Reserve's rosier assessment of the US economy, net foreign inflows to Thailand's LCY bond market had risen progressively since July, peaking in September. Thailand's strong currency—backed by large current account surpluses, its improving economy, and weak inflation—is drawing foreign investors into the bond market. However, in the month leading up to the Federal Reserve's policy announcement on 31 October–1 November meeting, the positive net flows began to reverse at the end of September and gained momentum from mid-October as reflected in the continued rise for most tenors. Moreover, despite leaving its policy rate unchanged, the European Central Bank's decision on 26 October to cut its monthly net asset purchases to EUR30 billion from EUR60 billion beginning in January 2018 may also have indicated an improving outlook for the global economy, leading to the rise in most of Thailand's LCY bond yields.

In view of easing the upward pressure on the Thai baht, Thailand's Ministry of Finance called for a policy rate cut of 50 bps in September. The Bank of Thailand (BOT), however, maintained its independence and in a unanimous vote opted to keep its 1-day repurchase rate at 1.50% in its monetary policy meeting held on 27 September. The BOT maintained that investor confidence in the economy remains strong and noted interest rate cuts alone would not deter capital inflows that have been causing the local currency to appreciate. Moreover, the central bank expects improvement in exports and domestic demand to propel economic growth. The BOT deems its current accommodative monetary policy stance as supportive of economic growth and will guide inflation back to its target range of 1.0%–4.0%.

Figure 1: Thailand's Benchmark Yield Curve—Local Currency Government Bonds



Sources: Based on data from Bloomberg LP.

In January–October, inflation averaged only 0.6%, with deflation in May and June. Inflation in October was at 0.9% year-on-year (y-o-y), unchanged from September. The BOT expects headline inflation to come in at 0.6% for full-year 2017.

Thailand's economy expanded in the second quarter (Q2) of 2017 by 3.7% y-o-y after growing 3.3% y-o-y in the first quarter of 2017. Gains in merchandise exports and tourism, and improvement in private consumption and investments, continued to support Thailand's economy. Consequently, in its 27 September monetary policy meeting, the BOT revised its economic growth estimate to 3.8% for both 2017 and 2018 from previous estimates of 3.5% and 3.7%, respectively.

Size and Composition

Thailand's LCY bond market rose 0.2% quarter-on-quarter (q-o-q) to THB10,996 billion (USD330 billion) at the end of September from THB10,973 billion at the end of June (**Table 1**). On a y-o-y basis, the LCY bond market expanded 3.8%.

Table 1: Size and Composition of the Local Currency Bond Market in Thailand

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2016		Q2 2017		Q3 2017		Q3 2016		Q3 2017	
	THB	USD	THB	USD	THB	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**10,593**	**306**	**10,973**	**323**	**10,996**	**330**	**2.1**	**8.4**	**0.2**	**3.8**
Government	7,819	226	7,964	235	7,976	239	1.3	6.9	0.1	2.0
Government Bonds and Treasury Bills	4,035	117	4,103	121	4,295	129	3.9	9.1	4.7	6.4
Central Bank Bonds	2,961	86	3,080	91	2,887	87	(2.3)	3.5	(6.3)	(2.5)
State-Owned Enterprise and Other Bonds	822	24	781	23	793	24	1.9	9.4	1.6	(3.5)
Corporate	2,775	80	3,009	89	3,021	91	4.6	13.0	0.4	8.9

( ) = negative, LCY = local currency, q-o-q = quarter-on-quarter, Q2 = second quarter, Q2 = third quarter, THB = Thai baht, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. Growth rates are calculated from an LCY base and do not include currency effects.
4. Q3 2017 data for government bonds outstanding are based on *AsianBondsOnline* estimates; corporate bonds outstanding are as of August 2017.
Sources: Bank of Thailand and Bloomberg LP.

Government bonds. The total outstanding stock of LCY government bonds rose to THB7,976 billion at the end of September, reflecting a rise of 0.1% q-o-q and 2.0% y-o-y. Government bonds and Treasury bills rose 4.7% q-o-q to THB4,295 billion at the end of September from THB4,103 at the end of June. However, this was offset by a corresponding decline in the outstanding stock of total central bank bonds, which contracted 6.3% q-o-q to THB2,887 billion at the end of September from THB3,080 billion at the end of June. The contraction was due to the reduced issuance of BOT bills since April in order to limit foreign fund flows into the short-term bond market. Meanwhile, state-owned enterprise and other bonds rose 1.6% q-o-q to THB793 billion at the end of September.

New securities issued by the BOT reached THB1,337 billion in the third quarter (Q3) of 2017, a decline of 0.6% q-o-q compared to THB1,345 billion in the previous quarter. Of this amount, BOT bonds amounted to THB1,195 billion, accounting for 89.4% of aggregate issuance during the period. Meanwhile, issuance of government bonds and Treasury bills declined 47.8% q-o-q and 14.9% y-o-y to THB229 billion in Q3 2017.

Corporate bonds. As of the end of September, the outstanding stock of Thailand's LCY corporate bonds had risen 0.4% q-o-q to THB3,021 billion. The q-o-q increase in corporate bonds came as new issuance exceeded maturing bonds despite a 39.6% q-o-q decline in new corporate debt issuance in Q3 2017 to THB274 billion.

The total outstanding bonds of Thailand's top 30 corporate bond issuers amounted to THB1,722 billion, making up 57% of the total corporate bonds stock as of the end of September (**Table 2**). The top five corporate entities in the list maintained their rankings from Q2 2017, with each having outstanding LCY bonds exceeding THB100 billion. The majority of the top 30 corporate bond issuers are companies listed on the stock exchange, six of which are state-owned corporations.

Table 3 presents the notable corporate bond issuances in Q3 2017. Bangkok Commercial Asset Management, the largest bad-debt management firm in Thailand, had the largest issuance with a multitranche bond sale worth THB17 billion. CP All, a Thailand-based operator of convenience stores, was the next largest issuer with THB13 billion in total sales of 10-year bonds and perpetual bonds. The next largest issuers were two state-owned firms: PTT, Thailand's oil and gas company, which sold THB10 billion worth of 4-year bonds with a 3.05% coupon rate, and Siam Cement, which sold THB10 billion of 7-year bonds with a 2.97% coupon rate.

Investor Profile

Central government bonds. As of the end of September, the largest holders of Thailand's LCY government bonds were financial corporations, other depository corporations, nonresidents, and the central government. These four groups accounted for a 90.3% share of total central government bonds outstanding. Holdings of financial corporations (not including commercial banks)

Table 2: Top 30 Issuers of Local Currency Corporate Bonds in Thailand

Issuers		Outstanding Amount		State-Owned	Listed Company	Type of Industry
		LCY Bonds (THB billion)	LCY Bonds (USD billion)			
1.	CP All	187.7	5.6	No	Yes	Commerce
2.	Siam Cement	176.5	5.3	Yes	Yes	Construction Materials
3.	PTT	134.8	4.0	Yes	Yes	Energy and Utilities
4.	Berli Jucker	122.0	3.7	No	Yes	Food and Beverage
5.	Bank of Ayudhya	101.9	3.1	No	Yes	Banking
6.	Charoen Pokphand Foods	93.0	2.8	No	Yes	Food and Beverage
7.	True Move H Universal Communication	68.2	2.0	No	No	Communications
8.	Thai Airways International	66.1	2.0	Yes	Yes	Transportation and Logistics
9.	Tisco Bank	52.3	1.6	No	No	Banking
10.	Indorama Ventures	49.4	1.5	No	Yes	Petrochemicals and Chemicals
11.	Toyota Leasing Thailand	47.5	1.4	No	No	Finance and Securities
12.	Banpu	47.3	1.4	No	Yes	Energy and Utilities
13.	Krungthai Card	43.9	1.3	Yes	Yes	Banking
14.	Land & Houses	39.3	1.2	No	Yes	Property and Construction
15.	Bangkok Commercial Asset Management	39.2	1.2	No	No	Finance and Securities
16.	Mitr Phol Sugar	34.9	1.0	No	No	Food and Beverage
17.	Thai Union Group	33.8	1.0	No	Yes	Food and Beverage
18.	TPI Polene	33.0	1.0	No	Yes	Property and Construction
19.	Thanachart Bank	32.5	1.0	No	No	Banking
20.	PTT Exploration and Production Company	32.1	1.0	Yes	Yes	Energy and Utilities
21.	True Corp	31.6	0.9	No	Yes	Communications
22.	DTAC Trinet	31.5	0.9	No	Yes	Communications
23.	Advanced Wireless	31.2	0.9	No	Yes	Communications
24.	CPF Thailand	29.0	0.9	No	Yes	Food and Beverage
25.	CH. Karnchang	28.5	0.9	No	Yes	Property and Construction
26.	Bangkok Expressway and Metro	28.2	0.8	No	Yes	Transportation and Logistics
27.	Bangkok Dusit Medical Services	28.0	0.8	No	Yes	Medical
28.	Kasikorn Bank	28.0	0.8	No	Yes	Banking
29.	Minor International	26.0	0.8	No	Yes	Food and Beverage
30.	PTT Global Chemical	24.7	0.7	Yes	Yes	Petrochemicals and Chemicals
Total Top 30 LCY Corporate Issuers		**1,722.0**	**51.7**			
Total LCY Corporate Bonds		**3,020.7**	**90.7**			
Top 30 as % of Total LCY Corporate Bonds		**57.0%**	**57.0%**			

LCY = local currency, THB = Thai baht, USD = United States dollar.
Notes:
1. Data as of end-September 2017. Total corporate bonds outstanding are as of August 2017.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

Table 3: Notable Local Currency Corporate Bond Issuance in the Third Quarter of 2017

Corporate Issuers	Coupon Rate (%)	Issued Amount (THB million)
Bangkok Commercial Asset Management		
1.5-year bond	2.03	4,000
4-year bond	2.53	1,000
6-year bond	3.44	3,800
8-year bond	3.73	3,200
10-year bond	3.91	5,000
CP All		
10-year bond	3.96	3,000
Perpetual bond	5.00	10,000
PTT Global Chemical		
4-year bond	3.05	10,000
Siam Cement		
7-year bond	2.97	10,000
Betagro		
3-year bond	2.40	2,000
5-year bond	2.95	3,000
7-year bond	3.37	1,000
UOB Thai		
10-year bond	3.56	6,000
DTAC Trinet Co.		
3.5-year bond	2.25	1,500
10-year bond	3.58	2,000
12-year bond	3.78	2,500

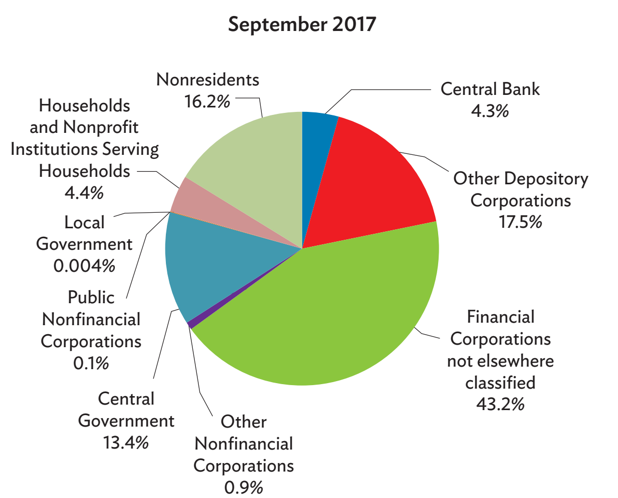
THB = Thai baht.
Source: Bloomberg LP.

increased to 43.2% of the total at the end of September from 42.3% in the same period a year earlier (**Figure 2**). In the same period, the share of other depository corporations (including commercial banks) increased to 17.5% from 16.8%. Notably, nonresidents became the third largest investor group, holding a 16.2% share at the end of September versus a 14.8% a year earlier, due to increased foreign fund inflows. The share of central government dropped from 16.6% to 13.4%.

Central bank bonds. At the end of September, commercial banks and other depository corporations were the largest holders of central bank bonds at a share of 41.6% (**Figure 3**). This was higher from its share of 35.6% in the same period a year earlier. The central government also posted an increase in its holdings of central bank securities during the review period. All other investor group posted either declines or remained unchanged in their respective holdings of central bank bonds at the end of September compared with the same period a year earlier.

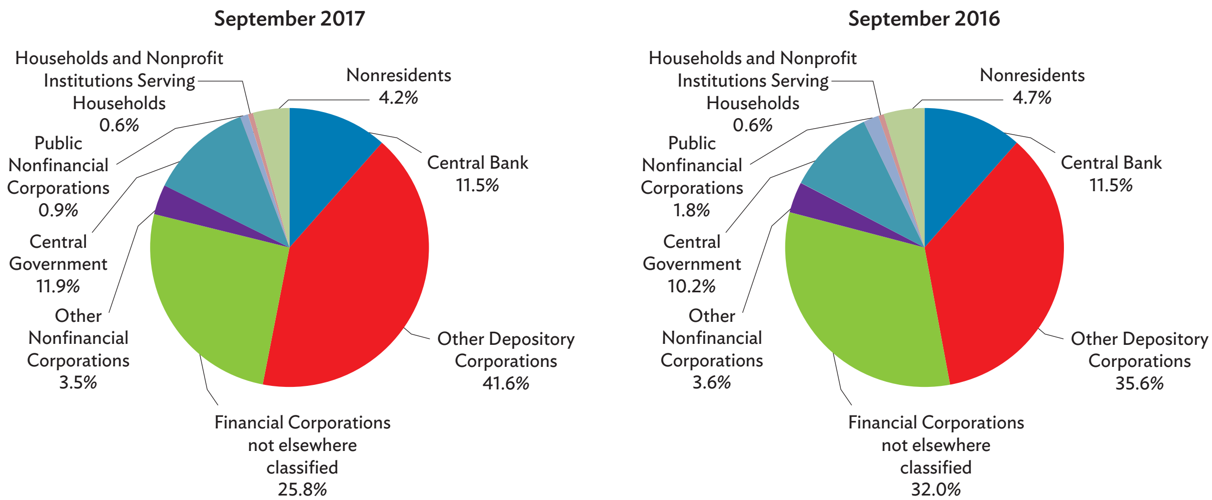
Foreign investor holdings of central bank bonds accounted for only a 4.2% share at the end of September. While their overall holdings remain relatively small compared with other investor groups, it has risen significantly from about 2.0% over the past 3 quarters (**Figure 4**).

Figure 2: Local Currency Government Bonds Investor Profile



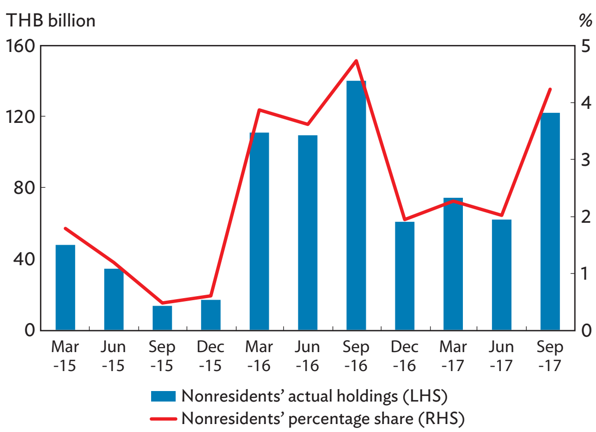
Note: Government bonds exclude central bank bonds and state-owned enterprise bonds.
Sources: *AsianBondsOnline* and Bank of Thailand.

Figure 3: Local Currency Central Bank Securities Investor Profile



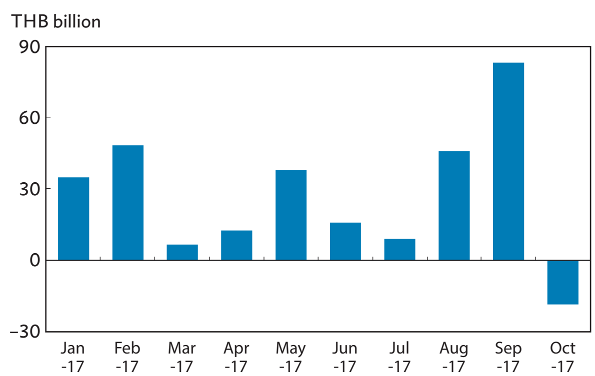
Source: Bank of Thailand.

Figure 4: Foreign Holdings of Local Currency Central Bank Securities



LHS = left-hand side, RHS = right-hand side, THB = Thai baht.
Source: Bank of Thailand.

Figure 5: Foreign Investor Net Trading of Local Currency Bonds in Thailand



THB = Thai baht.
Source: Thai Bond Market Association.

Since January, foreign investment flows into Thailand's LCY bond market remained positive, peaking in September at THB137 billion (**Figure 5**). Foreign investment inflows rose significantly in August and September due to improving investor confidence in Thailand's economy. Also, rising geopolitical risks in the Republic of Korea may have led foreign investors to shift their portfolios to Thailand's bond market. In October, Thailand's bond market experienced a net foreign investment outflow of THB18 billion as a result of global monetary tightening. The US Federal Reserve started its balance sheet normalization in the same month. Moreover, the European Central Bank announced it would taper its asset purchases starting January 2018.

Policy, Institutional, and Regulatory Developments

Bank of Thailand Eases Capital Outflow Regulations

On 4 September, the Bank of Thailand eased its capital outflow regulations. It approved the maximum quota for overseas indirect investments set by the Securities and Exchange Commission to USD100 billion from the previous USD75 billion. It also relaxed rules governing money changers to allow the buying and selling of foreign-currency-denominated banknotes with foreign banks and other money changers. In loosening its capital outflow regulations, the Bank of Thailand aims to curb the appreciation of the Thai baht while increasing the opportunity for Thai investors to invest in foreign securities and giving money changers additional room to streamline their business.

Public Debt Management Office Allots Special Period to Foreign Entities for THB-Denominated Bond Issuance Applications

The Public Debt Management Office (PDMO) regularly accepts applications for Thai baht bond issuance by foreign firms three times a year in March, July, and November. In a measure to further ease the appreciation of the Thai baht, the PDMO in September opened an additional period (6 September–6 October) for foreign entities to apply for permission to issue THB-denominated bonds. Upon approval, foreign entities must comply with the conditions that (i) issued bonds must carry a tenor of 3 years or less, (ii) the issue date must fall between 1 November 2017 and 31 March 2018, and (iii) proceeds must be used for either domestic transactions in baht or onshore USD–THB spot exchange.

Public Debt Management Office Announces Funding Plan for Fiscal Year 2018

In September, PDMO conducted a public dialogue and announced its funding plan for fiscal year 2018, which will help finance its budget deficit projected at THB450 billion. About 56.0% of the borrowing plan will be financed through the issuance of benchmark bonds with maturities of 5, 10, 15, 20, 30, and 50 years. PDMO also plans to issue savings bonds and short-term debt securities, and conduct a debt switch program.

Viet Nam

Yield Movements

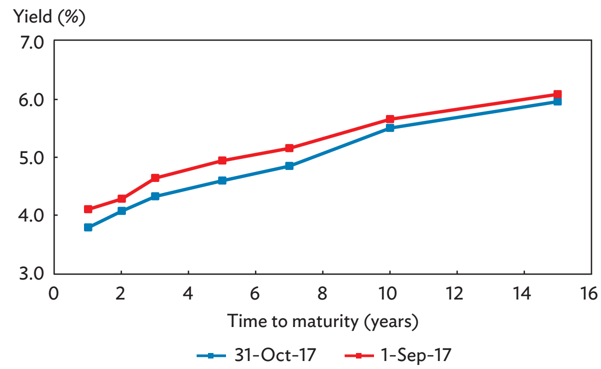
Local currency (LCY) government bond yields in Viet Nam fell across all tenors between 1 September and 31 October, which led the entire yield curve to shift downward (**Figure 1**). Yields shed an average of 30 basis points (bps) from the 1-year through the 7-year maturities, and declined an average of 14 bps for maturities of 10 years and above. As a result, the spread between the 2-year and 10-year tenors widened from 136 bps on 1 September to 142 bps on 31 October.

Bucking the trend among its emerging East Asian peers, Viet Nam saw declining bond yields during the review period. The rise in yields in advanced economies had little impact on Viet Nam's yields since domestic investors are the major participants in its bond market. However, the unwinding of quantitative easing measures by the United States (US) Federal Reserve and the European Central Bank, may push bond yields up in the medium-term.

The decline in yields was also driven by the State Bank of Vietnam easing its monetary policy. In July, the central bank reduced its policy rates by 25 bps each, which brought the refinancing rate to 6.25% and the discount rate to 4.25%. The rate cut was aimed at boosting economic growth following slowing growth in the first half of the year. Subsequently, in September, the government has requested the State Bank of Vietnam to lower interest rates by 0.5% and to boost lending to achieve the credit growth target of 21%-22% for this year. Other central government and line agencies, including the Ministry of Planning and Investment and Ministry of Finance were also directed to speed up the release of funds for public investments. The government believes that its economic growth target of 6.7% for this year can be achieved given these additional measures.

In the third quarter (Q3) of 2017, real gross domestic product (GDP) growth climbed to 7.5% year-on-year (y-o-y) from a revised 6.3% y-o-y hike in the second quarter (Q2) of 2017. As a result of the strong economic expansion during the quarter, real GDP growth for the January–September period rose to 6.4% y-o-y from 5.7% y-o-y in the first half of the year, closing the gap with the government's full-year 2017 economic growth target.

Figure 1: Viet Nam's Benchmark Yield Curve—Local Currency Government Bonds



Source: Based on data from Bloomberg LP.

The industrial and construction sector and the services sector posted growth of more than 7.0% each during the first 9 months of the year.

Consumer price inflation trended higher in July, August, and September before easing in October. Consumer prices rose 3.0 % y-o-y in October, down from 3.4% y-o-y from a month earlier due to slower increase in food prices. Among the subindexes, medical and healthcare posted the highest inflation rate at 32.1% y-o-y in October. On a month-on-month basis, consumer price inflation eased 0.4% in October.

Size and Composition

Viet Nam continues to have the smallest LCY bond market in emerging East Asia. At the end of September, Viet Nam's LCY bonds outstanding reached VND1,044.2 trillion (USD46 billion) (**Table 1**). Growth was higher on a quarter-on-quarter (q-o-q) basis in Q3 2017 at 2.4%, up from 1.9% q-o-q in Q2 2017. On a y-o-y basis, however, growth eased to 0.2% from 5.0% during the same period. Much of the growth during the quarter came from an increase in the stock of central bank bills.

Government bonds. At the end of September, the LCY government bond market rose to VND1,001.2 trillion, with growth up 2.7% q-o-q and 0.2% y-o-y. The overall

Table 1: Size and Composition of the Local Currency Bond Market in Viet Nam

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2016		Q2 2017		Q3 2017		Q3 2016		Q3 2017	
	VND	USD	VND	USD	VND	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	1,041,724	47	1,019,554	45	1,044,229	46	7.2	22.5	2.4	0.2
Government	999,630	45	974,757	43	1,001,162	44	7.2	21.4	2.7	0.2
Treasury Bonds	719,847	32	780,707	34	786,957	35	0.2	34.3	0.8	9.3
Central Bank Bills	69,999	3	0	0	21000	1	600.0	(22.5)	–	(70.0)
State-Owned Enterprise and Municipal Bonds	209,784	9	194,050	9	193,205	9	2.9	6.4	(0.4)	(7.9)
Corporate	42,094	2	44,797	2	43,067	2	8.5	57.2	(3.9)	2.3

– = not applicable, ( ) = negative, LCY = local currency, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, USD = United States dollar, VND = Vietnamese dong, y-o-y = year-on-year.
Notes:
1. Bloomberg LP end-of-period LCY–USD rates are used.
2. Growth rates are calculated from an LCY base and do not include currency effects.
Sources: Bloomberg LP and Vietnam Bond Market Association.

growth in government bonds came largely from increases in the stock of central bank bills issued by the State Bank of Vietnam. The central bank resumed issuance of bills in July after its last issuance in March as it aims to increase its foreign exchange reserves.

The stock of Treasury bonds also contributed to the growth, although to a lesser extent. The policy rate cut in July drove yields lower. As the government does not want to allow yields to go higher, most auctions for government bonds were only partially awarded during the quarter.

Corporate bonds. The outstanding stock of LCY corporate bond market slipped to VND43.1 trillion at the end of September. Growth contracted 3.9% q-o-q but rose 2.3% y-o-y in Q3 2017. There was only one corporate bond issuance from Viet Nam during the quarter, from Loc Troi Group, which issued via private placement. (A number of corporate bonds in Viet Nam are issued through private placements and some of the relevant data are not publicly available.)

At the end of September, a total of 26 firms comprise Viet Nam's entire corporate bond segment (**Table 2**). The largest issuer was Masan Consumer Holdings, whose outstanding bonds of VND11.1 trillion accounted for a 25.8% share of the aggregate corporate bond stock at the end of September. Real estate firm Vingroup JSC maintained the second spot with outstanding bonds valued at VND7.0 trillion. Asia Commercial Joint Stock rounded out the top three with bonds amounting to VND4.6 trillion.

Policy, Institutional, and Regulatory Developments

Government Approves Road Map for Bond Market Development

In August, the Government of Viet Nam approved a 3-year road map for bond market development, with the aim of aligning the bond market with the money market and capital market. Under the road map, the share of bonds to GDP is expected to increase to 45% by 2020 and to 65% by 2030.

Table 2: Corporate Issuers of Local Currency Corporate Bonds in Viet Nam

	Issuers	Outstanding Amount		State-Owned	Listed Company	Type of Industry
		LCY Bonds (VND billion)	LCY Bonds (USD billion)			
1.	Masan Consumer Holdings	11,100	0.49	No	No	Diversified Operations
2.	Vingroup JSC	7,000	0.31	No	Yes	Real Estate
3.	Asia Commercial Joint Stock	4,600	0.20	No	No	Finance
4.	Hoang Anh Gia Lai	4,000	0.18	No	Yes	Real Estate
5.	Techcom Bank	3,000	0.13	No	No	Banking
6.	Vietcombank	2,000	0.09	Yes	Yes	Banking
7.	Vietnam Electrical Equipment	1,800	0.08	No	Yes	Manufacturing
8.	No Va Land Investment Group	1,450	0.06	No	Yes	Real Estate
9.	Agro Nutrition International	1,300	0.06	No	No	Agriculture
10.	Ho Chi Minh City Infrastructure	1,033	0.05	No	Yes	Infrastructure
11.	DIC Corporation	1,000	0.04	Yes	No	Chemicals
12.	Saigon-Hanoi Securities Corporation	700	0.03	No	Yes	Finance
13.	Sai Gon Thuong Tin Real Estate	600	0.03	No	Yes	Real Estate
14.	Khang Dien House Trading and Investment	534	0.02	No	Yes	Building and Construction
15.	Tasco Corporation	500	0.02	No	Yes	Engineering and Construction
16.	An Phat Plastic & Green Environment	450	0.02	No	Yes	Industrial
17.	Sotrans Corporation	400	0.02	No	No	Logistics
18.	Vietnam Investment Construction and Trading	350	0.02	No	Yes	Building and Construction
19.	Hung Vuong Corporation	300	0.01	No	Yes	Food
20.	Loc Troi Group	220	0.01	No	Yes	Manufacturing
21.	Ha Do Corporation	200	0.01	No	Yes	Construction
22	Saigon Securities	200	0.01	No	Yes	Finance
23.	Son Ha International	110	0.005	No	Yes	Building and Construction
24.	Dongnai Plastic	100	0.004	No	Yes	Industrial
25.	Fecon	70	0.003	No	Yes	Engineering and Construction
26.	Construction Joint Stock Company No. 3	50	0.002	No	Yes	Real Estate
Total LCY Corporate Issuers		43,067	**1.89**			

LCY = local currency, USD = United States dollar, VND = Vietnamese dong.
Notes:
1. Data as of end-September 2017.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bloomberg LP and Vietnam Bond Market Association data.

Asia Bond Monitor

November 2017

This publication reviews recent developments in East Asian local currency bond markets along with the outlook, risks, and policy options. It covers the 10 members of the Association of Southeast Asian Nations and the People's Republic of China; Hong Kong, China; and the Republic of Korea.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to a large share of the world's poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

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