ASIA BOND MONITOR

NOVEMBER 2016

ASIAN DEVELOPMENT BANK

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This edition of the ABM was prepared by a team from the Economic Research and Regional Cooperation Department headed by Juzhong Zhuang, Officer-in-Charge, and supervised by Macroeconomics Research Division Director Joseph Zveglich Jr. The production of the ABM was led by Donghyun Park and supported by the AsianBondsOnline (ABO) team. ABO team members include Michael Angelo Cokee, Angelica Andrea Cruz, Russ Jason Lo, Carlo Monteverde, Roselyn Regalado, and Angelo Taningco. Gemma Esther Estrada provided operational support, Kevin Donahue provided editorial assistance, and Principe Nicdao did the typesetting and layout. Contributions from Shu Tian of the Economic Research and Regional Cooperation Department and Suk Hyun of Korea Capital Market Institute are gratefully acknowledged.

How to reach us:
Asian Development Bank
Economic Research and Regional Cooperation Department
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
Tel +63 2 632 6688
Fax +63 2 636 2183
E-mail: asianbonds_feedback@adb.org

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6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines
Tel +63 2 632 4444; Fax +63 2 636 2444
www.adb.org

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ADB recognizes "China" as the People's Republic of China; "Hong Kong" and "Hongkong" as Hong Kong, China; "Korea" as the Republic of Korea; "Taiwan" as Taipei,China; "Vietnam" as Viet Nam; and "Hanoi" as Ha Noi.
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Highlights

Bond Market Outlook

Local currency (LCY) government bond yields in advanced economies and emerging East Asia climbed between 31 October and 18 November due to increased concerns over the direction of the United States (US) economy.[1] With the recently concluded US election, markets outside of the US experienced rising uncertainty and increased risk aversion as investors struggled to discern the future direction of the incoming US administration's economic policy. The US economy has also strengthened, increasing the likelihood that the Federal Reserve will raise the policy rate in December.

Nearly all markets in emerging East Asia saw an uptick in 2-year and 10-year LCY government bond yields between 31 October and 18 November. The only exception was the People's Republic of China's (PRC) 2-year tenor which was unchanged.

Given rising uncertainty, most central banks in emerging East Asia maintained their existing monetary policies in order to wait for greater clarity regarding US economic policy and its potential impacts on global financial markets.

Currencies in all emerging East Asian markets fell against the US dollar between 31 October and 18 November. Regional currencies depreciated mainly on rising US yields and declining equity markets across the region. Almost all emerging East Asian equity markets declined except for those in the PRC and Singapore. Credit default swap spreads rose in all regional markets except in Thailand during the review period.

Risks to emerging East Asia's LCY bond market include (i) the prospective interest rate hike by the Federal Reserve; (ii) uncertainty over the direction of US economic policy; (iii) a "hard Brexit," which would have serious repercussions for financial markets in emerging East Asia; (iv) the possibility of generalized global risk aversion toward emerging markets; and (v) the rise of protectionism and economic nationalism.

This issue of the *Asia Bond Monitor* includes a special discussion box on the possible effects on the region of a Federal Reserve rate hike. (Please see The Potential Impact of a United States Interest Rate Hike on Emerging Asia.)

Local Currency Bond Market Growth in Emerging East Asia

Emerging East Asia's LCY bond market reached a size of USD10,435 billion at the end of September. Growth in the third quarter (Q3) of 2016 moderated to 3.3% quarter-on-quarter (q-o-q) and 19.2% year-on-year (y-o-y) from 5.9% q-o-q and 21.7% y-o-y in the second quarter (Q2) of 2016.

Indonesia was home to the fastest-growing bond market on both a q-o-q and y-o-y basis. In terms of absolute size, the largest markets were in the PRC and the Republic of Korea. These two markets together accounted for 86.9% of the region's total bond stock at the end of September.

Growth in Q3 2016 was largely driven by government bonds, which rose 4.8% q-o-q and 26.9% y-o-y. Corporate bonds grew at a slower pace of 0.9% q-o-q and 7.8% y-o-y.

As a share of regional gross domestic product (GDP), the size of emerging East Asia's LCY bond market rose to 69.9% in Q3 2016 from 68.2% in the previous quarter. The expansion was largely driven by government bonds, whose share of GDP rose by more than 1 percentage point to 44.6% in Q3 2016. On the other hand, the share of corporate bonds to GDP was broadly unchanged. Leading the region in terms of bond market size as a share of GDP were the Republic of Korea and Malaysia at 136.3% and 96.9%, respectively.

Issuance of LCY bonds in emerging East Asia reached USD1,167 billion in Q3 2016, down 12.0% q-o-q but up 7.0% y-o-y. The q-o-q contraction stemmed from lower LCY bond sales in the PRC and the Republic of Korea.

Structural Developments in Local Currency Bond Markets

Foreign investor holdings of emerging East Asia's LCY government bonds continued to rise amid a global low interest rate environment and after the US held off raising interest rates. Nonresidents increased their holdings of

[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.

Indonesian, Malaysian, and Thai government bonds at the end of September. However, foreign outflows from these markets were observed in November amid global volatility in the aftermath of the US presidential election.

Consistent with the foreign holdings data, foreign capital flows into emerging East Asia's LCY bond market were positive in Q3 2016, albeit lower than in the previous quarter. The only market in the region that posted net capital outflows during the quarter was the Republic of Korea. However, some degree of reversal is expected given current market conditions that include investors shifting to safe-haven assets.

Local Currency Bond Yields

Emerging East Asian bond yields rose for nearly all markets and for most tenors between 31 October and 18 November amid uncertainty over future US economic policy and the likelihood of a Federal Reserve rate hike in December.

Most emerging East Asian bond markets experienced a widening spread between the 2-year and 10-year yields between 31 October and 18 November, leading to steepening yield curves across the region. The only exceptions to this trend were in the bond markets of Indonesia, Malaysia, and Viet Nam.

AsianBondsOnline Annual Bond Market Liquidity Survey

Overall liquidity conditions for emerging East Asia's LCY bond market have improved in 2016, according to the results of the most recent *AsianBondsOnline* bond market liquidity survey, which was conducted from late September through early October. The region's average bid–ask spread for on-the-run government bonds narrowed to 3.8 bps in 2016 from 5.4 bps in 2015. Bid-ask spreads narrowed in all of the region's government bond markets except for the Philippines, Singapore, and Thailand.

The average transaction size for on-the-run government bonds climbed to USD5.2 million in 2016 from USD3.5 million in 2015, indicating an ability to transact larger volume trades.

A widening of bid–ask spreads was observed in 2016 for corporate bond markets in the PRC, the Philippines, Singapore, and Thailand. Bid–ask spreads for corporate bonds fell in Hong Kong, China; and were broadly unchanged in Indonesia, the Republic of Korea, and Malaysia.

Theme Chapter: Infrastructure Bond Market Developments in Asia—Challenges and Solutions

We attempt to identify the determinants of infrastructure bond market development in Asia and to evaluate the impact of the Project Bond Initiative (PBI) on the development of infrastructure bond markets in Europe, with the objective of deriving policy implications for Asia.[2]

The empirical results show that an economy's size is positively associated with infrastructure bond market development. In addition, bond market standardization and harmonization through the Association of Southeast Asian Nations Plus Three (ASEAN+3) Bond Market Forum can facilitate the integration of individual Asian bond markets to help them obtain the minimum efficient scale needed to enhance liquidity and depth through an integrated regional bond market.[3]

The empirical results also show that the PBI has contributed significantly to infrastructure bond market development in Europe. Considering the positive impacts of the PBI in Europe and the relatively lower credit ratings of infrastructure bonds in Asia, ASEAN+3 economies should take policy measures to facilitate the issuance of infrastructure bonds and strengthen the role of the Credit Guarantee and Investment Facility in providing guarantees for infrastructure bonds.

Asia's infrastructure bond markets are still at a nascent stage of development, especially when the amount of issuance is compared with needed investment levels. At the same time, meaningful progress has been achieved in facilitating an environment conducive for the issuance of infrastructure bonds. ASEAN+3 has demonstrated its commitment to developing infrastructure bond markets and the regional Credit Guarantee Investment Facility is now providing guarantees for infrastructure bonds. The time is opportune for ASEAN+3 to strengthen regional initiatives to promote infrastructure bond market development across Asia.

[2] Asia refers to Brunei Darussalam; the People's Republic of China; Hong Kong, China; Indonesia; Japan; the Republic of Korea; the Lao People's Democratic Republic; Malaysia; the Philippines; Singapore; and Thailand.

[3] ASEAN+3 refers to the 10 members of the Association of Southeast Asian Nations plus the People's Republic of China, Japan, and the Republic of Korea.

Introduction: Bond Yields Rise Amid Uncertainties on United States Economic Policy

Bond yields trended upward in advanced economies and in emerging East Asia between 31 October and 18 November (**Table A**; **Figures A1, A2**).[4] Global bond yields have sharply risen since the conclusion of the United States (US) presidential election in reaction to uncertainty over the direction of the US economy policy under a new administration. While markets expect that the incoming administration will boost economic growth, the impact on markets outside of the US is less certain.

A solid consensus among market participants and observers that the US Federal Reserve is likely to raise rates in December has also placed upward pressure on yields. While the Federal Reserve held off raising the federal funds rate at its most recent meeting in November, subsequent testimony by Federal Reserve Chair Janet Yellen indicated that a hike could occur soon if the data suggest it. The Federal Reserve noted in its last meeting that while US employment levels were stable in October, job gains had been solid. Inflation has also picked up in the latter part of the year, although it is still below the Federal Reserve's long-term target.

While the Federal Reserve noted stable monthly job gains, the August and September increases in nonfarm payrolls of 176,000 and 191,000, respectively, were below June's 271,000 and July's 252,000. At the same time, the average monthly increase in nonfarm payrolls

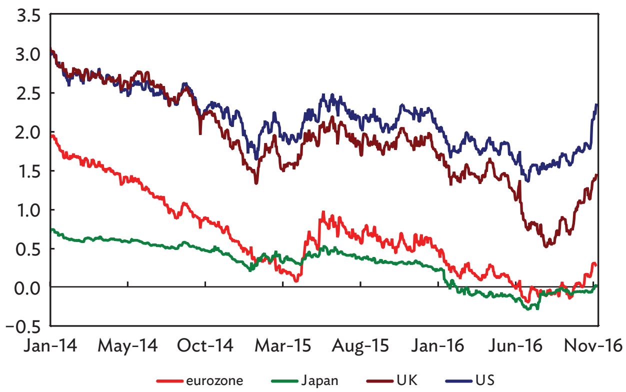
Table A: Changes in Global Financial Conditions

	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	23	53	–	2.6	–
United Kingdom	(6)	21	1	(2.6)	0.8
Japan	7	9	(0.3)	2.5	(5.8)
Germany	(5)	11	4	(0.004)	(3.6)
Emerging East Asia					
China, People's Rep. of	0	16	12	3.0	(1.6)
Hong Kong, China	21	31	–	(2.6)	(0.02)
Indonesia	72	59	27	(4.7)	(2.9)
Korea, Rep. of	22	46	10	(1.7)	(3.4)
Malaysia	92	80	48	(2.9)	(5.3)
Philippines	28	61	17	(4.6)	(2.7)
Singapore	26	47	–	0.9	(2.5)
Thailand	0.1	47	(2)	(1.5)	(1.5)
Viet Nam	63	2	23	(0.4)	(0.8)
Select European Markets					
Greece	(125)	(116)	(23)	3.5	(3.6)
Ireland	2	35	1	6.5	(3.6)
Italy	10	43	22	(5.0)	(3.6)
Portugal	20	48	8	(5.0)	(3.6)
Spain	7	40	12	(5.7)	(3.6)

( ) = negative, – = not available, bps = basis points, FX = foreign exchange.
Notes:
1. Data reflect changes between 31 October and 18 November 2016.
2. A positive (negative) value for the FX rate indicates the appreciation (depreciation) of the local currency against the United States dollar.
Sources: *AsianBondsOnline*, Bloomberg LP, and Institute of International Finance.

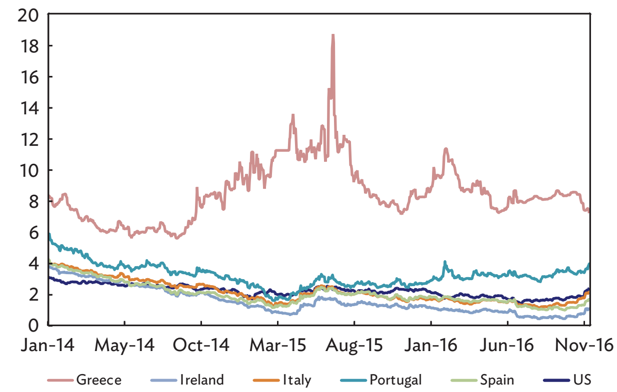
[4] Emerging East Asia comprises the People's Republic of China; Hong Kong, China; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.

Figure A1: 10-Year Government Bond Yields
(% per annum)



UK = United Kingdom, US = United States.
Note: Data as of 18 November 2016.
Source: Bloomberg LP.

Figure A2: 10-Year Government Bond Yields
(% per annum)



US = United States.
Note: Data as of 18 November 2016.
Source: Bloomberg LP.

was 206,000 in the third quarter (Q3) of 2016, up from 146,000 per month in the second quarter. Increase in nonfarm payrolls in October came in at 161,000.

Other economic data suggest that a December rate hike is likely. Gross domestic product growth in the US accelerated to an annualized rate of 2.9% in Q3 2016 from 1.4% in the previous quarter, buoyed by strong export growth.

The monetary policies of other advanced economies paint a mixed picture. While markets have anticipated US policy tightening, the European Central Bank (ECB) is maintaining several of its policies. For example, the ECB kept policy rates unchanged and left intact its asset purchase program during its September and October meetings. The asset purchases are scheduled to end on March 2017 even though market participants prefer an extension of this program. Therefore, the ECB leaving its current plan unchanged was viewed as policy tightening. Inflation in the European Union also crept upward, with October inflation rising to 0.5% year-on-year (y-o-y) from 0.4% y-o-y in September.

In contrast to the ECB and Federal Reserve, the Bank of Japan intensified its monetary easing in September by adopting a New Framework for Strengthening Monetary Easing, which involves yield curve control measures that target both short-term and long-term interest rates. The Bank of England eased monetary policy in August by cutting the bank rate by 25 basis points (bps) to 0.25% and adding an asset purchase program. In its September meeting, the Bank of England maintained its existing monetary policy.

Nearly all markets in emerging East Asia saw an uptick in 2-year and 10-year local currency (LCY) government bond yields between 31 October and 18 November, driven by expectations of a Federal Reserve rate hike and market volatility following the conclusion of the US presidential election. Most of the region's central banks have adopted a wait-and-see position given the looming rate hike in the US and other economic uncertainty. A notable exception was Bank Indonesia, which eased monetary policy by reducing its 7-day reverse repurchase rate by 25 bps in both September and October for a cumulative reduction of 50 bps since it began using this rate as a benchmark policy rate in August. In its November meeting, Bank Indonesia held steady its policy rate in response to global market volatility.

The overall regional trend has been toward higher yields as LCY government bond yields rose in nearly all markets between 31 October and 18 November. The only exception was in the People's Republic of China (PRC) where the yield for the 2-year bond was unchanged. The largest increases occurred in Malaysia, where the yield for 2-year bonds rose 92 bps and the yield for 10-year bonds climbed 80 bps. Indonesian bond yields also gained 72 bps and 59 bps for the 2-year and 10-year maturities, respectively. Indonesia and Malaysia were most affected as their bond markets are vulnerable to foreign capital outflows due to large shares of foreign investor holdings that exceeded 35% in both markets at the end of September.

Currencies in all emerging East Asian markets fell against the US dollar between 31 October and 18 November. The decline in the region's currencies was mostly due to the rise in US yields and declines in the region's equity markets. Outflows are expected from the region's bond markets as the rise in US yields makes US assets more attractive. The steepest currency declines were in Malaysia (–5.3%) and the Republic of Korea (–3.4%).

Equity markets throughout the region stumbled in the wake of the US elections, except in the PRC and Singapore. The declines came despite gains in US equity prices as market participants factored in the possibility that protectionist campaign rhetoric could be reflected in the new administration's policies. Equity markets in the PRC gained 3.0% between 31 October and 18 November as investors awaited the declaration of the Shenzhen–Hong Kong stock exchange link. Recently announced property curbs are also expected to shift funds into the PRC's stock market. In Singapore, the stock market was up 0.9% during the review period as it has traditionally been deemed a safe haven relative to its regional peers.

Credit default swap (CDS) spreads in emerging East Asia picked up in all regional markets except in Thailand during the review period **(Figure B)**. CDS spreads in Malaysia climbed the most at 48 bps, followed by Indonesia where spreads gained 27 bps. CDS spreads in peripheral European markets were broadly stable **(Figure C)**. The Volatility Index spiked in the period leading up to the US presidential election due to political uncertainty before declining after the conclusion of the elections **(Figure D)**. EMBI spreads have also risen amid uncertainty over the direction of US economic policy **(Figure E)**.

Indonesia, Malaysia, and Thailand experienced sustained increases in the share of foreign holdings in their respective LCY government bond markets in Q3 2016 despite a looming Federal Reserve rate hike **(Figure F)**. In Indonesia and Malaysia, foreign investors remained the largest investor group. The low global interest rate environment has attracted foreign fund flows into Indonesia's high-yield bond market. In Malaysia, foreign holdings were buoyed by relatively stable macroeconomic fundamentals, which rendered Malaysian bonds a relatively sound investment in the regional context.

In Thailand, the share of foreign holdings inched up amid expectations of a stable economy in Q3 2016. However, capital outflows from these bond markets were observed in November.

The prospective interest rate hike by the Federal Reserve is a major source of uncertainty for emerging East Asian bond markets (Box). Concerns over a Federal Reserve rate hike, which is widely expected before the end of the year, hover over nervous global financial markets. Although markets have largely priced in a December rate hike by the Federal Reserve and are expecting a steeper rise in policy rates than they did prior to the US election, the actual path will be data driven. A faster-than-expected pickup in inflation could still surprise markets.

The unexpected outcome of the US presidential election has created uncertainty in global financial markets. Although markets seemed to have settled down relatively quickly after a sharp initial reaction to the outcome of the US presidential election, volatility has returned in subsequent days. To a large extent, the volatility reflects widespread uncertainty about the future direction of US economic policy. Another question is whether the protectionist rhetoric voiced during the election campaign will be put into practice. While markets are anxiously waiting, it will take some time for the new administration to put together its economic policy team. Therefore, in the short term, a cloud of uncertainty will hang over global financial markets until details of US economic policy become clearer.

A "hard Brexit" would have serious repercussions. The initial bout of instability and volatility in global and regional financial markets wrought by the UK referendum on leaving the European Union, which has come to be known as "Brexit," passed quickly. However, the recent weakness of the pound sterling underlines the vulnerability of the UK's economy to Brexit **(Figure G)**. A "hard Brexit," a disorderly and disruptive departure of the UK from the European Union (e.g., if the UK were to lose access to the European common market), would have serious repercussions. Furthermore, Brexit's impact may include the erosion of London's status as a global financial center and Europe's main financial hub. Even though emerging East Asia's trade exposure to the UK is relatively limited, the region has substantial financial linkages and borrows heavily from UK-based banks **(Table B)**. Therefore, the adverse medium-term impacts of Brexit might be felt mainly through financial channels if,

Figure B: Credit Default Swap Spreads[a, b] (senior 5-year)

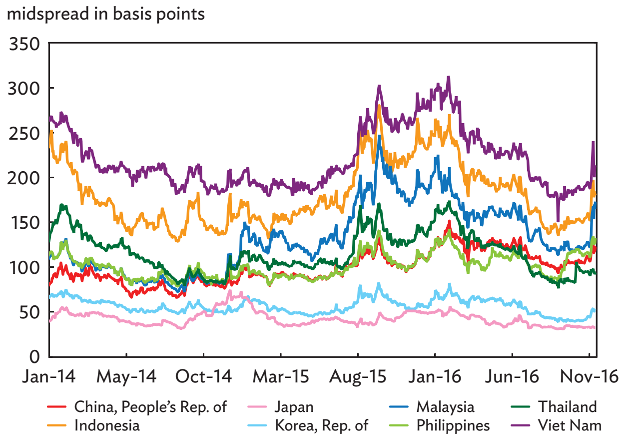


Figure C: Credit Default Swap Spreads for Select European Markets[a, b] (senior 5-year)

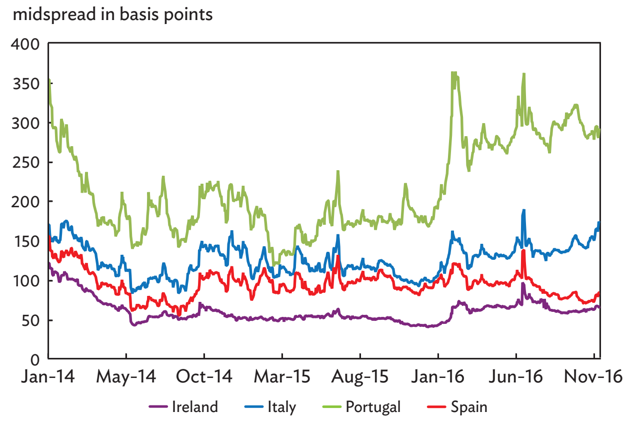


Figure D: United States Equity Volatility and Emerging Market Sovereign Bond Spreads[b] (% per annum)

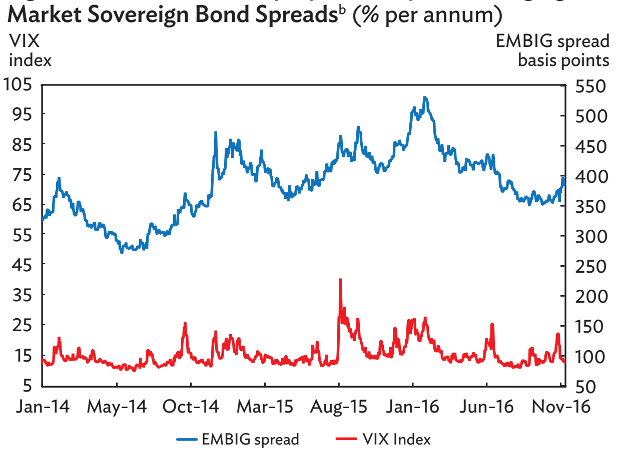


Figure F: JPMorgan Emerging Markets Bond Index Sovereign Stripped Spreads[a, b]

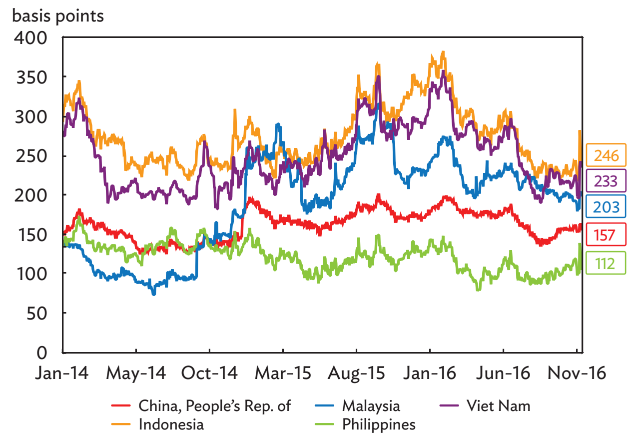


Figure F: Foreign Holdings of Local Currency Government Bonds in Select Asian Economies[c] (% of total)

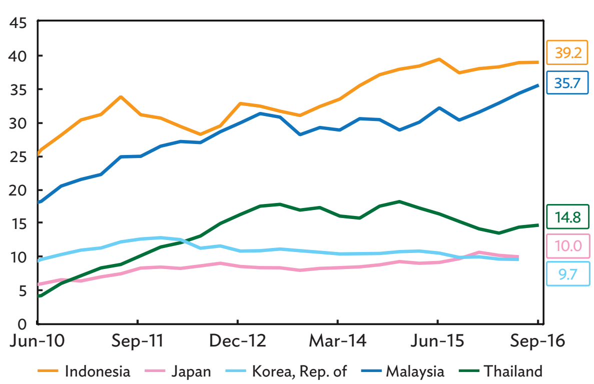
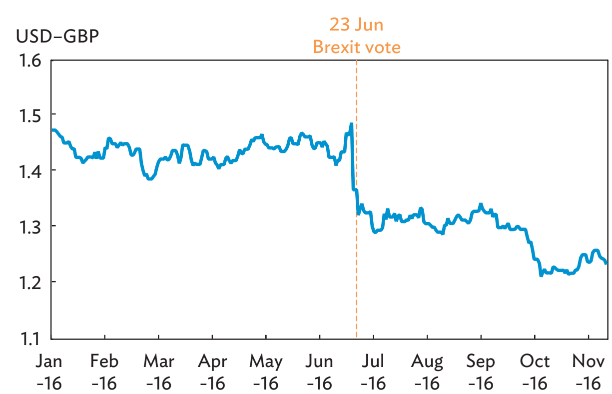


Figure G: Pound Sterling vs. the United States Dollar



EMBIG = Emerging Markets Bond Index Global, GBP = pound sterling, UK = United Kingdom, US = United States, USD = United States dollar, VIX = Chicago Board Options Exchange Volatility Index.

Notes:

[a] In United States dollar and based on sovereign bonds.

[b] Data as of 18 November 2016.

[c] Data as of end-September 2016 except for Japan and the Republic of Korea (end-June 2016).

Sources: *AsianBondsOnline* and Bloomberg LP.

Box: The Potential Impact of a United States Interest Rate Hike on Emerging Asia

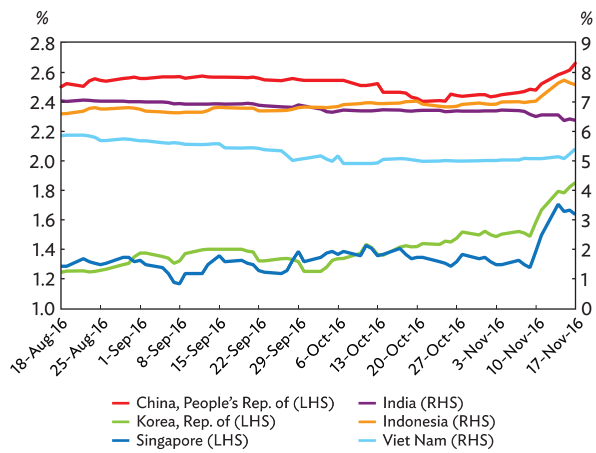
The United States (US) Federal Reserve has remained cautious since it initiated a new round of interest rate hikes at the December 2015 Federal Open Market Committee meeting. The steady recovery of the US economy, as evidenced most recently by the slight improvement in inflation and an uptick in average hourly earnings,[a] points to an about 90% probability of a federal funds rate hike of 25 basis points (bps) in December 2016.[b]

Despite looming uncertainties, including the economic policies of the new US administration, the strengthening US dollar has continued to exert downward pressure on major emerging Asian currencies through the middle of November **(Table B.1)**.[c] Since the middle of October, bond yields have risen in many emerging Asian markets **(Figure B.1a)**, while major stock indexes and sovereign bond yields have experienced increased volatility since November, partly in anticipation of rising US interest rates and the subsequent impact this could have on the global liquidity environment **(Figures B.1b, B.1c)**. Even so, the impact of a US rate hike on emerging Asia may be limited in the short term.

Divergence in global monetary policies may abate liquidity tension

Divergent business cycles are giving rise to divergent monetary policies in major industrial economies. The steady pickup in the US economy has been accompanied by a fragile recovery in the eurozone and Japan, and growth moderation in emerging markets.[d] It is unlikely that industrial economies with accommodative monetary policies will suddenly shift their stance.[e] Thus, the tightening of liquidity triggered by a US rate hike would be offset to some extent by the current accommodative global policy stance.

Figure B.1a: Yields on 5-Year Government Bonds in Major Emerging Asian Markets



LHS = left-hand side, RHS = right-hand side.
Source: *Wind Info.*

Table B.1: Exchange Rate Changes of Major Emerging Asian Currencies

Price change (%)	USD index	USD–CNY	USD–HKD	USD–INR	USD–IDR	USD–KRW	USD–MYR	USD–PHP	USD–SGD	USD–TWD	USD–THB	USD–VND
Last week	2.204	1.189	0.014	2.233	2.035	2.199	3.222	1.120	1.323	0.883	1.190	0.263
Last 2 weeks	3.910	1.779	0.031	1.824	2.567	3.185	4.813	1.589	2.370	1.271	1.573	0.377
Last 3 weeks	2.065	1.411	0.030	1.533	2.748	2.923	4.925	1.898	1.716	0.730	1.147	0.313
Last 4 weeks	2.674	2.052	(0.010)	1.752	2.969	4.293	5.026	2.150	2.068	1.072	1.596	0.436
Last two months	5.329	2.854	(0.001)	1.551	1.679	5.169	6.221	3.128	3.834	1.329	1.806	0.647
Last three months	7.189	3.650	0.049	1.672	2.066	6.205	9.864	6.137	5.748	1.458	2.630	1.116

( ) = negative, CNY = Chinese renminbi, HKD = Hong Kong dollar, INR = Indian rupee, IDR = Indonesian rupiah, KRW = Korean won, MYR = Malaysian ringgit, PHP = Philippine peso, SGD = Singapore dollar, TWD = NT dollar, THB = Thai baht, USD = United States dollar, VND = Vietnamese dong.
Note: Data as of 18 November 2016.
Source: *Wind Info.*

[a] For more details, please refer to http://www.bls.gov/news.release/pdf/cpi.pdf and http://www.bls.gov/news.release/empsit.nr0.htm

[b] The probability was 90.6% on 18 November 2016. For more details, please refer to http://www.cmegroup.com/trading/interest-rates/countdown-to-fomc.html

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

[d] The Asian Development Bank's forecast for aggregated growth in the US, eurozone, and Japan in 2016 was adjusted downward from 1.8% to 1.4% in the September edition of the *Asian Development Outlook*. Economic growth in Asia is projected to slow down from 5.9% in 2015 to 5.7% in 2016.

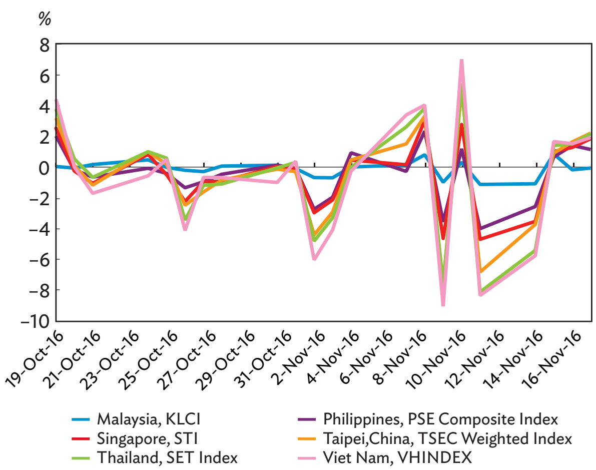
[e] The Bank of Japan launched a new form of monetary easing in September. At its policy meeting on 20 October the European Central Bank decided to maintain the current interest rate level and sustain its quantitative easing program until March 2017. In emerging Asia, the Reserve Bank of India trimmed the policy rate by 25 bps on 4 October and Bank Indonesia cut the 7-day reverse repurchase rate by 25 bps each on 22 September and 20 October.

continued on next page

Box: The Potential Impact of a United States Interest Rate Hike on Emerging Asia *continued*

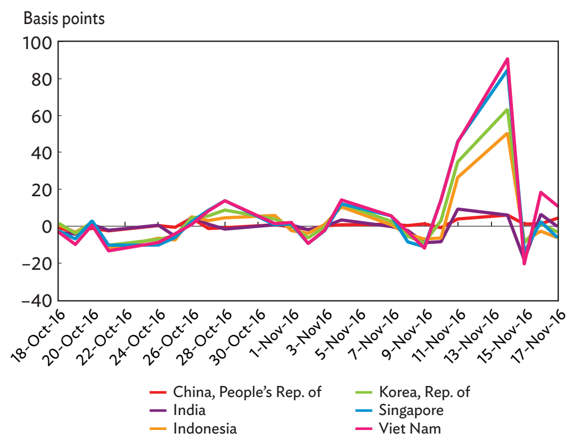
Figure B.1b: Daily Price Changes in Major Emerging Asian Stock Indexes

BSE = Bombay Stock Exchange, CSI = China Securities Index, JCI = Jakarta Composite Index, KOSPI = Korea Composite Stock Price Index.
Source: *Wind Info*.



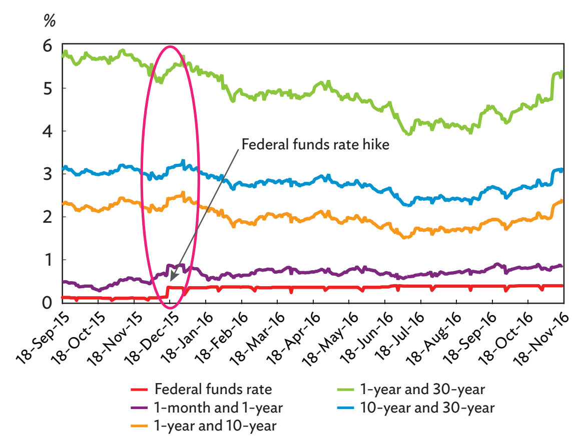
KLCI = Kuala Lumpur Composite Index, PSE = Philippine Stock Exchange, SET = Stock Exchange of Thailand, STI = Straits Times Index, TSEC = Taiwan Stock Exchange Corporation, VHINDEX = Vietnam Hanoi Stock Exchange Equity Index.
Source: *Wind Info*.

Figure B.1c: Daily Changes in 5-Year Government Bond Yields



Source: *Wind Info*.

Figure B.2: Yield Spreads of United States Treasuries



Source: *Wind Info*.

In addition, a hike in the federal funds rate by itself may only have a limited impact on long-term capital flows. Increases in short-term interest rates alone do not necessarily drive up medium- and long-term interest rates, which are more relevant to asset prices in capital markets and are more sensitive to improvements in economic outlook. Since the last US rate hike in December 2015, the term spreads between US Treasuries have narrowed, flattening the yield curve **(Figure B.2)**. These spreads have only started to increase since September 2016 when data releases implied a steady recovery for the US economy.

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Box: The Potential Impact of a United States Interest Rate Hike on Emerging Asia *continued*

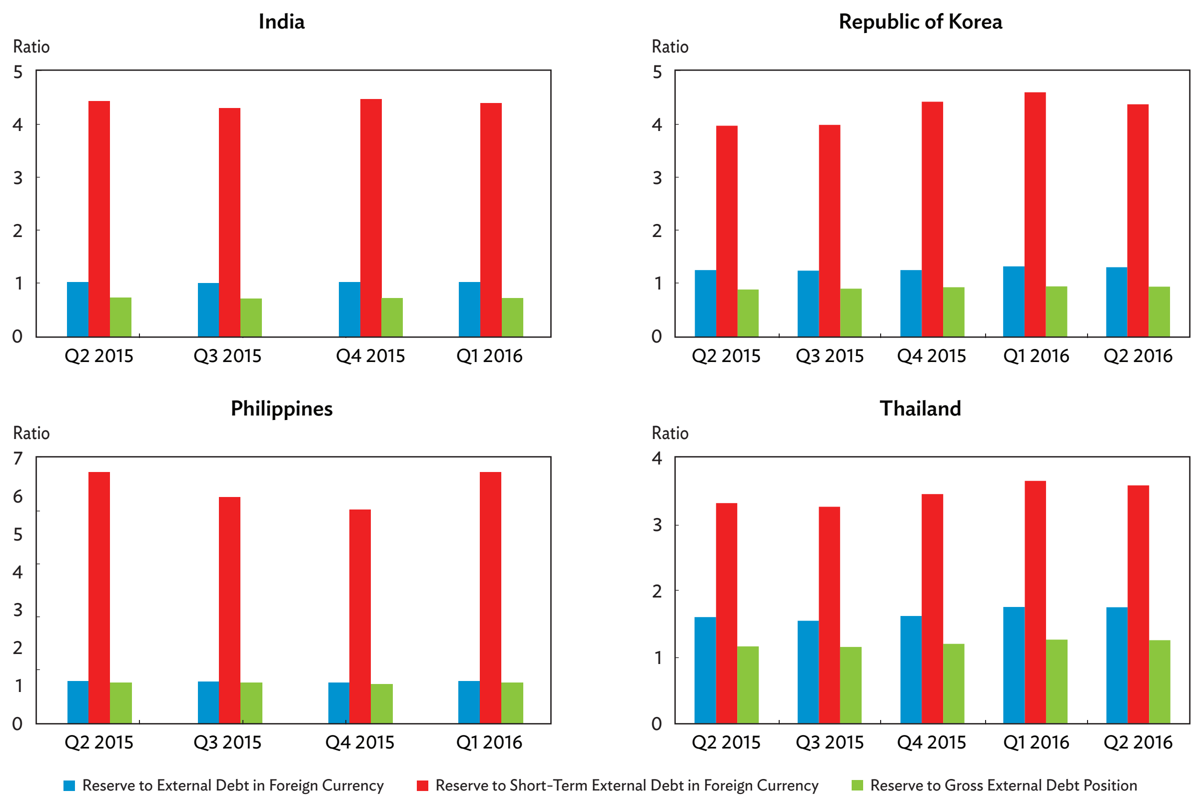
Emerging Asia could withstand the impacts of a US rate hike in the short term

Many emerging Asian economies have a high level of foreign reserves, which enhances their resilience to external shocks. Sufficient foreign reserves serve as a cushion against currency depreciation and net capital outflows by stabilizing the exchange rate and thus mitigating capital account shocks, such as exacerbated external debt burdens and the sudden withdrawal of capital. In many emerging Asian economies, the ratio of foreign reserves to short-term external debt comfortably exceeds the Greenspan–Guidotti adequacy threshold of 100%. The reserves-to-gross domestic product ratio and reserves-to-M2 ratio in many emerging Asian economies are also higher than the optimal level of 0.15 and the proposed range of 5%–10%, respectively, as suggested by the International Monetary Fund **(Figures B.3a, B.3b, B.3c)**.[f]

Leverage and financial stability: midterm outlook for Emerging Asia

A potential midterm risk in emerging Asia is the combination of growing leverage and moderating growth. The global low interest rate environment has encouraged borrowing. During the past 5 years, emerging Asia experienced a steady expansion of leverage, unlike the major industrial economies where leverage levels have remained stable **(Figures B.4a, B.4b)**. The private sector credit-to-gross domestic product gap, a key determinant of the countercyclical capital buffer and an early indicator of a banking crisis as identified by the Basel Committee, is much higher in emerging Asia than in major industrial economies, suggesting an accumulation of leverage.[g] Slowing growth, which might adversely affect corporate balance sheets, and high leverage levels could challenge the stability of regional banking systems, especially if US interest rates were to rise further in the future.

Figure B.3a: Foreign Reserves-to-External Debt Ratio in Selected Emerging Asian Markets



Q1 = first quarter, Q2 = second quarter, Q3 = third quarter, Q4 = fourth quarter.
Source: ADB calculations based on data from *Wind Info* and the World Bank's Quarterly External Debt Statistics.

[f] International Monetary Fund. 2011. Assessing Reserve Adequacy. IMF Policy Papers. Available at https://www.imf.org/external/np/pp/eng/2011/021411b.pdf
[g] For more details, please refer to http://www.bis.org/publ/bcbs187.pdf and http://www.bis.org/bcbs/publ/d339.pdf

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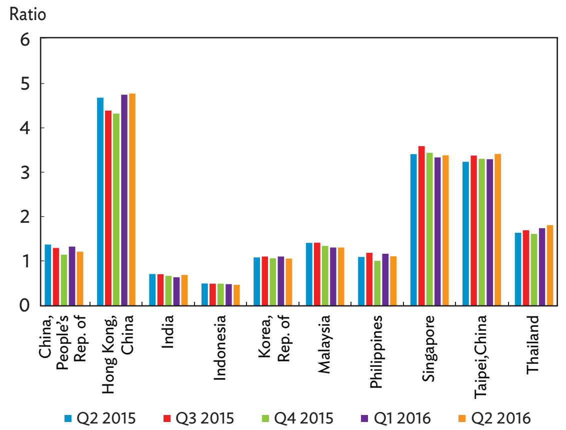
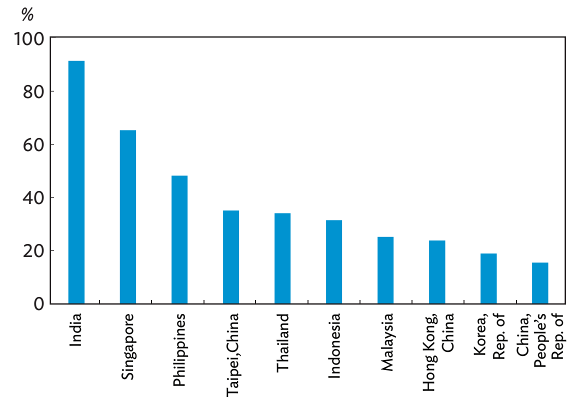
Box: The Potential Impact of a United States Interest Rate Hike on Emerging Asia *continued*

Figure B.3b: Foreign Reserve-to-Gross Domestic Product Ratio in Selected Emerging Asian Markets



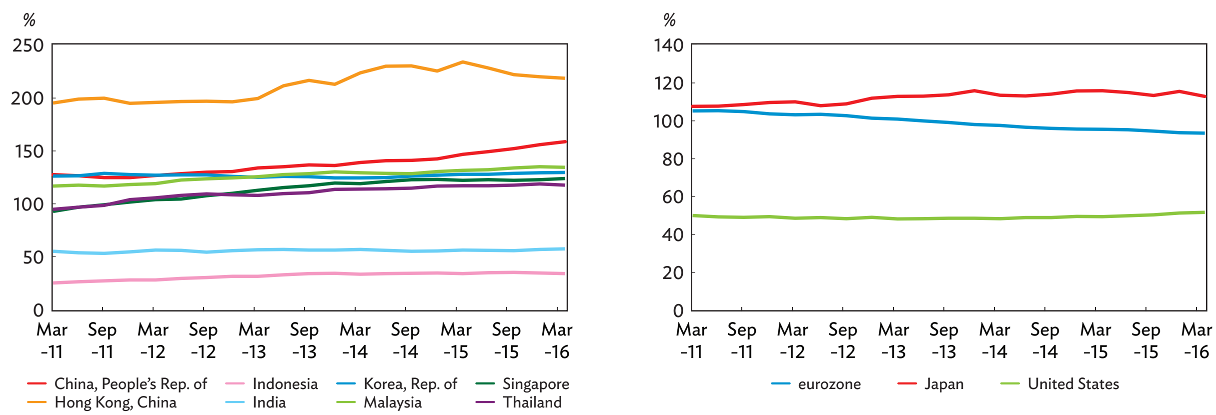
Source: Author's calculation based on data from Wind Info and World Bank's Quarterly External Debt Statistics.

Figure B.3c: Foreign Reserves-to-M2 Ratio in Selected Emerging Asian Markets (monthly averages between September 2015 and August 2016)



Source: Author's calculation based on data from Wind Info and World Bank's Quarterly External Debt Statistics.

Figure B.4a: Bank Private Nonfinancial Credit-to-Gross Domestic Product Ratios



Source: Bank for International Settlements.

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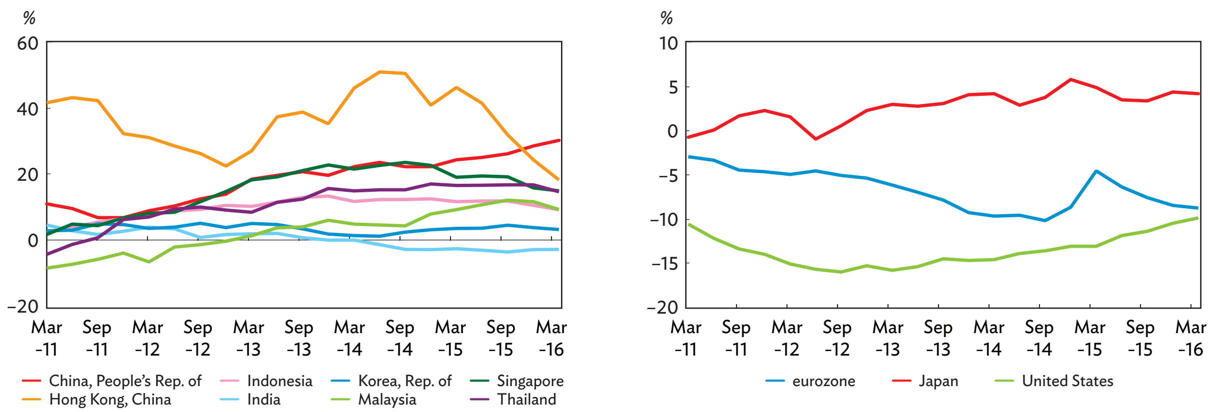
Box: The Potential Impact of a United States Interest Rate Hike on Emerging Asia *continued*

Figure B.4b: Private Nonfinancial Sector Credit (All Sectors)-to-Gross Domestic Product Gaps



Source: Bank for International Settlements.

Table B: Emerging Asia's Borrowings from Banks in the United Kingdom

Economy	Amount Outstanding (USD million)
China, People's Rep. of	140,909
Hong Kong, China	390,017
Singapore	101,288
Korea, Rep. of	59,348
India	58,657
Taipei,China	43,521
Malaysia	38,090
Indonesia	16,949
Thailand	12,156
Philippines	6,426
Total	**867,361**

Notes:
1. As of end-June 2016.
2. Data refer to total claims of banks with headquarters in the United Kingdom that reside in Asian economies.

Source: Bank for International Settlements. Table B4, Immediate counterparty basis, Consolidated banking statistics.

for example, UK banks were forced to withdraw from the region in order to strengthen balance sheets weakened by a deep domestic recession precipitated by Brexit.

In addition to the risks mentioned earlier, other medium-term risks lurk on the horizon. In light of fragile global financial market conditions, which have been exacerbated by the specter of higher US interest rates, **a generalized global risk aversion toward emerging markets cannot be ruled out**. While emerging East Asian markets possess generally solid fundamentals, emerging markets in other parts of the world with weaker fundamentals may buckle under the stress of higher US rates. Under current conditions, a crisis in a major emerging market could encourage global investors to pull back from all emerging markets, including fundamentally sound markets in emerging East Asia. **A worrying global trend, especially evident in advanced economies, is the rise of protectionism and economic nationalism.** One highly visible symptom of this trend is the emergence of anti-free trade, anti-immigrant sentiments among political forces in Europe and the US. The growing anti-globalization mood in many countries is likely to be detrimental to international trade and capital flows.

Bond Market Developments in the Third Quarter of 2016

Size and Composition

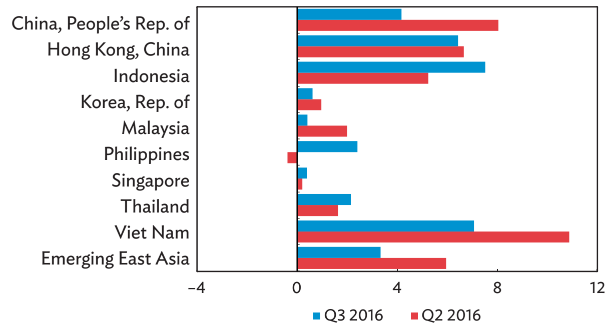
The local currency bond market in emerging East Asia expanded 3.3% quarter-on-quarter to reach USD10.4 trillion at the end of September.

Emerging East Asia's local currency (LCY) bond market continued to expand in the third quarter (Q3) of 2016, reaching a size of USD10,435 billion at the end of September, buoyed largely by growth in the government bond segment.[5] Growth moderated to 3.3% quarter-on-quarter (q-o-q) in Q3 2016 from 5.9% q-o-q in the second quarter (Q2) of 2016 **(Figure 1a)**. Positive but slower q-o-q growth rates were noted for all markets except those in Indonesia, the Philippines, Singapore, and Thailand. The fastest-growing bond markets on a q-o-q basis were in Indonesia (7.5%); Viet Nam (7.0%); and Hong Kong, China (6.4%).

In terms of absolute size, the largest markets were the People's Republic of China's (PRC) and the Republic of Korea's. These two markets accounted for 86.9% of the region's total bond stock at the end of September. Leading the region was the PRC, with outstanding bonds of USD7,178 billion at the end of September, which accounted for a 68.8% share of emerging East Asia's aggregate bond stock. Its q-o-q growth slowed to 4.2% in Q3 2016 because of only marginal gains in its corporate bond segment amid increased risk aversion following a number of corporate bond defaults this year, which shifted demand toward government bonds. The government bond market continued to post strong growth of 6.0% q-o-q in Q3 2016.

The Republic of Korea's LCY bond market, which reached a size of USD1,886 billon at the end of September, expanded 0.6% q-o-q in Q3 2016. Both the government and corporate bond segments posted marginal increases. Growth stemmed mainly from increases in the stock of corporate bonds, Korean Treasury Bills and Bonds, and industrial finance debentures. In contrast, the stock of central bank bonds slipped 1.0% q-o-q in Q3 2016.

Figure 1a: Growth of Local Currency Bond Markets in Q2 2016 and Q3 2016 (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 2016 currency exchange rates and do not include currency effects.
4. For Hong Kong, China, Q3 2016 corporate bonds outstanding based on *AsianBondsOnline* estimates. For Singapore, corporate bonds outstanding data based on *AsianBondsOnline* estimates.

Sources: People's Republic of China (*ChinaBond* and *Wind Info*); 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 LCY bond market in Thailand amounted to USD306 billion worth of bonds outstanding, up 2.1% q-o-q. Growth was driven largely by the corporate bond segment on higher bond sales. The government bond segment also contributed to the growth, although at a slower pace, on increases in its stock of Treasury bills and state-owned enterprise bonds. On the other hand, central bank bonds posted a q-o-q decline.

In Malaysia, the LCY bond market was broadly unchanged at a size of USD282 billion at the end of September on overall growth of 0.4% q-o-q. Growth came largely from the corporate bond segment, which recorded a 3.3% q-o-q hike. In contrast, the government bond stock contracted during the review period as redemptions of matured Malaysian Government Securities exceeded

[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.

new issuance. Also, central bank bills continued to fall in Q3 2016.

Malaysia's LCY bond market is largely dominated by *sukuk* (Islamic bonds), making it the largest *sukuk* market in the region. *Sukuk* accounted for 56.3% of the aggregate bond market at the end of September, including 42.0% of all government bonds and 73.3% of the corporate bond segment.

In Hong Kong, China, the LCY bond market expanded to reach a size of USD241 billion at the end of September on growth of 6.4% q-o-q. Growth came largely from increases in Exchange Fund Bills, Hong Kong Special Administrative Region bonds, and corporate bonds. On the other hand, the stock of Exchange Fund Notes slipped on a q-o-q basis as the Hong Kong Monetary Authority shifted issuance from notes with maturities of 2 years or more to Hong Kong Special Administrative Region bonds.

The LCY bond market in Singapore was almost unchanged in Q3 2016, reaching a size of USD231 billion at the end of September. Growth was largely driven by government bonds on increases in the stock of Monetary Authority of Singapore bills. Singapore Government Securities bonds declined during the review period as redemptions of maturing bonds exceeded new issuance. Corporate bonds, on the other hand, remained steady.

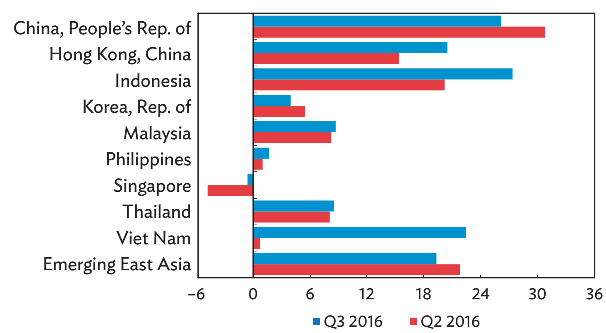
At the end of September, the outstanding amount of LCY bonds in Indonesia climbed to USD165 billion amid strong 7.5% q-o-q growth. The increase was driven largely by central government bonds, comprising Treasury bills and bonds. Declining borrowing costs, as Bank Indonesia engaged in monetary easing, and increased demand for government bonds provided leeway for the government to accept bids in excess of their targeted amount in order to finance a wider budget deficit. The revised state budget for 2016 projected a deficit equivalent to 2.4% of gross domestic product (GDP). However, the Ministry of Finance has recently indicated that the budget deficit in 2016 may reach an equivalent of 2.7% of GDP. To a lesser extent, increases in the stock of central bank bills, known as *Sertifikat* Bank Indonesia, and corporate bonds also contributed to q-o-q growth during the review period.

In the Philippines, outstanding LCY bonds reached USD99 billion at the end of Q3 2016, up 2.4% q-o-q. Growth stemmed from increases in the stock of Treasury bills and bonds and corporate bonds. In contrast, the stock of other government bonds, comprising the bonds of government agencies and state-owned corporations, remained unchanged.

By the end of September, Viet Nam's LCY bond market had expanded to a size of USD47 billion on growth of 7.0% q-o-q. Growth was led by government bonds, particularly State Bank of Vietnam bills, as the central bank purchased US dollars to prop up its foreign exchange reserves, and state-owned enterprise bonds and other bonds. Growth was also buoyed by corporate bonds on the back of new issuance by five corporate entities during the quarter in review.

The region's overall LCY bond market growth of 19.2% year-on-year (y-o-y) in Q3 2016 was a moderation from the 21.7% y-o-y hike posted in the previous quarter **(Figure 1b)**. On a y-o-y basis, the fastest-growing bond markets were in Viet Nam, Indonesia, and the PRC. These markets, together with Hong Kong, China's, posted double digit y-o-y growth in Q3 2016. All other markets registered y-o-y growth of between 1.6% and 8.6%, except

Figure 1b: Growth of Local Currency Bond Markets in Q2 2016 and Q3 2016 (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 2016 currency exchange rates and do not include currency effects.
4. For Hong Kong, China, Q3 2016 corporate bonds outstanding based on *AsianBondsOnline* estimates. For Singapore, corporate bonds outstanding data based on *AsianBondsOnline* estimates.

Sources: People's Republic of China (*ChinaBond* and *Wind Info*); 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).

for the LCY bond market of Singapore, which contracted marginally.

Emerging East Asia's LCY bond market remained largely dominated by government bonds in Q3 2016, representing a 63.9% share of the region's aggregate bond stock at the end of September **(Table 1)**. Total outstanding government bonds stood at USD6,666 billion at the end of September on growth of 4.8% q-o-q and 26.9% y-o-y.

In terms of size, the PRC remained home to the largest LCY government bond market in the region at the end of September at USD4,969 billion. In the second spot was the Republic of Korea with a government bond market size of USD777 billion, followed by Thailand with USD226 billion worth of bonds outstanding. The government bond markets of Hong Kong, China; Indonesia; Malaysia; and Singapore were broadly comparable with one another in terms of size; each had outstanding bonds of between USD134 billion and USD153 billion at the end of September. The smallest government bond markets in the region were those of the Philippines and Viet Nam, which both had outstanding bonds of less than USD100 billion.

At the end of September, the region's LCY corporate bond market reached a size of USD3,769 billion, up 0.9% q-o-q and 7.8% y-o-y. The share of corporate bonds was smaller than that of government bonds, accounting for 36.1% of the region's total bond stock. The PRC was also home to the largest corporate bond market in the region in Q3 2016, with outstanding bonds of USD2,209 billion. This was followed by the Republic of Korea at USD1,109 billion. These two markets together accounted for 88.0% of emerging East Asia's corporate bond market.

The size of emerging East Asia's LCY bond market as a share of GDP climbed to 69.9% in Q3 2016, up from 68.2% in Q2 2016 **(Table 2)**. Much of this expansion came from the government bond market as its share of GDP rose by more than 1 percentage point to 44.6% in Q3 2016 from 43.1% in Q2 2016. The share of corporate bonds to GDP was broadly unchanged at 25.2%. As a share of GDP, the largest markets were those of the Republic of Korea and Malaysia with shares of 136.3% and 96.9%, respectively.

Foreign investors' holdings in emerging East Asia's LCY government bond markets continued to rise.

Foreign investors' holdings of emerging East Asia's LCY government bonds remained strong at the end of September amid a global low interest rate environment and the US holding off raising interest rates. At the end of September, foreign holdings' share of LCY government bonds had risen in most markets for which data are available **(Figure 2)**. Nonresidents increased their holdings of Indonesian, Malaysian, and Thai government bonds during the review period.

The largest increase came from Malaysia, where the holdings of foreign investors in the LCY government bond market rose to 35.7% at the end of September from 34.5% at the end of June. The increase was largely due to positive economic sentiments as Malaysia's economy grew 4.3% y-o-y in Q3 2016.

Thailand was the second-biggest gainer, with its share of foreign holdings rising to 14.8% in September from 14.5% in June amid expectations of a stable economy in Q3 2016. The Thai economy's GDP growth rate accelerated to 3.5% y-o-y in Q2 2016 from 3.2% y-o-y in the previous quarter.

The foreign holdings' share of government bonds in Indonesia grew slightly to 39.2% at the end of September from 39.1% at the end of June. Foreign investors continue to be attracted to Indonesian yields, which are the highest in emerging East Asia.

In the Republic of Korea, the share of foreign holdings held steady at 9.7% between the end of March and the end of June.

In contrast to government bonds, the share of foreign holdings in the LCY corporate bond market declined in Indonesia in Q2 2016, falling to 6.7% from 7.4% between the end of March and the end of June **(Figure 3)**. This continued a trend that has been in place since the share of foreign holdings in the Indonesian LCY corporate bond market peaked at 10.5% in March 2015.

The share of foreign holdings in the Republic of Korea's corporate bond market held steady at a marginal 0.1% during Q2 2016.

Table 1: Size and Composition of Local Currency Bond Markets

	Q3 2015		Q2 2016		Q3 2016		Growth Rate (LCY-base %)				Growth Rate (USD-base %)			
	Amount (USD billion)	% share	Amount (USD billion)	% share	Amount (USD billion)	% share	Q3 2015		Q3 2016		Q3 2015		Q3 2016	
							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	5,978	100.0	6,916	100.0	7,178	100.0	8.0	19.2	4.2	26.0	5.3	15.2	3.8	20.1
Government	3,862	64.6	4,706	68.0	4,969	69.2	9.9	20.6	6.0	35.1	7.2	16.5	5.6	28.7
Corporate	2,116	35.4	2,210	32.0	2,209	30.8	4.7	16.8	0.3	9.5	2.1	12.8	(0.1)	4.4
Hong Kong, China														
Total	200	100.0	226	100.0	241	100.0	1.9	2.9	6.4	20.4	1.9	3.1	6.4	20.3
Government	113	56.5	131	57.7	138	57.2	3.6	2.4	5.4	21.8	3.7	2.6	5.4	21.7
Corporate	87	43.5	96	42.3	103	42.8	(0.3)	3.6	7.8	18.5	(0.3)	3.8	7.8	18.4
Indonesia														
Total	115	100.0	152	100.0	165	100.0	1.5	12.4	7.5	27.2	(7.6)	(6.5)	8.9	42.9
Government	98	85.3	131	86.5	143	86.7	0.9	12.3	7.7	29.4	(8.1)	(6.6)	9.1	45.3
Corporate	17	14.7	20	13.5	22	13.3	4.4	13.4	6.2	14.9	(4.9)	(5.7)	7.5	29.0
Korea, Rep. of														
Total	1,687	100.0	1,792	100.0	1,886	100.0	2.1	10.5	0.6	3.9	(3.9)	(1.7)	5.2	11.8
Government	686	40.7	741	41.3	777	41.2	1.0	14.3	0.3	5.2	(5.0)	1.8	4.9	13.2
Corporate	1,000	59.3	1,051	58.7	1,109	58.8	2.9	7.9	0.8	3.0	(3.2)	(3.9)	5.5	10.8
Malaysia														
Total	245	100.0	289	100.0	282	100.0	(0.01)	(0.3)	0.4	8.6	(14.2)	(25.6)	(2.3)	15.3
Government	137	55.9	160	55.4	153	54.1	(1.0)	(4.9)	(1.9)	4.9	(15.0)	(29.0)	(4.5)	11.5
Corporate	108	44.1	129	44.6	130	45.9	1.3	6.1	3.3	13.3	(13.1)	(20.8)	0.6	20.3
Philippines														
Total	101	100.0	99	100.0	99	100.0	1.7	2.8	2.4	1.6	(1.8)	(1.1)	(0.4)	(2.0)
Government	84	83.4	82	82.8	82	82.4	1.1	2.4	1.9	0.4	(2.4)	(1.4)	(0.8)	(3.2)
Corporate	17	16.6	17	17.2	17	17.6	4.7	4.8	4.6	7.7	1.1	0.8	1.8	3.9
Singapore														
Total	223	100.0	233	100.0	231	100.0	(3.9)	(1.1)	0.4	(0.7)	(8.9)	(11.3)	(0.8)	3.6
Government	132	59.1	135	57.8	134	57.9	(5.0)	(3.6)	0.6	(2.6)	(10.0)	(13.6)	(0.6)	1.7
Corporate	91	40.9	98	42.2	97	42.1	(2.2)	2.9	0.1	2.0	(7.4)	(7.7)	(1.1)	6.5
Thailand														
Total	269	100.0	295	100.0	306	100.0	1.7	6.5	2.1	8.4	(5.5)	(5.0)	3.7	14.0
Government	201	74.9	220	74.4	226	73.8	0.2	5.7	1.3	6.9	(6.9)	(5.7)	2.8	12.4
Corporate	68	25.1	75	25.6	80	26.2	6.5	8.9	4.6	13.0	(1.0)	(2.9)	6.2	18.8
Viet Nam														
Total	38	100.0	43	100.0	47	100.0	(11.9)	(13.3)	7.0	22.3	(14.4)	(18.1)	7.1	23.3
Government	37	96.8	42	96.0	45	96.1	(12.5)	(14.6)	7.2	21.4	(15.0)	(19.4)	7.2	22.4
Corporate	1	3.2	2	4.0	2	3.9	9.4	67.0	3.4	49.8	6.3	57.7	3.4	51.0
Emerging East Asia														
Total	8,856	100.0	10,046	100.0	10,435	100.0	5.5	14.7	3.3	19.2	1.6	7.5	3.9	17.8
Government	5,351	60.4	6,347	63.2	6,666	63.9	6.7	16.1	4.8	26.9	3.0	9.3	5.0	24.6
Corporate	3,505	39.6	3,699	36.8	3,769	36.1	3.7	12.6	0.9	7.8	(0.4)	4.9	1.9	7.5
Japan														
Total	9,125	100.0	10,812	100.0	11,110	100.0	0.6	2.5	0.9	2.9	2.8	(6.3)	2.8	21.8
Government	8,464	92.8	10,062	93.1	10,327	93.0	0.7	2.9	0.8	3.2	2.9	(5.9)	2.6	22.0
Corporate	661	7.2	749	6.9	783	7.0	(0.9)	(2.7)	2.6	0.1	1.3	(11.0)	4.4	18.4

( ) = 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 2016 corporate bonds outstanding based on *AsianBondsOnline* estimates. For Singapore, corporate bonds outstanding data based on *AsianBondsOnline* estimates.
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 based on 30 September 2016 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 Info*); 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).

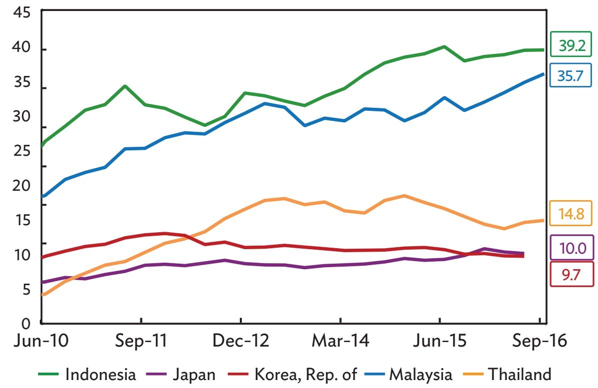
Table 2: Size and Composition of Local Currency Bond Markets (% of GDP)

	Q3 2015	Q2 2016	Q3 2016
China, People's Rep. of			
Total	56.3	64.9	66.3
Government	36.4	44.2	45.9
Corporate	19.9	20.7	20.4
Hong Kong, China			
Total	65.5	72.0	76.0
Government	37.0	41.6	43.4
Corporate	28.5	30.5	32.6
Indonesia			
Total	15.0	16.7	17.7
Government	12.8	14.5	15.3
Corporate	2.2	2.3	2.4
Korea, Rep. of			
Total	129.9	129.5	136.3
Government	52.9	53.5	56.2
Corporate	77.0	76.0	80.1
Malaysia			
Total	94.1	98.1	96.9
Government	52.7	54.3	52.4
Corporate	41.5	43.8	44.5
Philippines			
Total	36.0	33.9	34.0
Government	30.0	28.1	28.0
Corporate	6.0	5.8	6.0
Singapore			
Total	79.1	78.3	77.7
Government	46.7	45.3	45.0
Corporate	32.4	33.0	32.7
Thailand			
Total	72.8	75.0	77.8
Government	54.5	55.8	57.4
Corporate	18.3	19.2	20.4
Viet Nam			
Total	20.6	22.6	23.7
Government	20.0	21.7	22.8
Corporate	0.7	0.9	0.9
Emerging East Asia			
Total	61.7	68.2	69.9
Government	37.3	43.1	44.6
Corporate	24.4	25.1	25.2
Japan			
Total	220.3	222.1	223.7
Government	204.4	206.7	207.9
Corporate	16.0	15.4	15.8

GDP = gross domestic product, Q2 = second quarter, Q3 = third quarter.
Notes:
1. Data for GDP is from CEIC. Q3 2016 GDP figures carried over from Q2 2016 for the Republic of Korea, Singapore, and Thailand.
2. For Hong Kong, China, Q3 2016 corporate bonds outstanding based on *AsianBondsOnline* estimates. For Singapore, corporate bonds outstanding data based on *AsianBondsOnline* estimates.

Sources: People's Republic of China (*ChinaBond* and *Wind Info*); 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).

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



Note: Data as of end-September 2016 except for Japan and the Republic of Korea (end-June 2016).
Source: *AsianBondsOnline*.

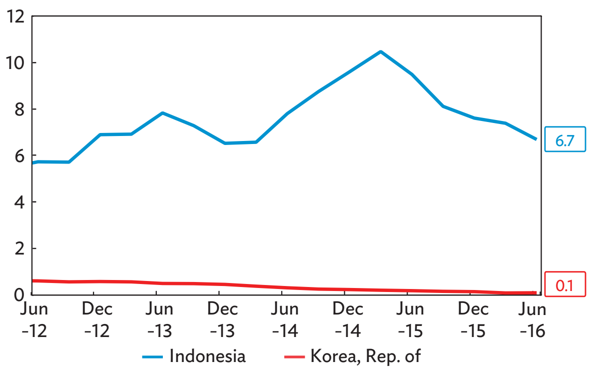
Emerging East Asia recorded positive net foreign capital flows in Q3 2016.

Consistent with the foreign holdings data, foreign bond inflows were positive in Q3 2016, albeit weaker when compared with Q2 2016. The only exception was Indonesia, which recorded higher bond inflows during the quarter. On the other hand, the Republic of Korea posted a net capital outflow during the review period **(Figure 4)**. However, some degree of reversal is expected given current market conditions that include investors shifting to safe-haven assets.

Given its relatively high interest rates, Indonesia continued to attract foreign capital in Q3 2016, when capital inflows in Indonesia's bond market reached USD3.1 billion, up from USD2.9 billion in the prior quarter. While capital inflows in Thailand's bond market fell to USD3.2 billion in Q3 2016 from USD3.9 billion in Q2 2016, these were still the region's largest inflows during the review period among all markets for which data are available.

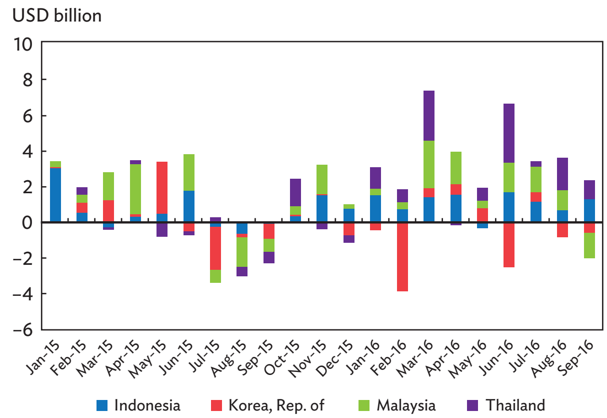
Malaysia's net capital inflows moderated to USD1.1 billion in Q3 2016 from USD3.9 billion in Q2 2016 due to outflows in September, which were partly due to maturing Malaysian Government Securities as well as investors' risk aversion over concerns that the Organization of the

Figure 3: Foreign Holdings of Local Currency Corporate Bonds in Indonesia and the Republic of Korea
(% of total)



Note: For Indonesia, data as of 1 July 2016. For the Republic of Korea, data as of end-June 2016.
Sources: Based on data from Otoritas Jasa Keuangan and the Bank of Korea.

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



Notes:
1. The Republic of Korea and Thailand provides 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 2016.
3. Figures were computed based on 30 September 2016 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.

Petroleum Exporting Countries would not be able to maintain supply cuts, putting downward pressure on oil prices.

The Republic of Korea continued to experience net foreign bond outflows in Q3 2016, which totaled USD0.9 billion and were down slightly from USD1.1 billion in Q2 2016. According to the Financial Supervisory Service, the outflows in the Republic of Korea stemmed mainly from maturing central bank bonds, while foreign investment in Treasury bond continued to be steady. In contrast, the Financial Supervisory Service reported strong equity inflows, suggesting that some investors may be shifting from bonds to equities.

Emerging East Asia's local currency bond issuance was mixed in the third quarter of 2016.

Emerging East Asia's LCY bond issuance exhibited a mixed performance in Q3 2016 as total issuance of USD1,167 billion was down from USD1,323 billion in Q2 2016 but up from USD1,104 billion in Q3 2015 **(Table 3)**. The q-o-q contraction was the result of negative growth in LCY bond sales in the PRC and the Republic of Korea, while the y-o-y increase stemmed from issuance growth in the PRC; Hong Kong, China; Indonesia; Malaysia; Thailand; and Viet Nam.

The PRC led the region in LCY bond issuance in Q3 2016 with USD717 billion, which accounted for 61.4% of the regional total. Its issuance trends were mixed in Q3 2016, with a decline from the previous quarter but a gain from Q3 2015. The y-o-y increase was mainly induced by changes in the issuance of Treasury and other government bonds. The q-o-q decline was driven by a slowdown in the issuance of local government bonds, which totaled CNY1.5 trillion in Q3 2016 versus CNY2.6 trillion in Q2 2016. The slowdown was partly due to the quota for the swap program set by the government of CNY15 trillion until 2017. Since 2015, a total of CNY8.9 trillion had been issued through the end of Q3 2016.

Hong Kong, China's LCY bond issuance totaled USD107 billion in Q3 2016, up on both a q-o-q and y-o-y basis due to increased bond sales by the Hong Kong Monetary Authority in response to demand from banks. Low Hong Kong dollar interest rates also led to more active bond issuance from the corporate sector and contributed to the y-o-y growth.

In the Republic of Korea, LCY bond issuance fell on both q-o-q and y-o-y basis in Q3 2016 to level off at USD144 billion. Issuance was down for Korea Treasury Bonds, Monetary Stabilization Bonds, and corporate bonds.

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

	Q3 2015		Q2 2016		Q3 2016		Growth Rate (LCY-base %)		Growth Rate (USD-base %)	
							Q3 2016		Q3 2016	
	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	692	100.0	894	100.0	717	100.0	(19.5)	8.8	(19.8)	3.6
Government	432	62.5	685	76.6	491	68.5	(28.0)	19.2	(28.3)	13.6
Central Bank	0	0.0	0	0.0	0	0.0	–	–	–	–
Treasury and Other Govt.	432	62.5	685	76.6	491	68.5	(28.0)	19.2	(28.3)	13.6
Corporate	259	37.5	209	23.4	226	31.5	8.3	(8.7)	7.9	(13.1)
Hong Kong, China										
Total	84	100.0	98	100.0	107	100.0	9.0	27.1	9.0	27.0
Government	79	93.7	82	83.7	91	85.1	10.7	15.4	10.8	15.3
Central Bank	77	92.1	80	81.5	90	84.5	12.9	16.6	13.0	16.5
Treasury and Other Govt.	1	1.6	2	2.2	1	0.6	(70.9)	(54.7)	(70.9)	(54.8)
Corporate	5	6.3	16	16.3	16	14.9	0.0	201.3	0.03	201.1
Indonesia										
Total	8	100.0	14	100.0	15	100.0	7.1	74.6	8.5	96.2
Government	6	85.4	11	81.7	13	85.8	12.5	75.5	13.9	97.2
Central Bank	1	18.9	2	16.0	4	24.2	61.4	123.0	63.5	150.5
Treasury and Other Govt.	5	66.5	9	65.7	9	61.6	0.5	62.0	1.8	82.0
Corporate	1	14.6	2	18.3	2	14.2	(17.1)	69.4	(16.0)	90.3
Korea, Rep. of										
Total	156	100.0	154	100.0	144	100.0	(10.7)	(14.2)	(6.6)	(7.6)
Government	71	45.6	76	49.0	70	48.5	(11.6)	(8.6)	(7.5)	(1.6)
Central Bank	36	23.2	40	25.9	35	24.2	(16.6)	(10.7)	(12.7)	(3.9)
Treasury and Other Govt.	35	22.3	36	23.2	35	24.4	(6.0)	(6.4)	(1.7)	0.8
Corporate	85	54.4	78	51.0	74	51.5	(9.8)	(18.9)	(5.7)	(12.7)
Malaysia										
Total	15	100.0	15	100.0	16	100.0	6.4	2.2	3.6	8.5
Government	9	62.5	7	45.3	6	39.9	(6.2)	(34.7)	(8.7)	(30.7)
Central Bank	3	20.9	0.4	2.8	1	6.0	128.6	(70.6)	122.5	(68.8)
Treasury and Other Govt.	6	41.6	7	42.5	5	33.9	(15.1)	(16.7)	(17.3)	(11.5)
Corporate	6	37.5	8	54.7	10	60.1	16.9	63.6	13.8	73.7
Philippines										
Total	10	100.0	4	100.0	8	100.0	103.0	(17.3)	97.6	(20.2)
Government	9	90.8	4	96.2	7	87.9	85.6	(19.9)	80.6	(22.8)
Central Bank	0	0.0	0	0.0	0	0.0	–	–	–	–
Treasury and Other Govt.	9	90.8	4	100.0	7	87.9	85.6	(19.9)	80.6	(22.8)
Corporate	0.9	9.2	0.1	3.8	0.9	12.1	540.7	9.4	523.5	5.5
Singapore										
Total	63	100.0	63	100.0	65	100.0	4.3	(1.2)	3.1	3.1
Government	61	95.9	60	94.6	62	95.4	5.1	(1.7)	3.9	2.5
Central Bank	58	91.6	52	81.8	58	89.2	13.6	(3.8)	12.3	0.4
Treasury and Other Govt.	3	4.3	8	12.8	4	6.2	(49.5)	41.0	(50.1)	47.2
Corporate	3	4.1	3	5.4	3	4.6	(10.1)	12.6	(11.2)	17.5
Thailand										
Total	62	100.0	74	100.0	78	100.0	3.6	19.2	5.2	25.3
Government	51	81.6	63	85.4	64	82.5	0.1	20.6	1.7	26.8
Central Bank	40	65.2	54	73.5	55	70.6	(0.5)	29.2	1.1	35.9
Treasury and Other Govt.	10	16.4	9	11.9	9	11.9	3.8	(13.5)	5.4	(9.0)
Corporate	11	18.4	11	14.6	14	17.5	23.6	13.0	25.5	18.8

continued on next page

Table 3 *continued*

	Q3 2015		Q2 2016		Q3 2016		Growth Rate (LCY-base %)		Growth Rate (USD-base %)	
							Q3 2016		Q3 2016	
	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	15	100.0	7	100.0	18	100.0	173.8	22.2	173.9	23.2
Government	15	98.7	7	98.7	18	99.7	176.5	23.4	176.6	24.4
Central Bank	14	92.2	1	21.3	15	83.6	975.2	10.8	975.6	11.7
Treasury and Other Govt.	1	6.5	5	77.4	3	16.1	(43.1)	202.2	(43.1)	204.6
Corporate	0.2	1.3	0.1	1.3	0.1	0.3	(29.4)	(67.0)	(29.4)	(66.7)
Emerging East Asia										
Total	1,104	100.0	1,323	100.0	1,167	100.0	(12.0)	7.0	(11.8)	5.7
Government	732	66.4	994	75.1	822	70.4	(17.4)	13.6	(17.3)	12.3
Central Bank	230	20.8	230	17.4	258	22.1	11.2	8.4	12.2	12.0
Treasury and Other Govt.	502	45.5	764	57.8	564	48.4	(26.0)	16.2	(26.1)	12.4
Corporate	371	33.6	329	24.9	345	29.6	4.0	(5.9)	4.8	(7.1)
Japan										
Total	407	100.0	469	100.0	509	100.0	6.6	5.6	8.6	24.9
Government	383	94.1	440	94.0	454	89.3	1.3	0.2	3.2	18.5
Central Bank	0	0.0	0	0.0	0	0.0	–	–	–	–
Treasury and Other Govt.	383	94.1	440	94.0	454	89.3	1.3	0.2	3.2	18.5
Corporate	24	5.9	28	6.0	55	10.7	89.7	92.6	93.2	127.8

( ) = 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 2016 corporate bond issuance carried over from Q2 2016.
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 2016 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).

In the six Association of Southeast Asian Nations (ASEAN) member countries—Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam—combined LCY bond sales rose to USD200 billion in Q3 2016 from USD177 billion in Q2 2016 and USD172 billion in Q3 2015.

Indonesia's LCY bond issuance increased on both a q-o-q and y-o-y basis in Q3 2016 to reach USD15 billion, with the q-o-q uptick largely attributed to more active bond issuance from Bank Indonesia and the y-o-y hike ascribed to larger bond sales from Bank Indonesia, the central government, and the corporate sector.

LCY bond issuance in Malaysia stood at USD16 billion in Q3 2016, higher on both a q-o-q and y-o-y basis, mainly on the back of increased corporate bond issues, which were dominated by *sukuk* such as Islamic medium-term notes.

In the Philippines, Q3 2016 LCY bond sales worth USD8 billion were up from Q2 2016 levels due to larger q-o-q issuance of Treasury bills and bonds and corporate bonds, but down from Q3 2015 issuance due to fewer Treasury bond auctions.

Singapore's USD65 billion worth of LCY bond issues in Q3 2016 mostly comprised Monetary Authority of Singapore bills. LCY bond issuance in Q3 2016 was up from the previous quarter but down from the same quarter in the previous year.

LCY bond issuance in Thailand climbed on both a q-o-q and y-o-y basis in Q3 2016, leveling off at USD78 billion at the end of September. The increase from the previous quarter came on the back of greater issuance of central government and corporate securities, while the y-o-y hike came from increased sales of Bank of Thailand bills and bonds and corporate securities.

Viet Nam's LCY bond issuance expanded to USD18 billion in Q3 2016, with the q-o-q growth much larger than the y-o-y increase. The relatively sharp q-o-q hike was mainly the result of a surge in State Bank of Vietnam bond volumes, while the relatively modest y-o-y rise was due to increased issuance of State Bank of Vietnam bonds and Treasury bonds.

Intra-emerging East Asian LCY bond issuance fell 23.7% y-o-y but soared 55.4% q-o-q in Q3 2016, leveling off at USD2.6 billion. Two PRC-based financial institutions sold HKD-denominated bonds worth HKD576 million in Q3 2016. In Hong Kong, China, eight institutions raised a combined CNY11 billion worth of renminbi-denominated bonds. Korea Eximbank raised USD157 million from a multitranche sale of renminbi- and HKD-denominated bonds. Three Malaysian financial institutions sold renminbi- and HKD-denominated bonds totaling USD191 million. In Singapore, five financial institutions issued HKD-denominated bonds amounting to HKD3.5 billion. In Thailand, CIMB Thai Bank sold MYR570 million (USD138 million) worth of 10-year MYR-denominated bonds in Q3 2016.

Emerging East Asia G3 currency bond issuance picked up in January–September.

Emerging East Asia's G3 currency bond issuance in the first 9 months of 2016 stood at USD154 billion, or the equivalent of 84% of the full-year 2015 total **(Table 4)**.[6] The January–September total was up 9.4% y-o-y, fueled by larger bond sales in the PRC; Hong Kong, China; Indonesia; the Republic of Korea; Singapore; and Thailand; as well as new issuance in the Lao People's Democratic Republic (Lao PDR). The US dollar remained the most preferred G3 currency among emerging East Asian issuers, accounting for 90% of the regional total in January–September. The euro and Japanese yen comprised 9% and 1%, respectively.

The PRC continued to dominate the region's G3 currency bond market with issues amounting to USD87.2 billion, which accounted for 57% of the regional total in January–September. The PRC total was 8.9% higher than in the first 9 months of 2015. The largest PRC issuer of G3 currency bonds in the period under review was China Development Bank, which sold USD- and euro-denominated bonds totaling USD6.4 billion. The single-biggest G3 currency bond issue was that of China Cinda Asset Management, which sold a USD3.2 billion perpetual bond in September.

The Republic of Korea remained the second-largest source of G3 currency bonds in emerging East Asia, accumulating USD20.9 billion in total G3 issuance in January–September, which was up 30.3% y-o-y and represented the equivalent of 90% of the full-year 2015 total. Banks were the dominant issuer group, led by Korea Eximbank and Korea Development Bank, which issued G3 currency bonds totaling USD5.2 billion and USD3.1 billion, respectively.

Hong Kong, China's G3 currency bond issuance between 1 January and 30 September totaled USD17.7 billion, the third-largest amount in the region and 24.5% larger on a y-o-y basis. CK Hutchison was the largest issuer of G3 currency bonds in Hong Kong, China, selling a total of USD2.2 billion, which included a EUR1.35 billion 7-year bond.

G3 currency bond issuance from ASEAN-based entities during the first 9 months of the year reached USD28.3 billion, which was down 7.3% y-o-y. Indonesia was the largest source of G3 currency bonds among ASEAN members, tallying USD12.7 billion in new issuance, which was 8.9% larger on a y-o-y basis, led by the combined USD11.7 billion worth of G3 currency bond sales from the central government and central bank. EDL Generation, an electricity producer in the Lao PDR, raised USD312 million from a triple tranche USD-denominated bond offering in Thailand in September. Malaysia's January–September G3 currency bond sales were valued at USD4.1 billion, down 49.0% y-o-y. Sales were led by the central government, which issued a USD1.5 billion dual-tranche USD-denominated *sukuk* in April. The Philippines' only G3 currency bond issue during the review period was a USD2 billion 25-sovereign bond issued in March, which represented a decline of 49.2% y-o-y. G3 currency bonds issued in Singapore between 1 January and 30 September totaled USD8.6 billion, up 26.2% y-o-y, buoyed by vibrant issuance from financial institutions such as United Overseas Bank, which sold euro- and USD-denominated bonds totaling USD2.2 billion. Three corporate entities from Thailand issued USD-denominated bonds totaling USD675 million in the period under review.

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

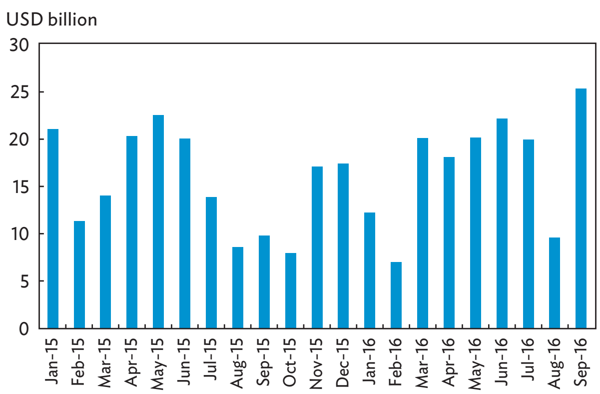
Table 4: G3 Currency Bond Issuance

2015			1 January–30 September 2016		
Issuer	Amount (USD million)	Issue Date	Issuer	Amount (USD million)	Issue Date
China, People's Rep. of	**103,527**		**China, People's Rep. of**	**87,152**	
China Construction Bank 4.65% Perpetual	3,050	16-Dec-15	China Cinda Asset Management 4.45% Perpetual	3,200	30-Sep-16
Sinopec 2.5% 2020	2,500	28-Apr-15	Proven Honour Capital 4.125% 2026	2,000	6-May-16
Bank of Communications 5% Perpetual	2,450	29-Jul-15	Sinopec 2% 2021	1,300	29-Sep-16
China Construction Bank 3.875% 2025	2,000	13-May-15	Export–Import Bank of China 2% 2021	1,250	26-Apr-16
CNOOC Finance 3.5% 2025	2,000	5-May-15	China Development Bank 0.5% 2021	1,124	1-Jun-16
ICBC 4.875% 2025	2,000	21-Sep-15	China Development Bank 0.875% 2018	1,124	3-Feb-16
China Cinda Finance (2015) 4.25% 2025	1,700	23-Apr-15	Sinopec 1.75% 2019	1,100	29-Sep-16
Evergrande Real Estate Group 9% Perpetual	1,500	29-Dec-15	Three Gorges Finance 3.15% 2026	1,000	2-Jun-16
Others	86,327		Others	75,054	
Hong Kong, China	**18,702**		**Hong Kong, China**	**17,658**	
Shimao Property 8.375% 2022	1,100	10-Feb-15	CK Hutchison 1.25% 2023	1,517	8-Apr-16
Hong Kong, China (Sovereign) *Sukuk* 1.894% 2020	1,000	3-Jun-15	China Overseas Finance 0% 2023	1,500	5-Jan-16
Others	16,602		Others	14,641	
Indonesia	**15,572**		**Indonesia**	**12,651**	
Indonesia (Sovereign) 4.75% 2026	2,250	8-Dec-15	Perusahaan Penerbit SBSN *Sukuk* 4.55% 2026	1,750	29-Mar-16
Indonesia (Sovereign) 4.125% 2025	2,000	15-Jan-15	Indonesia (Sovereign) 2.625% 2023	1,685	14-Jun-16
Indonesia (Sovereign) 5.125% 2045	2,000	15-Jan-15	Indonesia (Sovereign) 3.75% 2028	1,685	14-Jun-16
Perusahaan Penerbit SBSN *Sukuk* 4.325% 2025	2,000	28-May-15	Perusahaan Penerbit SBSN *Sukuk* 3.4% 2021	750	29-Mar-16
Indonesia (Sovereign) 3.375% 2025	1,397	30-Jul-15	Listrindo Capital 4.95% 2026	550	13-Sep-16
Others	5,925		Others	6,231	
Korea, Rep. of	**23,348**		**Korea, Rep. of**	**20,939**	
Korea Eximbank 2.875% 2025	1,250	21-Jan-15	Korea Development Bank 3% 2026	1,000	13-Jan-16
Korea Eximbank 2.25% 2020	1,000	21-Jan-15	Korea Eximbank 1.75% 2019	1,000	26-May-16
Korea Eximbank 3.25% 2025	1,000	10-Nov-15	Korea Eximbank 2.625% 2026	1,000	26-May-16
Others	20,098		Others	17,939	
Lao People's Dem. Rep.	**182**		**Lao People's Dem. Rep.**	**312**	
Malaysia	**8,496**		**Malaysia**	**4,061**	
Petronas Capital 3.5% 2025	1,500	18-Mar-15	Malaysia (Sovereign) *Sukuk* 3.179% 2026	1,000	27-Apr-16
Petronas Capital 4.5% 2045	1,500	18-Mar-15	Danga Capital 3.035% 2021	750	1-Mar-16
Petronas Global *Sukuk* 2.707% 2020	1,250	18-Mar-15	Maybank 3.905% 2026	500	29-Apr-16
Others	4,246		Others	1,811	
Philippines	**4,256**		**Philippines**	**2,000**	
Philippines (Sovereign) 3.95% 2040	2,000	20-Jan-15	Philippines (Sovereign) 3.7% 2041	2,000	1-Mar-16
Royal Capital BV 5.5% Perpetual	450	26-Aug-15	**Singapore**	**8,599**	
Others	1,806		BOC Aviation 3.875% 2026	750	27-Apr-16
Singapore	**8,346**		DBS Group 3.6% Perpetual	750	7-Sep-16
Global Logistics Properties 3.875% 2025	1,000	4-Jun-15	United Overseas Bank 3.5% 2026	700	16-Mar-16
DBS Bank 1.625% 2018	1,000	6-Aug-15	Temasek Financial 0.5% 2022	674	1-Mar-16
BOC Aviation 3% 2020	750	30-Mar-15	United Overseas Bank 2.88% 2027	600	8-Sep-16
Others	5,596		Others	5,125	
Thailand	**176**		**Thailand**	**675**	
Emerging East Asia Total	**182,605**		**Emerging East Asia Total**	**154,046**	
Memo Items:			**Memo Items:**		
India	**10,919**		**India**	**6,489**	
Bharti Airtel 4.375% 2025	1,000	10-Jun-15	Export–Import Bank of India 3.375% 2026	1,000	5-Aug-16
Others	8,919		Others	5,489	
Sri Lanka	**3,649**		**Sri Lanka**	**2,916**	

USD = United States dollar.
Notes:
1. Data exclude certificates of deposit.
2. G3 currency bonds are bonds denominated in either euros, Japanese yen, or US dollars.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

Monthly G3 currency bond issuance from emerging East Asia exhibited an erratic trend in Q3 2016, falling from USD19.9 billion in July to USD9.5 billion in August before climbing to USD25.2 billion in September **(Figure 5)**. The monthly decline between July and August was brought about by lower month-on-month G3 currency bond sales in the PRC; Hong Kong, China; Indonesia; the Republic of Korea; and Singapore. Between August and September, G3 currency bond issuance accelerated in the PRC; Hong Kong, China; Indonesia; Malaysia; and Singapore, There were also new G3 currency bond sales in the Lao PDR and Thailand in September.

Figure 5: G3 Currency Bond Issuance



USD = United States dollar.
Note: G3 currency bonds are bonds denominated in either euros, Japanese yen, or US dollars.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

Government bond yield curves in all emerging East Asian markets rose for most tenors due to increased concerns over the direction of the United States economy.

With the recently concluded US election, markets outside of the US experienced rising uncertainty and increased risk aversion as investors struggled to discern the future direction of the incoming US administration's economic policies.

While there are a number of unknowns regarding US economic policy under the new administration, US interest rates have risen since the election as the new government is expected to boost GDP growth and inflation.

In addition, the US economy has strengthened, increasing the likelihood that the Federal Reserve will raise the policy rate in December. The US reported an average monthly increase in nonfarm payrolls of 206,000 in Q3 2016, compared with a monthly average of 146,000 in Q2 2016. In October, nonfarm payrolls were up a modest 161,000. US GDP growth accelerated to an annual rate of 2.9% in Q3 2016 from 1.4% in Q2 2016, according to advanced estimates from the Bureau of Economic Analysis. There were also gains in manufacturing, with the Institute for Supply Management reporting that the Purchasing Managers Index rose to 51.9 in October from 51.5 in September. Inflation was also up in October, rising to 1.6% y-o-y from 1.5% y-o-y in September.

In the November testimony of Federal Reserve Chair Janet Yellen, she indicated that a rate increase could occur relatively soon if economic data further strengthened, thus bolstering the likelihood of a federal funds rate hike in December.

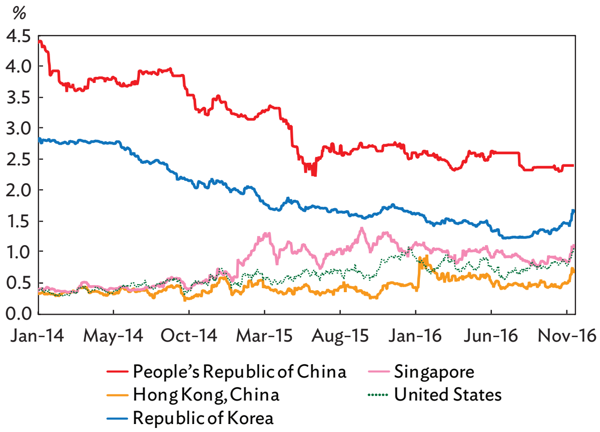
There were also signs of recovery in the European Union (EU). While the European Central Bank (ECB) maintained its existing monetary easing measures at its meeting on 20 October, keeping policy rates and asset purchases unchanged, ECB officials noted that there have been some signs of a strengthening EU economy. Therefore, it does not appear that the ECB will pursue additional easing measures after its asset purchases expire in March 2017. GDP growth in the EU has been stable, as indicated by a flash estimate of 0.3% y-o-y growth in Q3 2016, the same rate as in the previous quarter. Inflation also increased in October to 0.5% y-o-y from 0.4% y-o-y in September.

In contrast to the ECB and Federal Reserve, the Bank of Japan (BOJ) is pursuing additional easing measures. On 21 September, the BOJ adopted a New Framework for Strengthening Monetary Easing, which includes targeting the yield curve as a measure to influence the economy.

As a result, yields for 2-year tenors trended upward between 31 October and 18 November in all regional markets except the PRC's **(Figures 6a, 6b)**. Yields for 10-year maturities also rose for all markets during the review period **(Figures 7a, 7b)**.

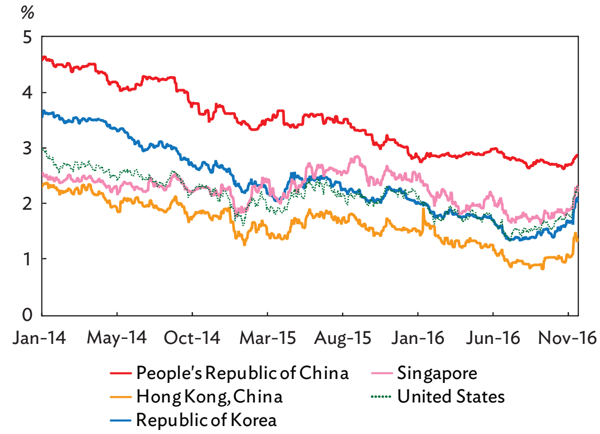
The upward pressure on emerging East Asian yields was also due to outflows in some markets driven by higher US yields, with yields for all markets in the region shifting upward for most tenors **(Figure 8)**. The largest yield curve shifts were in Malaysia and Indonesia, where bond markets have a significant foreign investor base

Figure 6a: 2-Year Local Currency Government Bond Yields



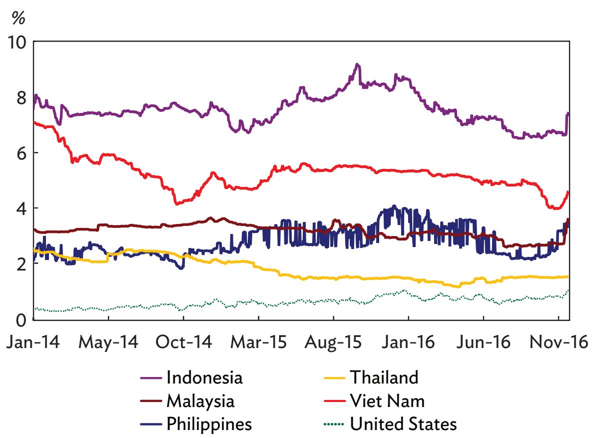
Note: Data as of 18 November 2016.
Source: Based on data from Bloomberg LP.

Figure 7a: 10-Year Local Currency Government Bond Yields



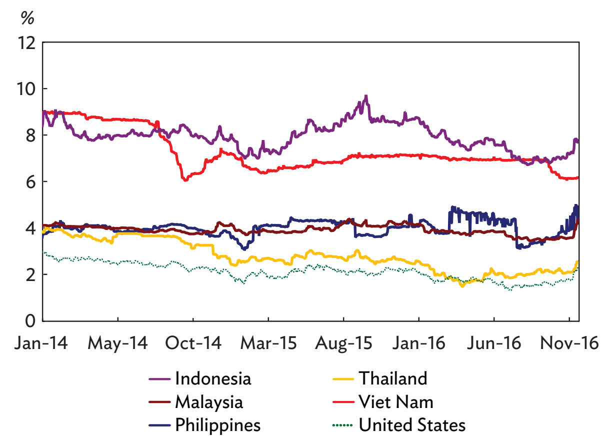
Note: Data as of 18 November 2016.
Source: Based on data from Bloomberg LP.

Figure 6b: 2-Year Local Currency Government Bond Yields



Note: Data as of 18 November 2016.
Source: Based on data from Bloomberg LP.

Figure 7b: 10-Year Local Currency Government Bond Yields



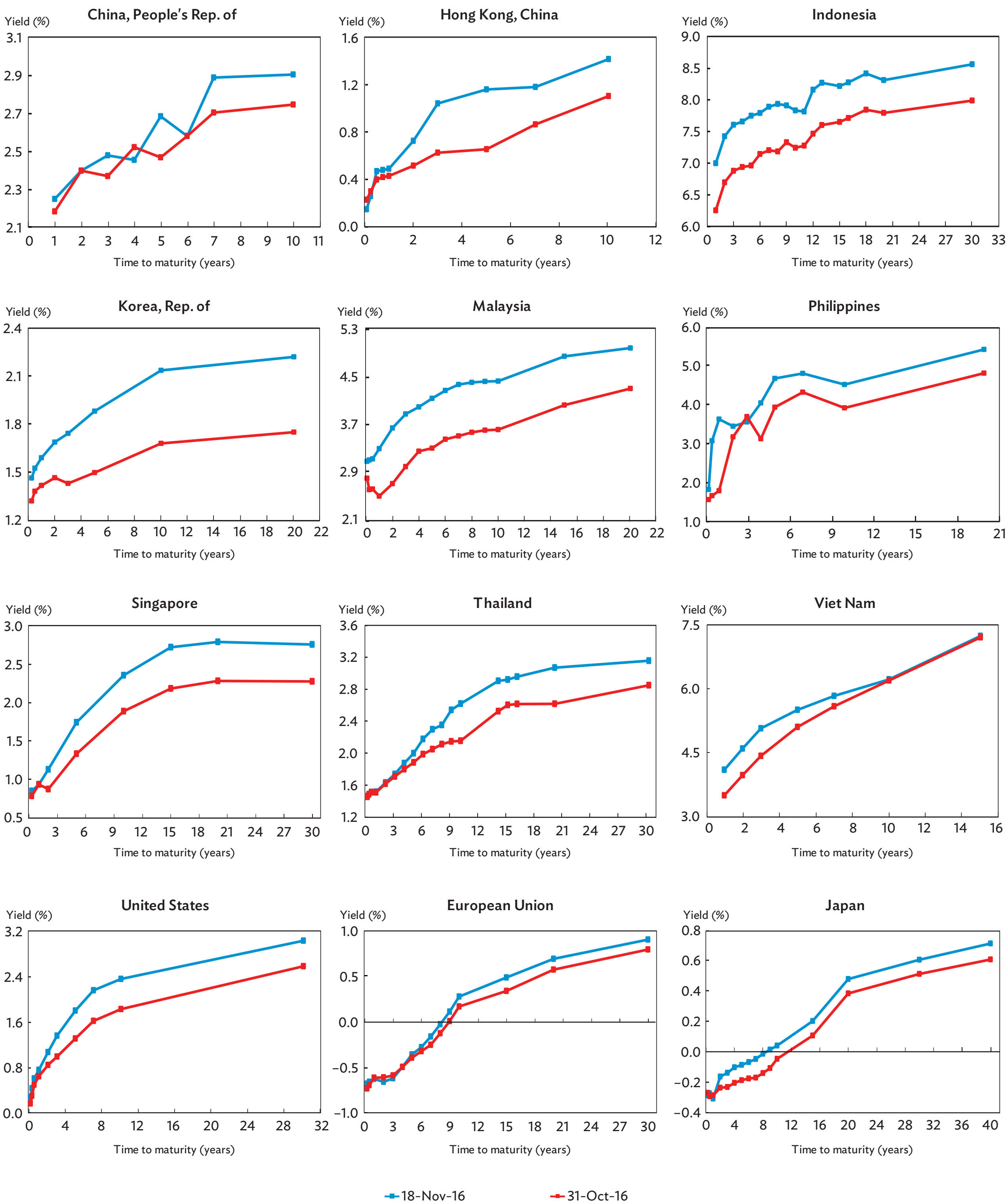
Note: Data as of 18 November 2016.
Source: Based on data from Bloomberg LP.

that makes them more sensitive to capital market outflows, and the Philippines, where a recent central bank statement announced that inflation was expected to rise to the midpoint of its target range in 2017.

While inflation remains benign throughout the region, it has shown some recent signs of rising. Inflation in all emerging East Asian economies except for Hong Kong, China experienced a small spike in recent months **(Figures 9a, 9b)**. Inflation in Hong Kong, China is subject to base effects related to government rental subsidies; if these are removed, Hong Kong, China's inflation would have been roughly stable during the review period. Thailand moved out of deflation in April, while deflation in Singapore has been easing since May.

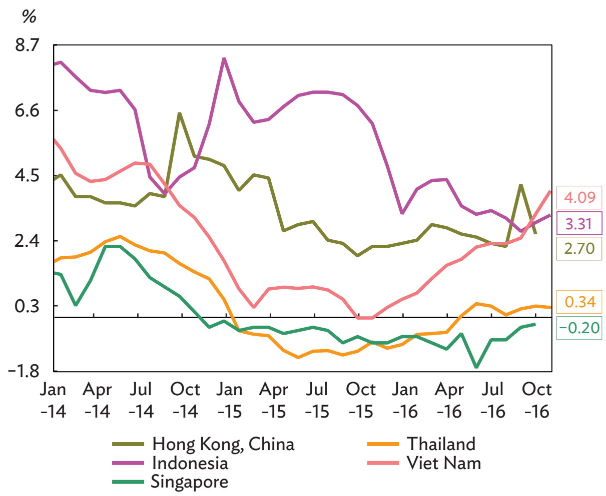
Given rising uncertainty, most central banks in emerging East Asia maintained their existing monetary policies in order to wait for greater clarity regarding US economic policy and its impacts on global financial markets **(Figures 10a, 10b)**. While Bank Indonesia eased its policy rate by 25 basis points (bps) each in its September and October meetings, it maintained the policy rate in its November meeting.

Figure 8: Benchmark Yield Curves—Local Currency Government Bonds



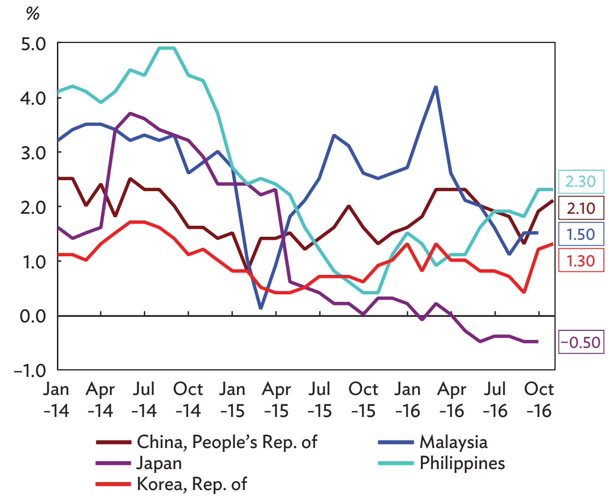
Sources: Based on data from Bloomberg LP and Thai Bond Market Association.

Figure 9a: Headline Inflation Rates



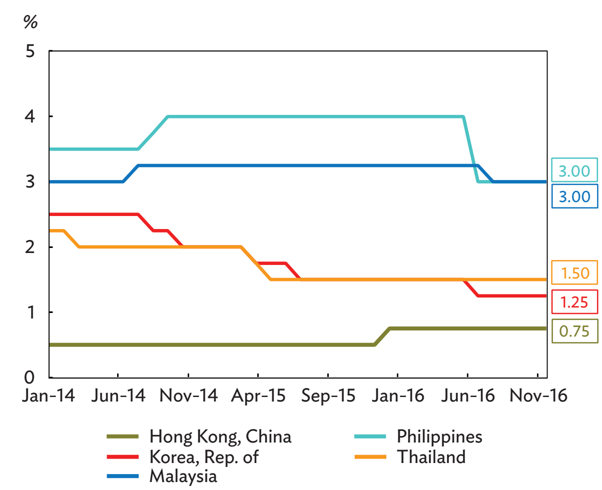
Note: Data as of October 2016 except for Hong Kong, China and Singapore (September).
Source: Based on data from Bloomberg LP.

Figure 9b: Headline Inflation Rates



Note: Data as of October 2016 except for Japan and Malaysia (September).
Source: Based on data from Bloomberg LP.

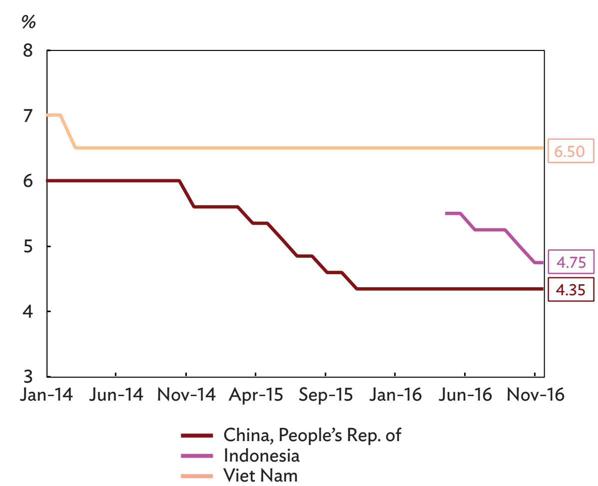
Figure 10a: Policy Rates



Notes:
1. Data as of 18 November 2016.
2. The policy rate of the Philippines was adjusted to 3.0% from 4.0% in June 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 10b: Policy Rates



Notes:
1. Data as of 18 November 2016.
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.

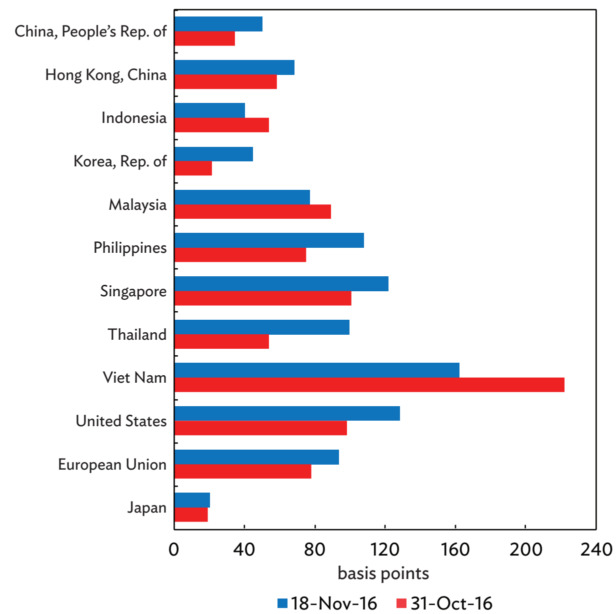
Most yield curves in emerging East Asia steepened between 31 October and 18 November **(Figure 11)**, reflecting market uncertainty. The exceptions to this trend were the yield curves in Indonesia, Malaysia, and Viet Nam.

The spread between AAA-rated corporate bond yields and government bond yields rose in the Republic of Korea and fell in Malaysia.

Credit spreads between AAA-rated corporate bonds and government bonds rose for all tenors in the Republic of Korea and fell for all tenors in Malaysia between 1 September and 31 October **(Figure 12a)**. In the PRC, credit spread changes were mixed.

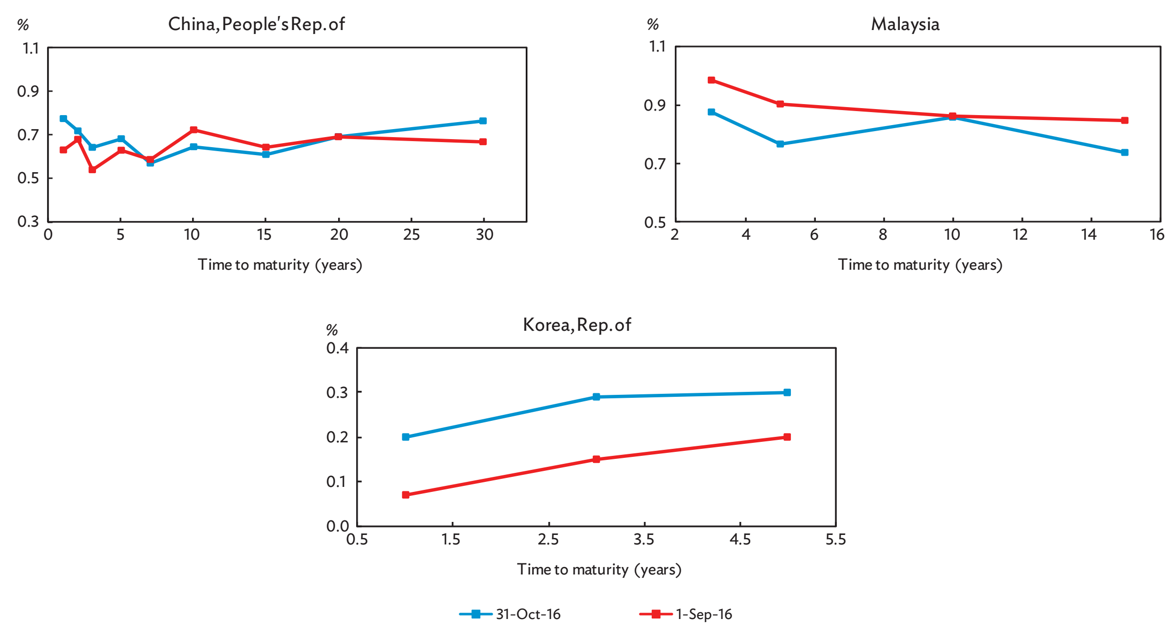
Lower-rated credit spreads fell in the PRC and were unchanged in the Republic of Korea and Malaysia during the review period **(Figure 12b)**.

Figure 11: Yield Spreads Between 2-Year and 10-Year Government Bonds



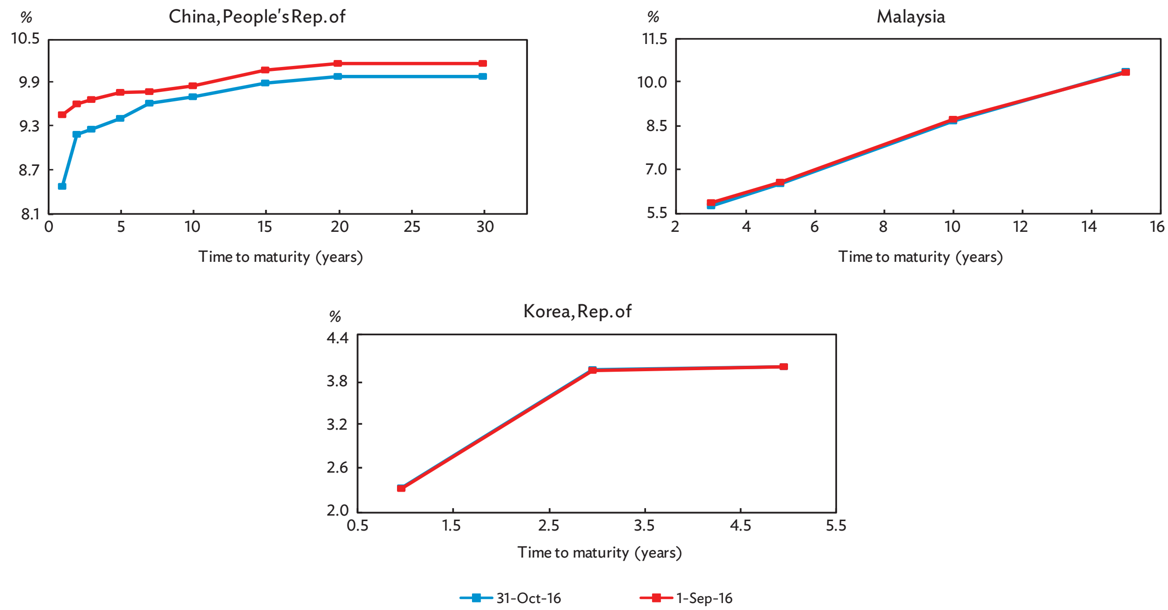
Sources: Based on data from Bloomberg LP and Thai Bond Market Association.

Figure 12a: 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 2016 and 31 October 2016.
Sources: People's Republic of China (*Wind Info*), Republic of Korea (EDAILY *BondWeb*), and Malaysia (Bank Negara Malaysia).

Figure 12b: 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 2016 and 31 October 2016.

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

Policy and Regulatory Developments

People's Republic of China

International Monetary Fund Includes Renminbi in Special Drawing Rights Basket

On 30 September, the International Monetary Fund (IMF) announced that it would include the Chinese renminbi in its Special Drawing Rights basket effective 1 October. The IMF said that the renminbi's inclusion is due to the currency's increasing role in the international monetary system. Other currencies included in the IMF's Special Drawing Rights are the United States (US) dollar, euro, Japanese yen, and pound sterling.

Trading in Credit Default Swaps Allowed

On 31 October, the People's Republic of China (PRC) allowed banks to begin trading credit default swaps as part of efforts to help hedge credit risks amid increasing concerns in the PRC's corporate bond market. The credit default swaps that are being traded in the PRC are similar to those traded in international markets. In the past, the PRC launched credit risk mitigation warrants to hedge against credit risk, but they were not well received by market participants.

Hong Kong, China

Hong Kong Monetary Authority Assigns Nine Offshore Renminbi Primary Liquidity Providers

On 27 October, the Hong Kong Monetary Authority released the new list of offshore renminbi primary liquidity providers after expiration of the first set of liquidity providers. The list contains nine institutions: Agricultural Bank of China; Bank of Communications; Bank of China (Hong Kong, China); BNP Paribas; China Construction Bank (Asia); Citibank, N.A.; HSBC; Industrial and Commercial Bank of China (Asia); and Standard Chartered Bank (Hong Kong, China). The list adds two additional liquidity providers from the previous seven. The Hong Kong Monetary Authority said that the expansion is part of efforts to strengthen the liquidity of the offshore renminbi bond market.

Indonesia

Bank Indonesia Issues Regulation on Foreign Exchange Call Spread Options

In September, Bank Indonesia announced a new regulation that allows banking institutions to engage in call spread option contracts on foreign exchange transactions. Only banks with capitalization of IDR5 trillion or more are allowed to participate in this hedging product. The regulation also requires an underlying transaction.

Parliament Approves 2017 State Budget

In October, the Indonesian Parliament approved the government's 2017 state budget, which estimated a deficit equivalent to 2.41% of gross domestic product. The 2017 budget projects revenues of IDR1,750.3 trillion versus spending of IDR2,080.5 trillion. The budget includes a hike in the cigarette excise tax and cuts in certain electricity subsidies. The underlying macroeconomic assumptions for the 2017 budget include (i) annual gross domestic product growth of 5.1%, (ii) annual inflation of 4.0%, (iii) an exchange rate of IDR13,300 per USD1, (iv) a 3-month Treasury bill rate of 5.3%, and (v) an Indonesian crude oil price of USD45 per barrel.

Republic of Korea

Financial Services Commission Announces Law on Corporate Governance for Financial Companies

The Financial Services Commission announced in August the State Council's approval on 26 July of the Enforcement Decree of the Act on Corporate Governance of Financial Companies as well as the effectivity of the decree on 1 August. The decree aims to promote the sound and transparent corporate governance of financial companies. Among its key provisions are disqualification criteria for directors and officers, recommended composition of the board of directors, a fit-and-proper rule for the largest shareholder, and performance-based pay for officers and employees.

Malaysia

Prime Minister Announces 2017 Federal Budget

On 21 October, the Prime Minister announced the release of Malaysia's 2017 federal budget with a total allocation of MYR260.8 billion for a 3.4% increase from the 2016 revised budget. The government also announced a fiscal deficit target of MYR40.3 billion, or 3.0% of gross domestic product, down from the 2016 target of 3.1%. Federal government revenue collection is expected to increase 3.0% y-o-y to MYR219.7 billion. The Prime Minister noted the decline in revenues due to the continued fall in oil prices, with an estimated loss of MYR30 billion. Collections from the implementation of the Goods and Services Tax, which was launched in 2015, had reached MYR30 billion as of 19 October 2016. The economy is expected to grow 4.0%–5.0% in 2017, while annual inflation is forecasted at 2.0%–3.0%.

Philippines

First Tax Reform Package Submitted to Congress in September

The Department of Finance announced in September that it had submitted its first of four tax reform packages to Congress. The proposed tax reform measures include restructuring the personal income tax system, widening the tax base, and adjusting excise taxes on automobiles and petroleum products. The comprehensive tax reform program will enable the government to raise the additional funds needed to increase public infrastructure spending and investments in human capital and social protection.

Singapore

Singapore Exchange Signs Memorandum of Understanding with Industrial and Commercial Bank of China

Singapore Exchange and the Industrial and Commercial Bank of China Limited, the sole renminbi-clearing bank in Singapore, signed a Memorandum of Understanding on 19 September to enhance capital market links between Singapore and the PRC. The memorandum aims to support companies from the PRC in tapping Singapore's capital markets for equity and bond financing needs, particularly real investment trusts and offshore renminbi-denominated bonds. The memorandum also aims to realize secondary market activities of renminbi-denominated contracts listed on Singapore Exchange.

Thailand

Stock Exchange of Thailand Plans New Mutual Fund Service Platform in Early 2017

The Stock Exchange of Thailand on 26 September announced its plan to launch a new mutual fund service platform in the first quarter of 2017 to help broaden and make efficient the channeling and access of mutual funds by the public. An industry-wide test run is expected before the end of the year. The announcement came after memorandums of understanding were signed with about 40 mutual fund firms on 15 March. Upon launch, the many stakeholders—which include asset management firms, securities companies, unit investment trusts, life insurance firms, and commercial banks—have all committed to use the new platform to service customer needs in addition to the continued use of traditional person-to-person channels. According to the Securities and Exchange Commission, the plan is an important milestone in establishing Thailand's national infrastructure investment platform, making transactions easier for stakeholders and their customers.

Viet Nam

Hanoi Stock Exchange to Test Run Derivatives Product in November and December

The Hanoi Stock Exchange is continuing with preparations to launch a derivatives market. The exchange recently announced that regulations for future contracts on equity indices and government bonds will be implemented in November. The exchange will also test the trading system for the derivative products in November and December.

AsianBondsOnline Annual Bond Market Liquidity Survey

Introduction

AsianBondsOnline conducts its bond market liquidity survey every year to obtain a comprehensive overview of the current state of liquidity in local currency (LCY) bond markets in emerging East Asia.[7] The survey is designed to provide market participants with meaningful insights and an accurate perspective on liquidity conditions in the region, and to aid regulators and policymakers in drafting the needed policy and structural reforms for the further deepening of LCY bond markets.

As part of the data-gathering process, *AsianBondsOnline* conducted meetings, phone interviews, and email correspondence with regional bond market participants. Survey participants include, among others, fixed-income traders and dealers, brokers, portfolio and asset managers, debt market researchers and strategists, bond pricing agencies, and regulatory bodies. The 2016 survey was conducted after the United States (US) Federal Reserve meeting in September, specifically, between the end of September and middle of October.

The survey covers two parts: quantitative and qualitative issues relating to bond market liquidity. In the quantitative section, survey participants were asked to provide inputs on liquidity measures such as bid–ask spreads, transaction sizes, and trading volumes. In the qualitative section, respondents were asked to rank structural issues based on the importance or relevance to their respective bond markets.

When asked whether liquidity conditions have improved over the last year, *AsianBondsOnline* received divergent responses from market participants. In the People's Republic of China (PRC), Indonesia, Thailand, and Viet Nam (and to some extent in Malaysia), participants noted a significant improvement in liquidity conditions, over the previous year. In the PRC, bond market sentiments were boosted by the negative outlook for the domestic equity market. In Indonesia, Thailand, and Viet Nam, improved economic outlooks and stable exchange rates helped boost demand for LCY bonds. In developed markets such as Hong Kong, China; the Republic of Korea; and Singapore; most participants said that liquidity conditions were stable. It was only in the Philippines where market participants noted some degree of tightening.

The protracted moves by the Federal Reserve in raising interest rates bode well for LCY bond markets in the region. The low interest rate regime globally, particularly negative interest rates in the European Union and Japan, has helped buoy flows into emerging East Asia's LCY bond markets.

Quantitative Indicators for Government Bond Markets

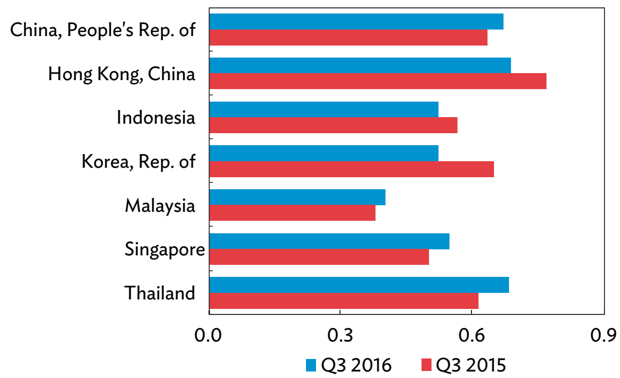
Various indicators are used to measure bond market liquidity. The most commonly cited indicator is trading volume, which refers to the cumulative value of all bonds traded in the secondary market. While trading volume is a common measure of market activity, a bond market's turnover ratio is considered to be a better indicator as it measures trading activity relative to the size of the market. *AsianBondsOnline* calculates the turnover ratio by taking the aggregate value of transactions from the sales side (or one side of the trade only) for a particular quarter and dividing it by the average amount of bonds outstanding for the current and previous quarters. A higher turnover ratio indicates a more liquid market.

Figure 13 presents government bond turnover ratios for emerging East Asian markets in which data are available. Four out of the seven markets recorded higher turnover ratios in the third quarter (Q3) of 2016 than in Q3 2015. The highest government bond turnover ratios were noted in Hong Kong, China (0.69); Thailand (0.68); and the PRC (0.67). Malaysia's turnover ratio was the lowest in the region at 0.40, due largely to a sustained decline in issuance and trading activities in central bank bills.

Another metric for gauging liquidity is the bid–ask spread, or bid-offer spread, which reflects the cost of executing a trade. The bid–ask spreads quoted by market participants are for a given transaction size. The lower or narrower the

[7] 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.

Figure 13: Local Currency Government 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 during each 3-month period.
2. For the Republic of Korea, Q3 2016 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).

spread, the more liquid the market. Bid–ask spreads for Treasury bonds in emerging East Asia for this year's survey are presented in **Table 5**. The region's average bid–ask spread for on-the-run government instruments narrowed to 3.8 basis points (bps) in 2016 from 5.4 bps in the 2015 survey, reflecting an overall improvement in government bond market liquidity conditions in 2016.

In 2016, bid–ask spreads narrowed in all of the region's government bond markets except for the Philippines, Singapore, and Thailand. The lowest bid–ask spreads were recorded in the Republic of Korea (0.5 bps), the PRC (1.0 bp), and Malaysia (2.1 bps). The widest bid–ask spread in the region was noted in Hong Kong, China at 8.3 bps. This was partially due to a revision in the methodology used in the 2016 survey as Hong Kong Special Administrative Region (HKSAR) bonds replaced Exchange Fund Notes (EFNs). The Hong Kong Monetary Authority no longer issues EFNs with tenors of more than 2 years. Therefore, since not all market participants are actively trading HKSAR bonds yet, a higher bid–ask spread was observed. The next two markets with the widest bid–ask spreads were Indonesia (5.2 bps) and Viet Nam (7.2 bps). At the same time, these two markets, along with the PRC, posted the largest declines in spreads compared with 2015.

The region's average bid–ask spread for off-the-run government securities declined to 6.6 bps in 2016 from 8.7 bps in 2015. All markets posted a narrower spread in 2016 except for the Philippines (12.5 bps) and Thailand (7.3 bps), where spreads widened, and in the Republic of Korea (0.9 bps), where the spread was unchanged.

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	8.3	5.2	0.5	2.1	4.6	3.0	2.3	7.2	3.8
	SD	0.7	2.9	3.3	0.2	0.9	3.2	0.5	0.5	3.7	2.7
	CV	0.7	0.3	0.6	0.4	0.4	0.7	0.2	0.2	0.5	0.7
Typical Bid–Ask Spread Off-the-Run	Average (bps)	2.0	10.0	9.0	0.9	5.0	12.5	3.5	7.3	9.2	6.6
	SD	0.7	5.0	3.5	0.6	1.5	6.3	1.0	2.1	3.8	4.0
	CV	0.4	0.5	0.4	0.7	0.3	0.5	0.3	0.3	0.4	0.6
Accepted LCY Bond Transaction Size On-the-Run	Average (USD million)	11.1	6.2	1.7	9.1	4.3	1.8	5.5	3.8	3.4	5.2
	SD	4.6	5.8	0.9	0.0	1.8	1.0	1.8	3.3	0.0	3.2
	CV	0.4	0.9	0.6	0.0	0.4	0.5	0.3	0.9	0.0	0.6
Accepted LCY Bond Transaction Size Off-the-Run	Average (USD million)	10.1	6.2	1.3	9.1	3.2	0.9	5.5	2.1	3.4	4.6
	SD	3.9	5.8	0.9	0.0	1.2	0.3	1.8	1.4	–	3.3
	CV	0.4	0.9	0.7	0.0	0.4	0.3	0.3	0.7	–	0.7

– = 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.
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. In our 2016 survey, the average Treasury bond bid–ask spread was 30.2 cents.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

The average accepted bond transaction size for on-the-run government securities in emerging East Asia rose to USD5.2 million in this year's survey from USD3.5 million in 2015. All markets in the region recorded increases in their average transaction size except in the Republic of Korea, which was unchanged, and in Malaysia, where the transaction size marginally fell in 2016. The PRC (USD11.1 million) continued to have the largest average transaction size in the region, while the smallest average transaction sizes were recorded in Indonesia (USD1.7 million) and the Philippines (USD1.8 million).

Characteristics of Individual Government Bond Markets

People's Republic of China

Survey respondents in the PRC noted that liquidity conditions significantly improved in 2016. Much of the improvement was attributed to lower interest rates, which led to rising bond prices.

Market participants noted an increase in capital flows into the PRC's bond market resulting from a number of factors. Lower interest rates, which were partially in response to a slowdown in the PRC's economy, led to lower inflation as well as market expectations that the central bank would pursue further easing. In addition, the slowdown in the PRC's economy spurred negative sentiments with respect to the PRC's equity market, increasing flows into the bond market. Government bonds also benefitted from a shift away from corporate bonds by investors concerned with a mounting number of defaults in the PRC corporate bond market in 2016.

Survey respondents noted a large increase in assets under management by funds and other institutions, leading to an increase in bond flows. The PRC recently opened its interbank government bond market to foreigners by removing the need for quotas, which has led to increased foreign investment. This was viewed as a positive development given the potential for increased bond investments in the PRC in the future. However, participants noted that foreign investment remains very low compared with domestic investment.

Market participants expect interest rates to be range-bound for the remainder of the year and believe that the People's Bank of China is unlikely to further ease monetary policy in 2016 given the likelihood of a Federal Reserve rate hike by the end of the year. While interest rates may go up due to ample liquidity in the system, rising interest rates would be viewed as a buying signal given how long low interest rates have persisted in the PRC. Because of a significant increase in trading activity due to rising bond prices, the bid–ask spread fell significantly in 2016 for all major government bonds in the PRC **(Table 6)**. The bid–ask spread for on-the-run Treasury bills fell from 4.0 bps in 2015 to 1.3 bps in 2016, while the on-the-run Treasury bond spread fell to 1.0 bp in 2016 from 5.3 bps in the prior year. Policy bank bond spreads fell to 1.1 bps from 3.0 bps over the same period. Off-the-run bid–ask spreads also fell significantly for all types of issues, but were still higher than bid–ask spreads for on-the-run issues.

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)	1.3	1.0	1.1
Average Trading Size (CNY million)	208.1	73.8	108.1
Off-the-Run			
Bid–Ask Spread (bps)	1.9	2.0	2.3
Average Trading Size (CNY million)	112.5	67.5	62.5

bps = basis points, CNY = Chinese renminbi.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

Most participants judged policy bank bonds and Treasury bonds as the most liquid government securities, with the two having roughly the same level of liquidity. Others, however, said that policy bank bonds enjoy greater liquidity than Treasury bonds due to their higher yields. Total policy bank bonds outstanding exceeded that of Treasury bonds, leading to a greater supply available for investors.

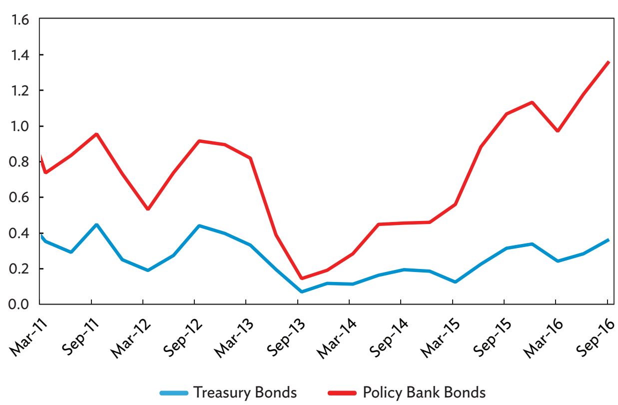
Owing to an increase in the demand for government bonds and declines in bid–ask spreads, large increases in the average trading sizes for government bonds were noted. The average trading size of on-the-run Treasury bills rose to CNY208 million in 2016 from CNY63 million in 2015, the average trading size of on-the-run Treasury bonds rose to CNY74 million from CNY43 million, and the average trading size of policy bank bonds rose from CNY43 million to CNY108 million.

Earlier in 2016, there were concerns that the large issuance sizes of municipal bonds would siphon off liquidity and reduce trading in other segments of the bond market. However, market participants noted that the issuances of local government bonds has not yet had an adverse effect on other parts of the government bond market and liquidity continues to be ample.

Participants also noted that the liquidity of local government bonds is generally poor as investors tend to follow a buy-and-hold strategy.

Consistent with the fall in bid–ask spreads and rise in trading volumes, turnover ratios for Treasury bonds and policy bank bonds increased in 2016 **(Figure 14)**. The turnover ratios also indicate that policy bank bonds are much more actively traded than Treasury bonds, which is consistent with the views of some market participants.

Figure 14: Turnover Ratios for the Spot Market in the People's Republic of China



Source: *ChinaBond*.

Hong Kong, China

In Hong Kong, China, survey respondents said that overall liquidity conditions have remained stable in 2016. Due to the relatively well-developed state of Hong Kong, China's bond market, liquidity is already ample with very little need for regulators to seek improvements via structural changes.

There has been strong demand for government bonds among financial institutions in 2016, reflecting both an increase in Hong Kong dollar liquidity as well as a decline in the loan-to-deposit ratios of banks. The Hong Kong Monetary Authority (HKMA) increased issuance of Exchange Fund Bills (EFBs) to meet the increased demand.

A number of quantitative indicators for liquidity showed improvement as well. The bid–ask spreads for EFBs, and HKSAR bonds declined in 2016.

The bid–ask spread for on-the-run EFBs declined to 3.0 bps in 2016 from 3.5 bps in 2015, while the off-the-run bid–ask spread fell to 3.3 bps from 4.8 bps **(Table 7)**. EFBs have consistently been the most traded and most liquid among Hong Kong, China's government bonds as reflected in the lowest bid–ask spread among all types of government bonds.

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)	3.0	6.0	8.3
Average Trading Size (HKD million)	437.5	75.0	48.3
Off-the-Run			
Bid–Ask Spread (bps)	3.3	6.5	10.0
Average Trading Size (HKD million)	437.5	75.0	48.3

bps = basis points, HKD = Hong Kong dollar, HKSAR = Hong Kong Special Administrative Region.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

EFNs' on-the-run bid–ask spreads rose to 6.0 bps, but off-the-run bid–ask spreads declined to 6.5 bps from 7.3 bps. While EFNs continue to enjoy strong demand from financial institutions, issuance has steadily declined since the HKMA determined it would only issue EFNs with tenors of 2 years or less and replace longer-term EFNs with HKSAR bonds in a bid to improve liquidity in the HKSAR bond market.

Market participants indicated that the liquidity of HKSAR bonds improved in 2016 in response to the HKMA issuing more HKSAR bonds in lieu of longer-term EFNs, but participants noted that HKSAR bond liquidity still lags that of EFBs and EFNs. This is reflected in the wider bid–ask spread for HKSAR bonds, which in 2016 fell to 8.3 bps for on-the-run issues and 10.0 bps for off-the-run issues.

Despite lower bid–ask spreads in 2016, the turnover ratio for government bonds declined in 2016 on lower trading volumes. This was the result of an increase in government bond issuance by the HKMA to meet financial institutions' demand for EFBs. Turnover ratios declined as demand for EFBs was strong, with many held after being purchased rather than being traded due to a lack of alternative investments.

As a result, there was a decline in the average trading size of EFBs to HKD438 million in 2016 from HKD490 million in 2015. An increase in the average trading size was observed in 2016 for both EFNs and HKSAR bonds. In the case of EFNs, the average trading size for on-the-run issues rose to HKD75.0 million from HKD51.3 million in the prior year. For HKSAR bonds, the average trading size rose to HKD48.3 million from HKD18.0 million.

Indonesia

Overall liquidity conditions have significantly improved in Indonesia in 2016, reflecting stable macroeconomic fundamentals, the delay in the Federal Reserve's rate hike, and domestic policy reforms that contributed to the further deepening of the LCY bond market. Some survey respondents noted that 2016 has been one of the best years ever for Indonesia's LCY bond market.

The increase in liquidity was driven by increased demand for Indonesia's government bonds by both offshore and onshore investors. A low interest rate environment globally has boosted demand for emerging market assets, including Indonesian bonds. Capital poured into the government bond market as foreign investors continued to chase IDR-denominated bonds, which have the highest yields in the region. The share of foreign holdings in the government bond market grew to 39.2% of the total at the end of September from 37.6% a year earlier.

In addition, demand for bonds was buoyed by a regulation issued by Otoritas Jasa Keuangan requiring insurance and pension funds to hold at least 20% of their assets in government bonds by the end of 2016 and at least 30% by the end of 2017. An ongoing tax amnesty program that aims to encourage residents to declare and repatriate funds parked in overseas tax havens further boosted sentiments in the LCY bond market. As repatriated funds are required to be placed in the Indonesian capital market for a period of 3 years, the bond market is expected to receive additional inflows.

Overall, market participants maintained a positive outlook for Indonesian bonds, despite a looming rate hike by the Federal Reserve, due to positive economic fundamentals. Fundamentally, macroeconomic indicators are stable given subdued inflation, the strengthening rupiah, and a reduced current account deficit.

Survey results showed that on-the-run bid–ask spreads for Treasury bills and Treasury bonds narrowed in 2016, while spreads for *Sertifikat* Bank Indonesia (SBI) widened **(Table 8)**. Bid–ask spreads significantly narrowed for Treasury bonds, particularly benchmark bonds (5-, 10-, 15-, and 20-year tenors), which remained the most liquid among government debt instruments. The 5-year and 10-year bonds were the most widely traded, with the 10-year Treasury bond cited as the most liquid among the benchmarks.

Table 8: Local Currency Government Bond Survey Results—Indonesia

	Treasury Bills	Treasury Bonds	SBI
On-the-Run			
Bid–Ask Spread (bps)	15.0	5.2	16.7
Average Trading Size (IDR billion)	70.9	22.4	43.8
Off-the-Run			
Bid–Ask Spread (bps)	32.5	9.0	15.0
Average Trading Size (IDR billion)	10.0	17.0	10.0

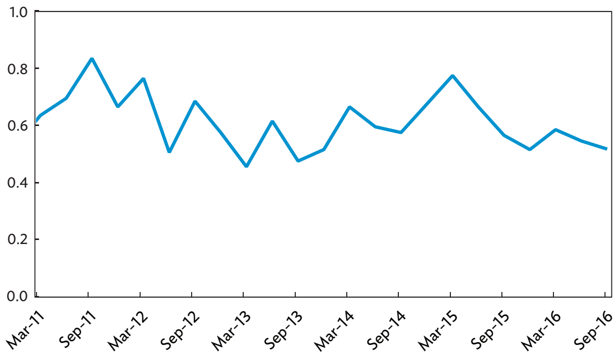
bps = basis points, IDR = Indonesian rupiah, SBI = *Sertifikat* Bank Indonesia.
Notes: The bid–ask spreads for Indonesian Treasury bonds presented above are expressed in terms of yields or basis points to make them comparable with bid–ask spreads in other emerging East Asian markets. Bid–ask spreads for government bonds are most often expressed in terms of "cents" in the Indonesian market. In the 2016 survey, the average Treasury bond bid–ask was 30.2 cents. The Indonesian market quotes bid–ask spread for Treasury bills and SBI in terms of yields or basis points.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

The average trading size also climbed for both Treasury bills and Treasury bonds in 2016. On the other hand, the average trading size for SBI fell. There has been declining interest in SBI since Bank Indonesia began using other monetary tools for managing liquidity, resulting in lower issuance volumes.

Despite increased demand for government bonds, the turnover ratio slipped to 0.52 in Q3 2016 from 0.55 in the previous quarter and 0.57 in Q3 2015 **(Figure 15)**. While overall trading volume increased in 2016, the amount of government bonds outstanding rose more rapidly as the government issued more bonds to fund a widening budget deficit in the revised state budget.

Liquidity in the Indonesian bond market was helped in part by the finalization of the Global Master Repurchase

Figure 15: Quarterly Government Bond Turnover Ratio in Indonesia



Sources: Indonesia Stock Exchange and *AsianBondsOnline*.

Agreement in January, which paved the way for banks to undertake repurchase (repo) transactions through a standardized agreement. Bank Indonesia has been actively encouraging banks to sign the Global Master Repurchase Agreement to boost interbank repo transactions. However, some market participants noted that repo transactions are limited only to banks and suggested that for repo to be fully effective it should be made available to all market participants, including nonbank financial institutions.

A bond futures market is being planned for launch later this year or in 2017, further expanding market instruments available for hedging risks.

Most survey respondents believed there is still room for further easing by Bank Indonesia. At most, an additional 50 bps reduction in the policy rate is expected, though this may not have much impact on bond yields since the Federal Reserve is expected to raise interest rates later this year. (Bank Indonesia further lowered its key rate by 25 bps in October after the conclusion of the survey.) Some participants also mentioned that monetary easing may be made through adjustments in reserve requirement ratios or via macroprudential tools.

Republic of Korea

Government securities in the Republic of Korea are relatively liquid, with average on-the-run bid–ask spreads of 0.5 bps for Treasury bills, Korea Treasury Bonds (KTBs), and Monetary Stabilization Bonds (MSBs) with tenors of less than 1 year, and 0.6 bps for MSBs with tenors of

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

	Treasury Bonds	Treasury Bills	Central Bank Bonds	Central Bank Bills
On-the-Run				
Bid–Ask Spread (bps)	0.5	0.5	0.6	0.5
Average Trading Size (KRW billion)	10.0	10.0	10.0	10.0
Off-the-Run				
Bid–Ask Spread (bps)	0.9	0.6	0.9	0.6
Average Trading Size (KRW billion)	10.0	10.0	10.0	10.0

bps = basis points, KRW = Korean won.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

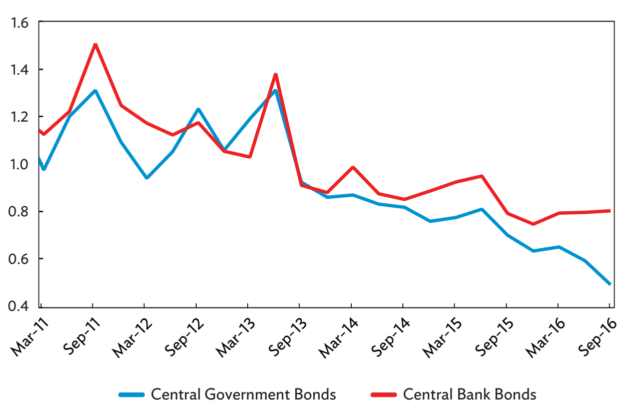
1 year or more **(Table 9)**. The average off-the-run bid–ask spreads were 0.6 bps for Treasury bills and MSBs with tenors of less than 1 year, and 0.9 bps for KTBs and MSBs with tenors of 1 year or more. The average trading size remained the same in 2016 for all government securities at KRW10 billion apiece. Most survey respondents identified 3-year, 5-year, and 10-year KTBs as the most liquid government securities.

Average bid–ask spreads have remained unchanged in 2016 for both on-the-run and off-the-run KTBs and for MSBs with maturities of 1 year or more, but narrowed for both on-the-run and off-the-run Treasury bills and for MSBs with tenors of less than 1 year. The assessments of survey respondents on government bond market liquidity conditions in 2016 were mixed; some witnessed improvements while others perceived either a tightening or no change.

The outlook for government bond market liquidity also varied across survey responses. Some believed liquidity conditions were likely to improve amid expectations of a Federal Reserve policy rate hike before the end of the year, which could generate market volatility and increase the trading of government bonds. Another view was that the effects of market-making with respect to government bond market liquidity were getting stronger. According to some market participants, the issuance of 50-year KTBs in September could help boost liquidity. On the other hand, there were sentiments that market liquidity would not improve over the next 6 months given that the outlook for the Republic of Korea's economy is not optimistic. With regard to monetary policy, survey respondents were of the view that the Bank of Korea's current monetary policy stance would remain unchanged for the time being amid global uncertainties and domestic concerns such as the sluggish economy and rising household debt, among others.

The turnover ratio for LCY central government bonds fell in Q3 2016 compared with the previous quarter as trading volume decreased and the amount of central government bonds outstanding increased **(Figure 16)**. In contrast, the turnover ratio for LCY central bank bonds experienced a marginal uptick in Q3 2016 amid a quarterly hike in the trading volume of MSBs and a decrease in the amount of central bank bonds outstanding.

Figure 16: Quarterly Government Bond Turnover Ratios in the Republic of Korea



Note: For the Republic of Korea, central government bonds include Treasury bonds and National Housing bonds.
Source: The Bank of Korea.

Malaysia

Most participants in this year's survey indicated that Malaysia's bond market liquidity had improved from last year, with some participants describing liquidity conditions to be worse. On the domestic front, the unexpected policy rate cut by Bank Negara Malaysia (BNM) at its 13 July meeting led to a rally in Malaysia's government bond market. The lowering of the statutory reserve requirement ratio in January also provided support to domestic liquidity.

Reduced expectations for a Federal Reserve rate hike amid a low global interest rate environment contributed to higher capital flows into Malaysia's bond market in Q3 2016, further boosting liquidity. Foreign holdings of central government bonds rose to MYR211.8 billion at the end of September from MYR167.3 billion a year earlier. The average bid–ask spread of Malaysian Government Securities (MGSs) narrowed to 2.1 bps from 2.4 bps in 2015. On the other hand, bid–ask spreads for BNM bills and Treasury bills widened on sporadic issuance of these two instruments.

The liquidity gains for Government Investment Issues (GIIs) were evidenced by the average bid–ask spread tightening to 2.2bps in 2016 from 5.3bps in 2015 **(Table 10)**. Demand for GIIs rose due to their inclusion in JP Morgan's Government Bond Index-Emerging Markets indexes effective 31 October 2016. Data from BNM showed foreign holdings of GIIs increasing to MYR26.9 billion at the end of September from MYR8.3 billion in the same period a year earlier. Survey participants also noted the tightening of MGS spreads over comparable GII spreads since the start of the year.

Table 10: Local Currency Government Bond Survey Results—Malaysia

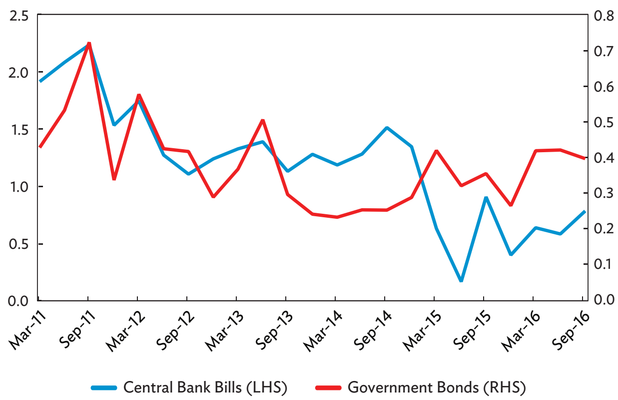
	MGS	GII	BNM Bills	Treasury Bills
On-the-Run				
Bid–Ask Spread (bps)	2.1	2.2	8.6	9.8
Average Trading Size (MYR million)	17.7	16.4	68.8	68.8
Off-the-Run				
Bid–Ask Spread (bps)	5.0	6.1	11.4	11.3
Average Trading Size (MYR million)	13.3	13.2	65.1	68.8

BNM = Bank Negara Malaysia, bps = basis points, GII = Government Investment Issues, MGS = Malaysian Government Securities, MYR= Malaysian ringgit.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

Increased bond market liquidity in Malaysia in 2016 was also observed in the quarterly turnover ratios for central government bonds, which reflect improved market activity compared with 2015 **(Figure 17)**. The slight uptick in the quarterly turnover ratio for central bank bills was driven by a decline in the average size of outstanding central bank bills due to sporadic issuance by BNM, while quarterly trading volume remained steady.

In the near-term, market liquidity is expected to remain upbeat on the back of another policy rate cut by BNM. The market consensus is for the cut to take place in the first half of 2017. BNM has room to cut further in order to support Malaysia's moderating economic growth since

Figure 17: Quarterly Government Bond Turnover Ratios in Malaysia



LHS = left-hand side, RHS = right-hand side.
Source: Bank Negara Malaysia.

inflation remains subdued. Survey participants noted BNM's monetary policy decision would likely be data-dependent. Gross domestic product growth of less than 4.0% would prompt the central bank to ease further to support the economy.

Temporary volatility is expected in the coming months in anticipation of the likelihood of a Federal Reserve rate hike in December. This could result in capital outflows given the high level of foreign holdings of Malaysia's central government bonds. Survey respondents also expect strong domestic support from institutional investors in the event of a sell-off. Malaysia's fiscal consolidation efforts continue to be monitored by market participants, especially the release of the 2017 budget in October, which included a lower deficit target. Concerns over how the new target will be met stem from the impact of volatile oil prices on revenue.

Philippines

Survey results from bond market participants in the Philippines showed average bid–ask spreads to be lower for on-the-run Treasury bonds compared to on-the-run Treasury bills (4.6 bps versus 4.8 bps), and were the same for both off-the-run Treasury bills and bonds at 12.5 bps each **(Table 11)**. The average trading size was substantially larger for Treasury bonds than Treasury bills. Average bid–ask spreads were higher for both on-the-run and off-the-run Treasury bills and bonds than in the previous year, while average trading sizes were down for on-the-run Treasury bills and off-the-run Treasury bills and bonds. (Bid–ask spreads and average trading sizes were identified by survey respondents as good measures of bond market liquidity.)

Table 11: Local Currency Government Bond Survey Results—Philippines

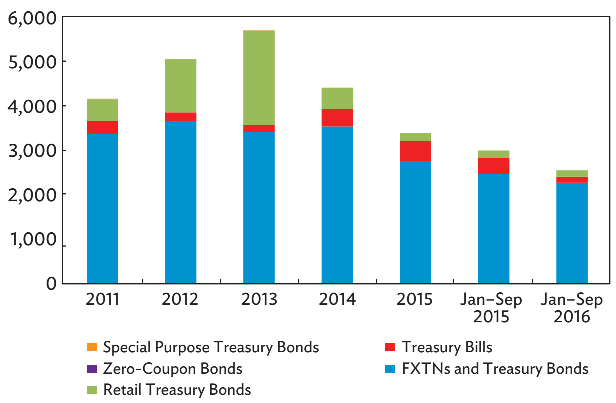
	Treasury Bonds	Treasury Bills
On-the-Run		
Bid–Ask Spread (bps)	4.6	4.8
Average Trading Size (PHP million)	87.5	25.0
Off-the-Run		
Bid–Ask Spread (bps)	12.5	12.5
Average Trading Size (PHP million)	41.7	18.8

bps = basis points, PHP = Philippine peso.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

Most survey respondents identified the 9-year and 15-year Treasury bonds as the most liquid government securities. Observed liquidity trends compared to the previous year were mixed, with differing views that suggested either improving or worsening bond market liquidity conditions. Certain survey responses highlighted the ongoing efforts of the Bangko Sentral ng Pilipinas and market participants to establish a repo market to contribute to the improvement of government bond market liquidity. Among cited factors that influenced the liquidity of the Philippine government bond market in recent months were the monetary policy stances of central banks in advanced economies, including the Bank of Japan, European Central Bank, and the Federal Reserve; global economic growth and outlook; world oil prices; and domestic political events, especially those related to the presidential election held in May. Most respondents believe that the Bangko Sentral ng Pilipinas' monetary policy stance will remain unchanged and that government bond yields will trend upward in coming months.

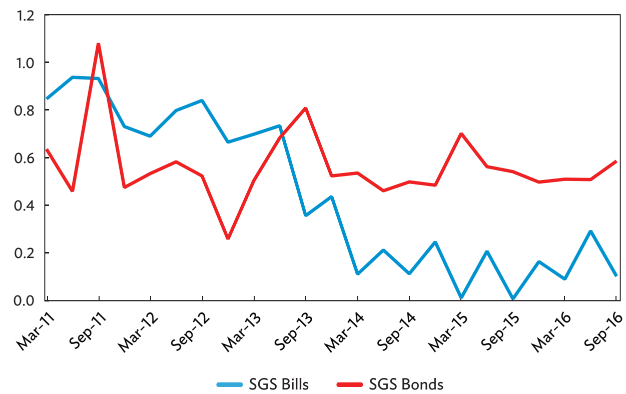
Based on data from the Philippine Dealing & Exchange Corporation, the trading volume of Philippine government securities dropped to PHP2,550 billion in January–September from PHP2,994 billion in the first 9 months of 2015, largely as a result of lowered trading volumes for fixed-rate Treasury notes and Treasury bonds, and (to a lesser extent) Treasury bills **(Figure 18)**.

Figure 18: PDEx Trading Volume Trends—Government Securities in the Philippines



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

Figure 19: Quarterly Government Bond Turnover Ratios in Singapore



SGS = Singapore Government Securities.
Sources: Monetary Authority of Singapore, Singapore Government Securities, and *AsianBondsOnline*.

Singapore

Singapore's bond market liquidity survey results showed a widening of the bid–ask spread for Singapore Government Securities (SGSs) bonds from 2.0 bps in 2015 to 3.0 bps in 2016 **(Table 12)**. Most government bond market trading remains concentrated in SGS bonds. According to market participants, liquidity extends to nearly all debt instruments along the yield curve, with 5-year and 10-year SGS bonds the most liquid among all tenors. The exception is SGS bills, which have a limited supply. The Monetary Authority of Singapore (MAS) had held only two auctions for SGS bills in 2016 through the end of September. MAS bills predominantly function as monetary policy sterilization tools and as a place to maintain banks' liquid assets.

In Q3 2016, the turnover ratio for SGS bills increased to 0.10 from 0.01 in Q3 2015. For SGS bonds, the turnover ratio rose to 0.59 in Q3 2016 from 0.54 in Q3 2015 **(Figure 19)**.

Table 12: Local Currency Government Bond Survey Results—Singapore

	SGS Bonds	SGS Bonds
On-the-Run		
Bid–Ask Spread (bps)	3.0	2.0
Average Trading Size (SGD million)	7.5	...

... = data not available, bps = basis points, SGD = Singapore dollar, SGS = Singapore Government Securities.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

Overall, the outlook among market participants for the Singapore bond market remains stable. Given weak growth expectations for Singapore's economy and the pending Federal Reserve interest rate hike, MAS is expected to maintain its current accommodative monetary policy stance. Survey respondents do not expect any drastic moves from MAS to counter the weak outlook. Moreover, the deflation that has been besetting Singapore for 23 consecutive months through September is seen as part of a global phenomenon, rather than being peculiar to Singapore. Therefore, the impact on the Singapore bond market has been minimal. Similarly, the Indonesian tax amnesty program, launched on 18 July, which some feared would lead to the repatriation of a sizable amount of assets to Indonesia, has had either a minimal or no impact as evidenced by gains in both depth and liquidity in Singapore's bond market.

Thailand

The liquidity survey results for Thailand showed that average bid–ask spreads widened in 2016 compared with 2015. The average trading size rose across all types of on-the-run government securities. Market participants noted that central bank bills remain the most liquid asset and the majority believe that liquidity has improved in 2016 compared with the previous year. Higher average trading sizes were evident for shorter-term Treasury bills and central bank bills than for longer-term government bonds and central bank bonds. Results showed the average bid–ask spread for central bank bills (1.9 bps) and Treasury

Table 13: Local Currency Government Bond Survey Results—Thailand

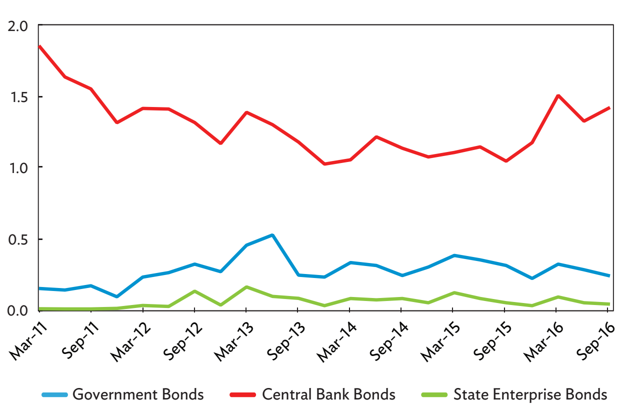
	Government Bonds	Treasury Bills	BOT Bonds	BOT Bills
On-the-Run				
Bid–Ask Spread (bps)	2.3	2.1	2.6	1.9
Average Trading Size (THB million)	131.3	418.8	231.3	431.3
Off-the-Run				
Bid–Ask Spread (bps)	7.3	3.3	3.6	2.6
Average Trading Size (THB million)	72.5	158.3	151.3	158.3

BOT = Bank of Thailand, bps = basis points, THB = Thai baht.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

bills (2.1 bps) are lower than those for government bonds (2.3 bps) and central bank bonds (2.6 bps) **(Table 13)**. Similar to 2015, average bid–ask spreads were lower for on-the-run government debt securities than for their off-the-run counterparts.

Some market participants noted that the bid–ask spread is the best measure of liquidity, while others cited total trading value, average transaction size, and turnover ratios. Compared with Q3 2015, turnover ratios in Q3 2016 declined for government bonds (0.23) and state-owned enterprise bonds (0.05), but rose for central bank bills and bonds (1.41) **(Figure 20)**. The total trading value of Thai government debt securities stood at THB5.3 trillion in Q3 2016, up from THB4.5 trillion in Q3 2015, according to data from the Thai Bond Market Association.

Figure 20: Quarterly Government Bond Turnover Ratios in Thailand



Sources: Bank of Thailand and the Thai Bond Market Association.

The outlook for Thailand's government bond market remains dependent on expectations of a Federal Reserve rate hike. Market participants expect no change in short-term yields; however, a steepening is possible at the longer-end of the yield curve as rates could increase in response to a possible US interest rate hike. The respondents also expect the Bank of Thailand to maintain the policy rate at 1.50% in the short term given that monetary policy needs to remain accommodative to support the recovering domestic economy. Moreover, inflation only turned positive in April after a long period of deflation. Measures offered by survey respondents to improve bond market liquidity include encouraging more trading of longer-dated bonds, increasing the amount of government debt securities issues, developing electronic bidding platforms, and providing a green-shoe option, among others.

Viet Nam

In 2016, survey respondents noted a significant improvement in liquidity in Viet Nam's LCY bond market compared with 2015. Liquidity conditions improved on the back of increased issuance coupled with efforts by the government to lower interest rates and maintain more stable exchange rates. Improved sentiments resulted from increased issuance as the government managed to conduct more successful auctions in 2016 than in the previous year. A new regulation from the State Bank of Vietnam lifting investment restrictions on government bonds for banks and foreign banks also helped boost demand for bonds. Bond market liquidity is expected to improve with the government's plan to launch a derivatives market in 2017. The availability of more diversified products such as bond futures and bond forwards will help deepen the LCY bond market.

Among government bond instruments, Treasury bonds are the most liquid. Survey results showed that the average bid–ask spread for on-the-run Treasury bonds declined to 7.2 bps in this year's survey compared with 15.0 bps in 2015 **(Table 14)**. Average spreads for off-the-run Treasury bonds fell to 9.2 bps from 15.0 bps. The average reported trading sizes for on-the run and off-the run Treasury bonds also increased in this year's survey.

Overall, market participants expect the LCY bond market outlook to remain stable given the positive prospects for Viet Nam's economy. However, they noted some pressures could lead to rising interest rates in 2017.

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)	7.2	12.5	5.0
Average Trading Size (VND billion)	75.0	100.0	200.0
Off-the-Run			
Bid–Ask Spread (bps)	9.2	13.5	7.0
Average Trading Size (VND billion)	75.0	100.0	100.0

bps = basis points, VND = Vietnamese dong.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

Qualitative Indicators for Government Bond Markets

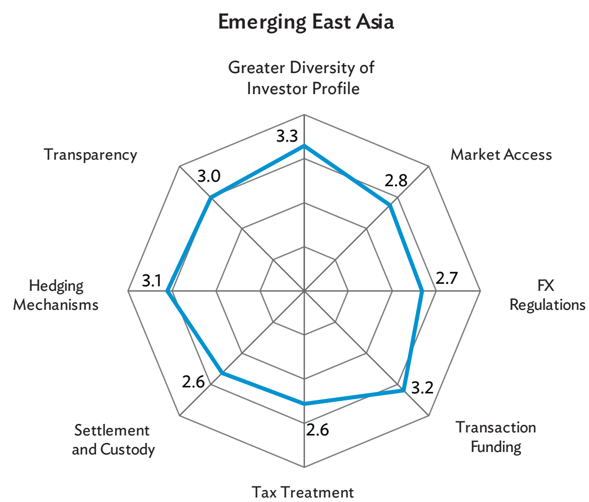
The 2016 *AsianBondsOnline* Liquidity Survey also assesses qualitative indicators of emerging East Asian bond market liquidity. It gathers information from market participants about their perceptions of the importance of structural issues that could potentially affect liquidity in their respective bond markets. A list of these structural issues and their corresponding descriptions is found below.

i. **Greater Diversity of Investor Profile:** the need to widen the investor base for LCY bonds.
ii. **Market Access:** the degree of ease or difficulty for investors to enter the LCY bond market, taking into account investor registration and investment quotas.
iii. **Foreign Exchange Regulations:** the extent of liberal or restrictive foreign exchange, capital investment, and repatriation policies.
iv. **Transaction Funding:** the need for funding availability through active and developed money and repo markets.
v. **Tax Treatment:** the importance of reducing withholding taxes on LCY bonds.
vi. **Settlement and Custody:** the significance of straight-through clearing processes, timely bond trade settlements, and a global custodian or accredited custodian(s).
vii. **Hedging Mechanisms:** the need to have an active and efficient derivatives market.
viii. **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 respondents were asked how important each of the eight structural issues were with respect to liquidity: 1 – Not Important, 2 – Somewhat Important, 3 – Important, and 4 – Very Important.

The survey results show that Greater Diversity of Investor Profile was the most important structural issue for promoting liquidity in the emerging East Asian government bond market. The regional average of 3.3 for this structural issue topped the averages for all other structural issues **(Figure 21)**. Three other structural issues garnered regional averages of 3.0 or higher: Transaction Funding (3.2), Hedging Mechanisms (3.1), and Transparency (3.0). Other averages included Market Access (2.8), Foreign Exchange Regulations (2.7), Settlement and Custody (2.6), and Tax Treatment (2.6).

Figure 21: 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* 2016 Local Currency Bond Market Liquidity Survey.

Table 15 summarizes the regulations governing cross-border portfolio investment in emerging East Asian markets. **Table 16** provides a summary of tax treatment issues in emerging East Asian bond markets.

Compared to the previous year's survey results, Greater Diversity of Investor Profile remained the most important

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 bonds subject to quotas but interbank-traded bond 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 the 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 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 Hong Kong Monetary Authority 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 9 December 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 dividents arising from investments.
Philippines	Registration of money market instruments purchased by nonresidents 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 nonresidents 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. 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. In September 2014, 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 back 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 back 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 = Thail baht, USD = United States dollar.
Sources: International Monetary Fund's *Annual Report on Exchange Arrangements and Exchange Restrictions 2016,* and local market sources.

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.	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 appliable 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 appliable treaties.	Subject to a 5% withholding tax.

Source: *AsianBondsOnline*.

structural issue, although its regional average was down in 2016, similar to Foreign Exchange Regulations, Settlement and Custody, Tax Treatment, and Transparency. The regional averages for Hedging Mechanisms, Market Access, and Transaction Funding remained unchanged between 2015 and 2016.

By individual LCY government bond market, Greater Diversity of Investor Profile was found to be the most important structural issue in Hong Kong, China; Indonesia; the Philippines; and Singapore **(Figure 22)**. The significance of widening the investor base for LCY government bonds was highlighted by survey respondents largely due to the existence of certain dominant investor groups in these markets. Financial institutions invest and trade actively in domestic bond markets in Hong Kong, China and Singapore given their status as international financial hubs. In Indonesia, foreign investors and domestic banks are the two largest investor groups in the LCY government bond market. In the Philippines, financial institutions—banks, investment houses, and insurance companies—are among the major institutional holders of LCY government securities.

Transaction Funding was ranked the most important structural issue with respect to LCY government bond market liquidity in the PRC and Viet Nam. Survey respondents in both economies gave high importance to funding availability through active and developed money markets, including repo markets. Repo markets are relatively liquid in the PRC and positively contribute to liquidity in the government bond market. In Viet Nam, in particular, developing the repo market could boost liquidity.

In the Republic of Korea, three structural issues—Greater Diversity of Investor Profile, Hedging Mechanisms, and Transparency—each received the highest average of 3.3 apiece and were considered as being equally important by survey respondents in terms of LCY government bond market liquidity. The need to widen the investor base for the Republic of Korea's government bonds was found to be relatively important as domestic financial institutions like banks and insurance companies invest heavily in government bonds. Interest rate futures, which are derivative products used to hedge exposures on fixed-income instruments, are available in the Korea Exchange, a securities exchange operator in the Republic of Korea,

Figure 22: Structural Issues for Individual Local Currency Government Bond Markets

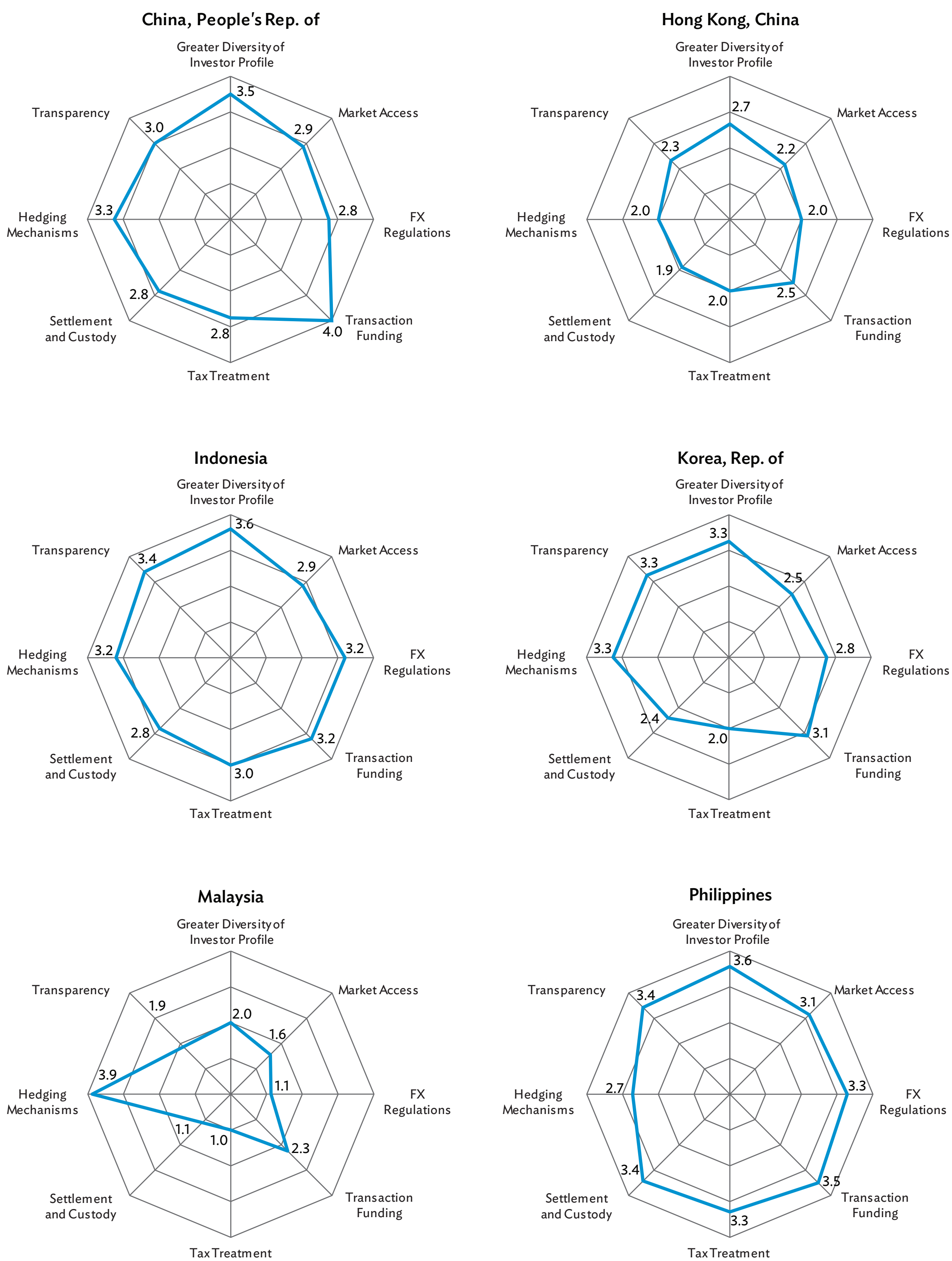

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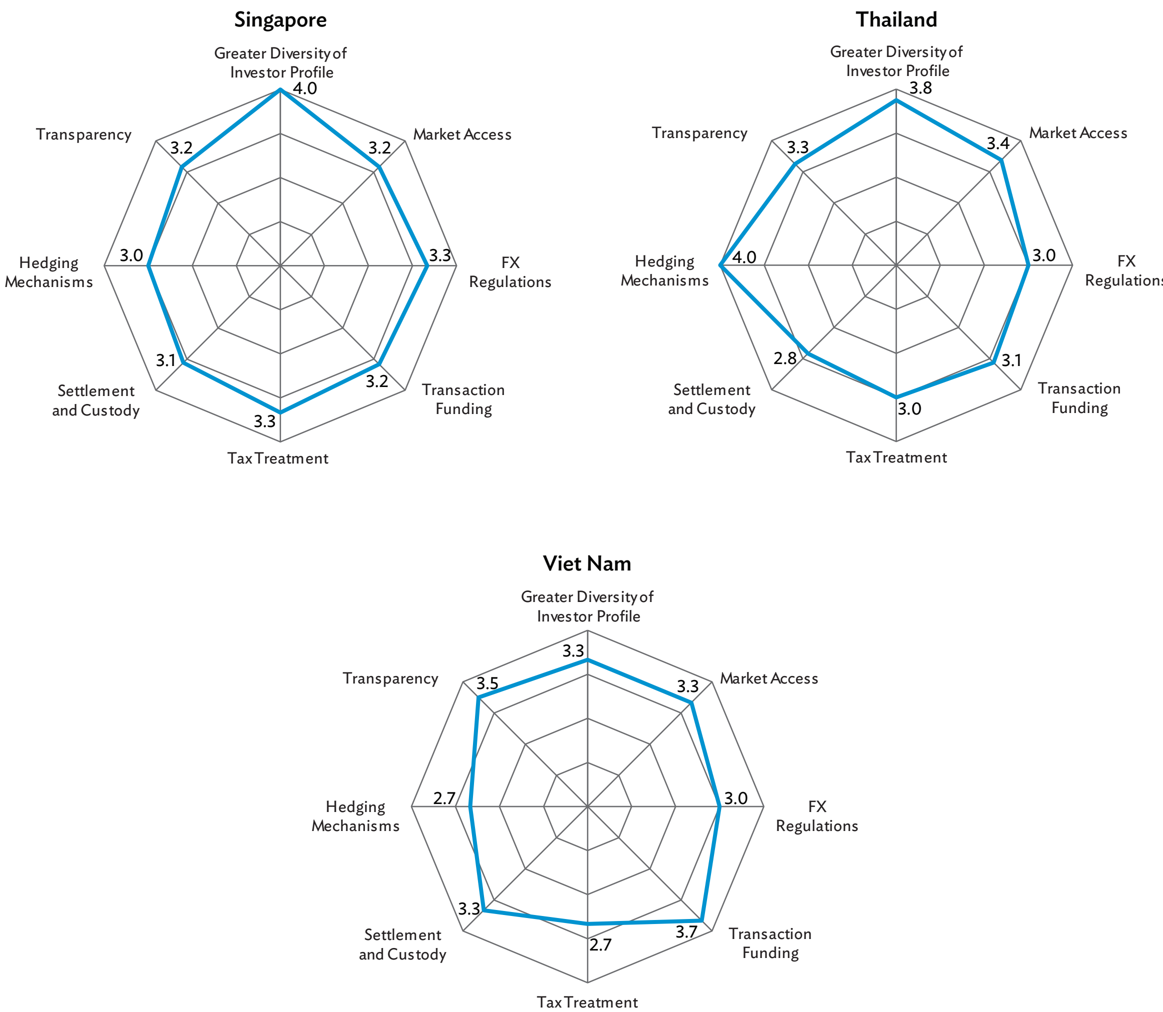
Figure 22 *continued*



FX = foreign exchange.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

with the 3-year KTB Futures and the 10-year KTB Futures being the most actively traded. Information on daily bond market activity is available through the Korea Exchange and the Korea Financial Investment Association, which operates the over-the-counter bond market in the Republic of Korea.

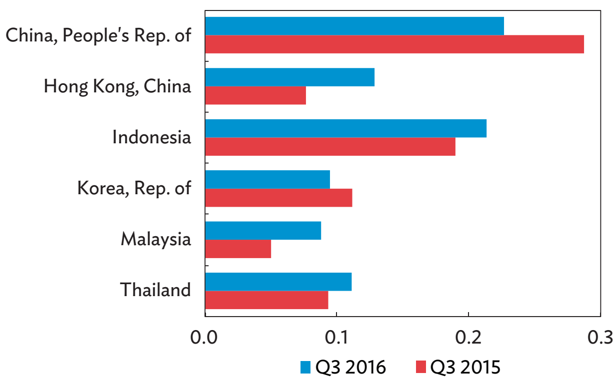
Hedging Mechanisms were identified by survey respondents in Malaysia and Thailand as the most important structural issue in their respective government bond markets. The exchange holding company, Bursa Malaysia, offers four types of interest rate futures to market participants: the 3-month Kuala Lumpur Interbank Offered Rate Futures; and the interest rate futures on the 3-year, 5-year, and 10-year MGSs. Interest rate futures are also available in Thailand, including the 3-month Bangkok Interbank Offered Rate Futures and the 5-year Government Bond Futures offered on the Thailand Futures Exchange.

Quantitative Indicators for Corporate Bond Markets

The region's corporate bond market is significantly less liquid than its government counterpart. Corporate bonds tend to be purchased by buy-and-hold investors. There is also additional due diligence required in assessing corporate bond investments. Liquidity for most corporate bonds tends to be limited to the period following initial issuance up to few months after. Within domestic corporate bond markets, liquidity for individual bonds often varies depending on the issuer. Large corporate bond issuances tend to attract more liquidity as do bonds that are better-rated and issued by more well-known firms.

Figure 23 details the quarterly turnover ratios for LCY corporate bonds in emerging East Asia. (Data for corporate bond turnover ratios were unavailable for the Philippines, Singapore, and Viet Nam.)

Figure 23: 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 during each 3-month period.
2. For Hong Kong, China and Thailand, data for third quarter of 2016 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).

The PRC remains the market with the highest corporate bond turnover ratio, while Malaysia has the lowest. Corporate bond turnover ratios improved in 2016 in Hong Kong, China; Indonesia; Malaysia; and Thailand.

Market participants were asked similar questions to assess their respective corporate bond markets as were asked about government bond markets. **Table 17** summarizes the responses of survey participants in terms of average issue size, bid–ask spreads, and average trading size. One key difference between corporate and government bond markets is that bid–ask spreads for corporate bond issues may not be directly comparable as liquidity for specific corporate bond market issues may exist only for a period of a few days to a few months.

In several corporate bond markets in emerging East Asia, a widening bid–ask spread was observed in 2016, including in the PRC, the Philippines, Singapore, and Thailand. Bid–ask spreads fell for corporate bonds in Hong Kong, China and were mostly unchanged in Indonesia, the Republic of Korea, and Malaysia.

Reflecting its status as a well-developed corporate bond market with bonds outstanding exceeding that in the government bond market, the Republic of Korea had the lowest bid–ask spread. The highest bid–ask spread was noted in the Philippines where the corporate bond market is dominated by a small number of issuers, with the top 10 issuers accounting for more than half of all outstanding corporate bonds at the end of September. The Philippines, along with Indonesia, also had the smallest average transaction size of USD0.3 million.

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)	196.8	42.6	50.7	76.1	104.3	83.0	162.2	45.8	25.8	87.5
Typical Bid–Ask Spread for New Corporate Issues	Average (bps)	10.5	11.5	29.2	3.9	8.4	68.8	10.0	6.7	30.0	18.6
	SD	4.3	–	22.6	3.3	2.9	54.1	4.3	3.1	28.3	20.6
	CV	0.4	–	0.8	0.8	0.3	0.8	0.4	0.5	0.9	1.1
Typical Transaction Size of LCY Corporate Bonds	Average (USD million)	7.9	7.1	0.3	9.1	1.6	0.3	1.7	1.3	12.7	4.7
	SD	0.5	–	0.1	0.0	0.7	0.3	1.8	0.4	10.1	4.6
	CV	0.1	–	0.3	0.0	0.4	1.3	1.0	0.3	0.8	1.0

– = 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.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

Characteristics of Individual Corporate Bond Markets

People's Republic of China

Participants in the PRC corporate bond market noted that state-owned enterprise bonds, medium-term notes, and commercial paper tend to be the most liquid. These three instrument types are traded on the interbank bond market, which comprises banks and institutional investors such as insurance companies.

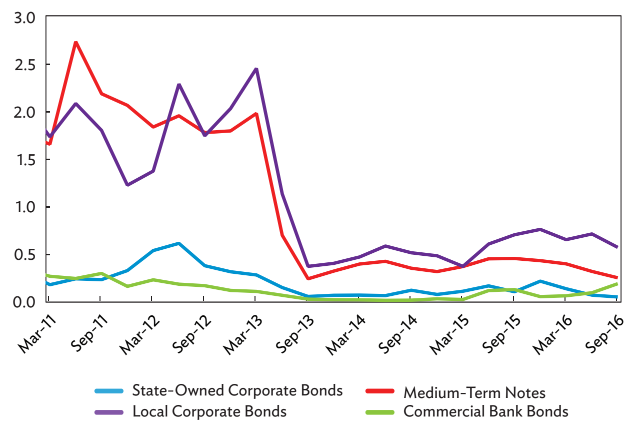
These three types of corporate bonds tend to have lower bid–ask spreads than other types such as local corporate bonds **(Table 18)**. Commercial bank bonds had the lowest bid–ask spread in 2016 at 5.0 bps. Commercial bank bonds are not traded by all banks, leading to an increased supply of commercial bank bonds for other institutional investors in search of yield.

The average issue size of commercial bank bonds rose substantially to CNY5.7 billion in 2016 from CNY2.6 billion in 2015 due to the fund-raising activities of banks.

Liquidity for corporate bonds in 2016 was slightly worse due to concerns over corporate bond defaults causing an increase in bid–ask spreads. The average bid–ask spread for state-owned enterprise bonds rose to 10.5 bps in 2016 from 5.8 bps in 2015. For local corporate bonds, the bid–ask spread rose to 13.3 bps in 2016 from 8.8 bps in the prior year, while the spread for medium-term notes rose to 10.5 bps from 5.5 bps. Commercial paper's average bid–ask spread rose to 10.0 bps from 8.3 bps during the review period.

The rise in bid–ask spreads was due to increased volatility in corporate bond markets on concerns over corporate bond defaults in the market. However, there has been some demand for corporate bonds from investors switching from equities and other investors that are seeking yield. Concerns over corporate bond defaults were also reflected in the slight declines in turnover ratios for local corporate bonds, state-owned enterprise bonds, and medium-term notes in Q3 2016 **(Figure 24)**. The slight rise in the commercial bank bond turnover ratio was partially a function of the already low bid–ask spread.

Figure 24: Local Currency Corporate Bond Turnover Ratios in the People's Republic of China



Source: *ChinaBond*.

Indonesia

The corporate bond market in Indonesia is similar to most corporate bond markets in the region in that it is deemed illiquid with investors mostly holding bonds until maturity. The lack of liquidity is evident in the wider bid–ask spread for corporate bonds relative to government bonds. The average bid–ask spread for a new corporate bond issue fell marginally to 29.2 bps in 2016 from 29.5 bps in 2015.

Most market participants noted that liquidity for corporate bonds is largely limited to the issuances of

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)	1,200.0	1,202.9	1,313.1	5,765.2	1,287.5
Bid–Ask Spread (bps)	10.5	13.3	10.5	5.0	10.0
Average Trading Size (CNY million)	52.5	51.7	52.5	100.0	60.0

bps = basis points, CNY = Chinese renminbi, MTNs = medium-term notes, SOE = state-owned enterprise.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

state-owned entities, banks, and financial institutions. The bond issues of familiar corporate names, particularly in consumer-related industries, also command some liquidity as most investors tend to only be attracted to higher-rated corporate bonds. Liquidity for new corporate bonds does not last for long after issuance. Some participants cited an average of 1–3 months, while others say trading can last only 1–2 weeks depending on the name of the issuer and its rating.

At the end of September, Indonesia's entire corporate bond market comprised 104 firms. Most of these firms have issued bonds to refinance their maturing debt. A lengthy issuance process that lasts at least 2–3 months hinders corporates ability to tap the bond market for their funding requirements. However, recent news indicated an increase in corporate bond issuance due to the reluctance of banks to adjust their lending rates.

To further develop liquidity for corporate bonds, some market participants cited the need for regulations to encourage corporates to issue more bonds and increase the available supply. Another factor affecting liquidity is the absence of market makers. Some participants suggested that tax incentives for both issuers and investors should also be provided.

Republic of Korea

Survey results show the average bid–ask spreads in the Republic of Korea to be relatively low (and identical) for special public bonds and financial debentures, but relatively high for private corporate bonds, suggesting that the former are relatively liquid compared to the latter **(Table 19)**. Both special public bonds and financial debentures have average issue sizes of more than KRW100 billion. For private corporate bonds, the average issue size is slightly more than KRW20 billion. Across the three corporate bond types, survey respondents noted similar average trading sizes of about KRW10 billion each, which was unchanged between 2015 and 2016. Average bid–ask spreads were higher in 2016 than in 2015 for special public bonds and financial debentures, but were lower for private corporate bonds. The average issue size was relatively small for all three corporate bond types.

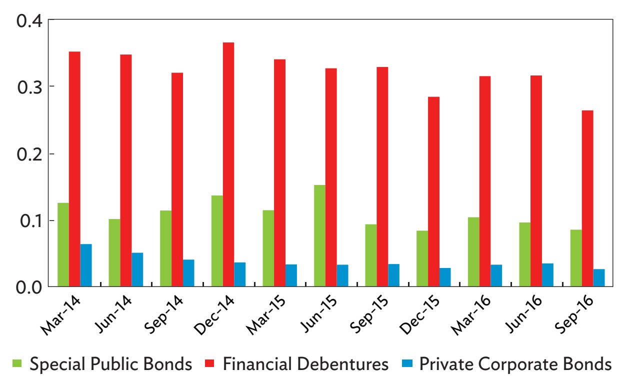
Table 19: Local Currency Corporate Bond Survey Results—Republic of Korea

	Special Public Bonds	Financial Debentures	Private Corporate Bonds
Average Issue Size (KRW billion)	127.4	103.2	20.8
Bid–Ask Spread (bps)	2.3	2.3	7.2
Average Trading Size (KRW billion)	10.0	10.0	10.0

bps = basis points, KRW = Korean won.
Note: Special public bonds are bonds issued by state-owned enterprises, financial debentures are issued mostly by banks and financing companies, and private corporate bonds are issued mostly by securities companies and by private nonfinancial corporates.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

On a quarterly basis, the turnover ratio for LCY corporate bonds stood at 0.09 in Q3 2016, which was less than the 0.11 recorded in both the first and second quarters of this year, implying a tightening in corporate bond market. Across all three types of corporate bonds, turnover ratios showed a downward quarterly trend, with the drop being the sharpest for financial debentures **(Figure 25)**.

Figure 25: Turnover Ratios for Special Public Bonds, Financial Debentures, and Private Corporate Bonds in the Republic of Korea



Source: EDAILY *BondWeb*.

Survey respondents highlighted recent measures undertaken to support the development of the corporate bond market, including reforming the issuance system for Qualified Institutional Buyers securities registered with the Korea Financial Investment Association as well as formulating plans for the restructuring and financing of shipbuilding and shipping companies in the Republic of Korea.

Malaysia

Liquidity in Malaysia's corporate bond market has improved this year, with the quarterly turnover ratio rising to 0.09 in Q3 2016 from 0.05 in Q3 2015. The higher turnover reflects increased market activity in the secondary market relative to the average amount of bonds outstanding. Trading volume for Q3 2016 rose 97.3% y-o-y to MYR46.5 billion, while average bonds outstanding increased at a slower pace of 12.2% y-o-y to MYR528 billion.

Survey participants gave a mixed assessment with some saying liquidity conditions were the same as last year. The results of the survey show the average bid–ask spreads to be almost the same in 2015 (8.5 bps) and 2016 (8.4 bps) **(Table 20)**. Participants noted the lack of supply of corporate bonds in the market this year. Moreover, the corporate bond market in Malaysia remains a buy-and-hold market, with post-issuance trading generally only observed for large AAA-rated bonds. Survey respondents suggest assigning more market makers to help improve liquidity.

Table 20: Local Currency Corporate Bond Survey Results—Malaysia

	Corporate Bonds
Average Issue Size (MYR million)	431.6
Bid–Ask Spread (bps)	8.4
Average Trading Size (MYR million)	6.4

bps = basis points, MYR = Malaysian ringgit.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

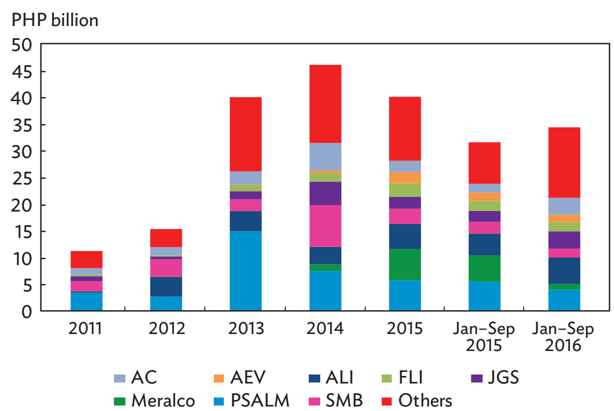
Market participants foresee more issuance of government-guaranteed bonds amid an increase in public infrastructure projects. Effective 1 January 2017, the mandatory credit rating of corporate bonds will be removed and unrated bonds will be allowed to be traded in the secondary market. While survey respondents took note of this regulatory development, the effect on Malaysia's corporate bond market liquidity is yet to be determined as investor preferences are still concentrated on higher-rated bonds. Furthermore, certain investors such as pension funds and life insurance companies have limitations on including unrated bonds in their portfolios.

Philippines

The average bid–ask spread for Philippine LCY corporate bonds was 69 bps in 2016, up from 23 bps in 2015, while the average trading size fell to PHP12.3 million from PHP20.8 million. Some survey respondents noted the lack of liquidity in the corporate bond market as bond investors usually hold until maturity, while others described newly-issued corporate bonds as liquid only for up to 1 month after issuance or until another corporate bond with a similar tenor is issued. Corporate bonds in the Philippines remain relatively less liquid overall compared to government securities. Among the measures proposed in the survey to improve corporate bond market liquidity were the establishment of a repo market, greater issuance of corporate bonds, and improved access for retail investors.

The total trading volume of corporate securities, as reported by the Philippine Dealing & Exchange Corporation, rose to PHP33.5 billion in the first 9 months of 2016 from PHP31.5 billion in January–September 2015, suggesting improving corporate bond market liquidity **(Figure 26)**. (Traded corporate securities include the bonds of three government-owned and -controlled corporations: Land Bank of the Philippines, National Home Mortgage Finance Corporation, and Power Sector Assets and Liabilities Management Corporation.)

Figure 26: PDEx 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; 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 (PDEx).

Singapore

Survey respondents in Singapore quoted an average bid–ask spread of 10.0 bps for new corporate issues in 2016, up from 6.0 bps in 2015 **(Table 21)**. Average issue size rose to SGD221.1 million in 2016 from SGD141.5 million in the previous year. (Corporate issues in Singapore cover a range of bonds, including quasi-government bonds, high-grade bonds, and unrated high-risk bonds.) Market participants cited the recent default of a handful of commodity-related bonds in the higher-risk category of the corporate bond market as a consequence of burgeoning bond diversity in Singapore's market.

Table 21: Local Currency Corporate Bond Survey Results—Singapore

	Corporate Bonds
Average Issue Size (SGD million)	221.1
Bid–Ask Spread (bps)	10.0
Average Trading Size (SGD million)	2.3

bps = basis points, SGD = Singapore dollar.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

Except for certain segments such as commodity-related and riskier unrated bonds, there is high confidence in the outlook for the Singapore corporate bond market. The market is still in the process of developing a larger and more diversified investor base. Liquidity disappears immediately after issuance for all but a few of the highest-rated issues, mainly due to the buy-and-hold tendencies of many investors. In the secondary market, high-grade corporate bonds, which tend to be scarce, are relatively more liquid than riskier bonds. Some survey respondents suggested that the increased participation of international rating agencies in the Singapore bond market would draw in more global investors.

Thailand

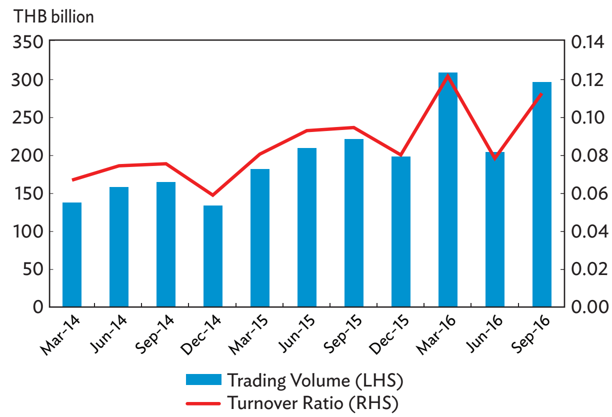
New issues of Thai LCY corporate bonds in 2016 had an average bid–ask spread of 6.7 bps compared with the average of 4.2 bps in 2015 **(Table 22)**. Trading volume increased to THB295.1 billion in Q3 2016 from THB220.7 billion in Q3 2015, while the turnover ratio also rose to 0.11 in Q3 2016 from 0.09 in Q3 2015 **(Figure 27)**. Increased trading values and turnover ratios suggest Thai corporate bond market liquidity has improved in 2016. The average trading size is around THB45 million, while the average issue size stands at THB1.6 billion.

Table 22: Local Currency Corporate Bond Survey Results—Thailand

	Corporate Bonds
Average Issue Size (THB million)	1,585.9
Bid–Ask Spread (bps)	6.7
Average Trading Size (THB million)	45.0

bps = basis points, THB = Thai baht.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

Figure 27: Trading Volume and Turnover Ratio for Local Currency Corporate Bonds in Thailand



LHS = left-hand side, RHS = right-hand side, THB = Thai baht.
Sources: Bank of Thailand and the Thai Bond Market Association.

Viet Nam

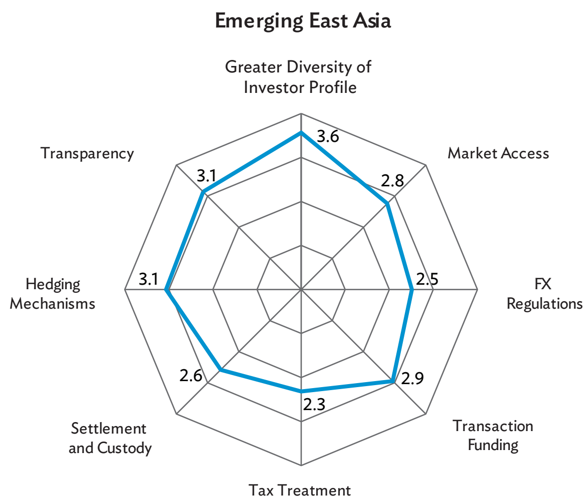
The typical bid–ask spread for newly issued corporate bonds in Viet Nam in 2016 stood at 30.0 bps, which is wider compared with the bid–ask spread for government bonds. In 2015, survey participants provided no quotes for bid–ask spreads, noting that most transactions were privately negotiated.

Liquidity in Viet Nam's corporate bond market remains very limited. Market participants cited the absence of a secondary market as the reason behind this as most corporate bonds are held until maturity by commercial banks. Liquidity is also limited due to the small size of the corporate bond market. Most corporates prefer to apply for bank loans due to their familiarity with the process and the quicker approval process. To improve liquidity, some market participants mentioned the need for the involvement of credit rating agencies.

Qualitative Indicators for Corporate Bond Markets

Figure 28 depicts the perceptions of market participants of various structural and regulatory issues in the region's corporate bond markets.

Figure 28: 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* 2016 LCY Bond Market Liquidity Survey.

Comparing the rankings of structural issues for the corporate bond market with that of the government bond market shows both similarities and differences. For example, survey respondents ranked the importance of Greater Diversity of Investor Profile as the most important issue in both the corporate and government bond market. The survey results show that more diversity among investors is key to creating a variety of investment decisions in the trading of bonds.

With the exception of the Republic of Korea, Greater Diversity of Investor Profile received a score of 3.0 or higher in all of the region's corporate bond markets **(Figure 29)**. As corporate bond market liquidity tends to lag that of government markets, one way to improve liquidity is to diversify the investor base. In addition, foreign investors tend to hold fewer corporate bonds than government bonds.

Survey participants ranked Transparency and Hedging Mechanisms as the next most important issues for corporate bond markets. Transparency was ranked only fourth in the government bond market survey. The discrepancy is due to the increased requirements for due diligence in the evaluation of corporate bonds. Respondents in the Indonesian market gave Transparency the highest rating at 3.6, which is the result of there being difficulties in price discovery despite all bonds being rated.

Hedging Mechanisms are equally important in the corporate bond markets, while ranking third for government bond markets. Risk mitigation requirements for the two markets are different. While interest rate risk can be managed for both government and corporate bonds with similar instruments, corporate bonds have an added risk due to the greater possibility of default. Most investors tend to manage this through the proper evaluation of the credit risk of the issuers. Respondents in Indonesia and Malaysia rated Hedging Mechanisms at 3.5, while it had the lowest score in Viet Nam (2.3), possibly due to the very small size of the market in which the trading of corporate bonds is practically nil.

In the region's corporate and government bond markets, investors assigned Tax Treatment the lowest level of importance with a rating of 2.3 in the corporate bond market and 2.6 in the government bond market. Among individual corporate bond markets, Thailand rated Tax Treatment the highest at 3.7 as the government levies a 15% withholding tax on corporate bonds. While this is not the highest withholding tax rate in the region, there are differences in tax rates for investors, with individuals having a 15% withholding tax rate while corporates are only subject to 1%.

Respondents in Hong Kong, China; the Republic of Korea; and Malaysia rated Market Access as not being very important with a score of 2.5 or lower in each market. All three of these bond markets are relatively more developed than others in the region and are relatively open to foreign investors.

Similarly, Hong Kong, China and Malaysia provided the lowest-rated scores for FX Regulations of 1.0 and 1.1, respectively. The PRC, which until recently had more stringent capital controls, rated FX Regulations at 2.3, partly because the corporate bond market in the PRC is relatively liquid compared with other markets in the region as evidenced by its high corporate bond turnover

Figure 29: Structural Issues for Individual Local Currency Corporate Bond Markets

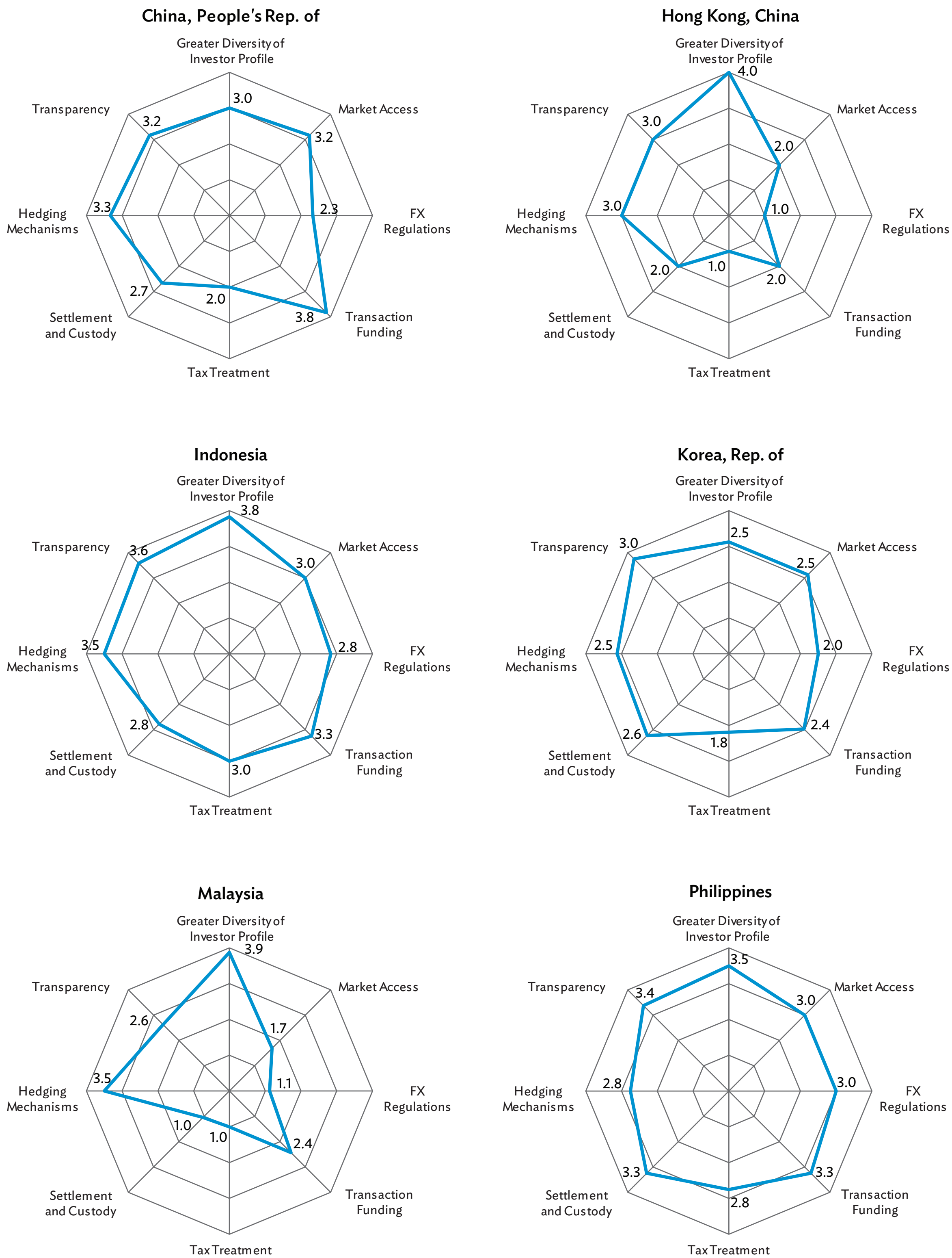


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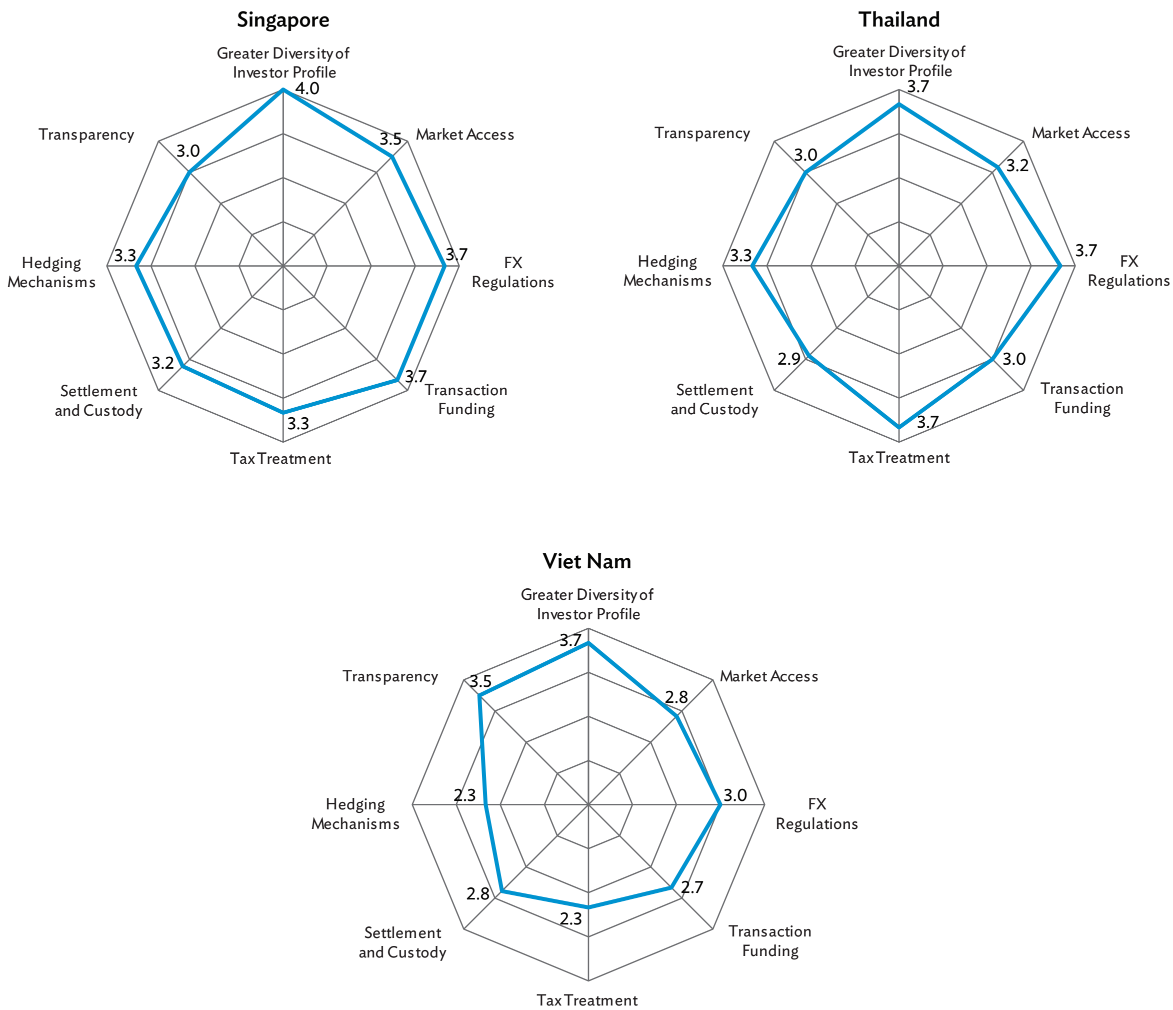
Figure 29 *continued*



FX = foreign exchange.
Source: *AsianBondsOnline* 2016 Local Currency Bond Market Liquidity Survey.

ratio. Market participants' perception is that capital controls play less of a factor in determining liquidity in this corporate bond market.

Survey respondents in the PRC rated Transaction Funding the highest among all markets in the region with a score of 3.8. This is because the PRC's bond market is highly sensitive to the liquidity conditions of its financial institutions. When the new value-added tax system was implemented, money market rates rose on the possibility that government bond repos would be taxed until a clarification was issued by the government.

The Philippines had the highest score in the region for Settlement and Custody at 3.3 due to differences between the trading and settlement of corporate bonds and government bonds in this market. The system for trading and settlement of government bonds developed first while that for corporate bonds lagged.

Infrastructure Bond Market Developments in Asia: Challenges and Solutions

Introduction

Mounting fiscal burdens in the aftermath of the global financial crisis and decreases in bank lending driven by Basel III capital requirements have led to renewed focus on private sector participation in infrastructure financing. Asia's relatively high economic growth rates and huge infrastructure demand, which has been estimated at USD8 trillion for the 2010–2020 period, offer the potential for increased private sector participation in infrastructure projects (Asian Development Bank Institute 2010).[8] According to the Organisation for Economic Co-operation and Development (2006), Asia accounts for about 40% of global infrastructure investment demand of USD 1.9 trillion per year.

Large banks in developed economies have traditionally been the major financiers of infrastructure projects in emerging economies. According to the World Economic Forum (2011, 2014), commercial banks in developed economies provided an estimated 90% of all private debt for infrastructure financing in 1999–2009. However, banks with short-term liabilities are not well suited to hold long-term assets on their balances sheets. Generally, revenues from infrastructure projects are generated in local currency while the major financing sources (foreign banks) lend in foreign currency. This situation poses the type of "double-mismatch problem" in terms of maturity and currency that was experienced during the 1997/98 Asian financial crisis.[9] Given that infrastructure development is critical to promoting economic growth, the existing gap in infrastructure financing is also a threat to long-term economic growth in Asia.

Infrastructure firms often carry out projects by setting up a special purpose company through which they can raise capital. From the perspective of financing, equity capital mostly consists of investments from the firm or an infrastructure fund, while debt capital includes infrastructure bonds or loans from various international organizations and public and private domestic financial institutions. In some cases, the special purpose company directly raises capital by issuing stocks or bonds.[10]

Each stage of an infrastructure project has different risks and expected returns, and thus requires a different financing method. During the early stage of planning and construction (greenfield), equity investments and bank loans represent the majority of financing. Once the project enters the mature stage (brownfield) and creates stable cashflows, capital can be raised via bond issuance. The participation of international organizations and/or state-owned banks can help an infrastructure project enhance its viability by facilitating the large-scale financing of long-term capital.[11] Investors in infrastructure projects include a diverse range of retail and institutional investors such as pension funds, insurers, and investment trusts.

Infrastructure bonds are defined as bonds issued to finance infrastructure projects of public interest such as railways, toll roads, and airports, among others. It is necessary for emerging economies to develop a market for infrastructure bonds that can raise the capital needed for infrastructure projects, thereby filling the gap left by commercial banks' increasing reluctance to extend loans in response to the Basel III capital accords. The scope of

[8] In this chapter, Asia refers to Brunei Darussalam; the People's Republic of China; Hong Kong, China; Indonesia; Japan; the Republic of Korea; the Lao People's Democratic Republic; Malaysia; the Philippines; Singapore; and Thailand.

[9] For further discussion on currency and maturity mismatch, currency internationalization, and bond market development in Asia, refer to Hyun and Shigehito (2014).

[10] The issuance of general obligation bonds is based on the credibility of the company, while infrastructure (project) bonds are based on the expected future cash flows from a specific project.

[11] When public resources are used, it is critical to design a risk-sharing mechanism to prevent moral hazard and to strike a balance between the public nature of the project and its commercial viability, which is the incentive for private sector participation. For more details on this topic, please refer to S. Hyun, T. Nishizawa, and N. Yoshino. 2008. Exploring the Use of Revenue Bonds for Infrastructure Financing in Asia. *JBICI Discussion Paper*. No. 15. Tokyo: Japan Bank for International Cooperation Institute.

infrastructure has evolved significantly in recent decades and now comprises a broad range that includes traditional infrastructure projects such as power, oil and gas, water, hospitals, schools, and prisons, as well as low-carbon, climate-resilient infrastructure such as renewable energy projects.

The principal and interest payments for infrastructure bonds are based on the expected cash flows from a project rather than the issuer's credibility. Hence, such bonds require an independent, differentiated evaluation method that takes into account uncertainty in expected cash flows in the future. Infrastructure bonds are closely associated with the development of bond markets and therefore are primarily issued in developed economies with mature markets (e.g., Australia, Canada, Europe, and the United States).

Against this backdrop, local currency bonds can serve as an alternative avenue for infrastructure financing in Asia. The advantages of bond financing for long-term infrastructure projects and existing financing gaps provide the impetus for the development of local currency bond markets in developing economies. This was the rationale behind the creation of the Asian Bond Markets Initiative, which was launched in 2003 to strengthen the resilience of the region's financial system by developing local currency bond markets as an alternative to using foreign-currency-denominated, short-term bank loans for long-term investment financing.[12] Bonds are also suitable financial products for institutional investors with long-term liabilities, such as pension funds and insurers, who are increasing their allocation in infrastructure investments amid the current low interest rate environment. The emergence of more institutional investors in Asia will further spur the development of infrastructure bond markets.

This special chapter will focus on the appropriateness of bonds for infrastructure financing and use empirical analysis to identify the major determinants of infrastructure bond market development in Asia, which in turn can help boost the region's long-term economic growth. This chapter will also address the fundamental challenges to developing infrastructure bond markets in Asia and apply lessons learned from Europe where infrastructure bonds are more commonly used.[13]

Determinants of Bond Market Development

Although local currency bond financing can help plug financing gaps for long-term infrastructure projects in Asia, the region's infrastructure bond market is at a nascent stage of development in terms of issuance relative to the high level of investment required. What are the factors that make local currency bond financing difficult for infrastructure projects in the region? This section attempts to answer this question while reviewing the determinants of bond market development in the existing literature. The analysis is then extended to the determinants of functioning infrastructure bond markets as a subset of bond markets.

There are several examples in the literature that investigate the determinants of bond market development, including Burger and Warnock (2006); Claessens, Klingebiel, and Schmucker (2007); Borensztein et al. (2008); Adelegan and Radzewicz–Bak (2009); and Burger, Warnock, and Warnock (2011). However, only a few studies have attempted to identify empirically the determinants of bond market development in Asia.

Eichengreen and Luengnaruemitchai (2006) exploit panel data from 41 economies for the period 1990–2001 and find that the size of an economy's gross domestic product (GDP) is positively associated with its bond market development. The size and concentration of the banking system—measured by domestic credit provided by the banking sector and the spread between bank lending and deposit rates, respectively—influences bond market depth. Their findings suggest that institutional quality—measured by adherence to internationally recognized accounting standards, the level of corruption, and bureaucratic quality—is also important for bond market development.

Bhattacharyay (2011) examines the determinants of Asian bond market development using data for 10 Asian

[12] To further develop Asian bond markets, a study exploring new debt instruments for infrastructure financing was proposed at the 10th ASEAN+3 Finance Ministers' Meeting held in Kyoto in May 2007. A copy is available at https://asianbondsonline.adb.org/regional/abmi.php

[13] In this chapter, Europe refers to Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

economies for the period 1998–2008. He investigates government and corporate bond markets both separately and together. Combining the results obtained from various multivariate regression models, he finds that the size of an economy (GDP), stage of economic development (GDP per capita), exchange rate volatility, and spread between bank lending and deposit rates affect the size of government bond markets. Similarly, he finds that the stage of economic development and degree of economic openness (ratio of exports to GDP) impact the depth of corporate bond markets.

Baek and Kim (2013) explore the determinants of domestic bond market development primarily by focusing on nine Asian economies for the period 1997–2010, which covers both the 1997/98 Asian financial crisis and the more recent global financial crisis. They find that economic size (GDP), the level of economic development (GDP per capita), and the size of the banking sector are positively associated with bond market development. Institutional factors such as the strength of legal rights and depth of available credit information also play critical roles in bond market development.

Dung et al. (2016) examine how macroeconomic determinants influence corporate bonds in 90 developed and developing economies over the period 1970–2013. By employing a generalized method of moments (GMM) model, they explore whether exchange rate variability and the openness of an economy have a significant impact on corporate bond markets. They find that current levels of bond issuance are positively correlated with previous levels.

While there are no empirical studies that attempt to analyze the determinants of infrastructure bond market development in Asia, the Asian Development Bank (ADB) (2015) has reviewed the experience of infrastructure bond market development in Asia and lessons learned from developed economies, including the revenue bond market in the United States and the European Union's Project Bond Initiative (PBI).

Ehlers, Packer, and Remolona (2014) provide reasons for why bond financing is difficult. First, infrastructure projects are often complicated and require highly specialized expertise from both governments and investors. Second, there are some risks inherent in infrastructure projects that cannot be controlled by sponsors, including political, regulatory, technological, and macroeconomic risks. Third, bond financing entails co-movement (cyclicality) between total bond markets and infrastructure bond markets. Lastly, the lack of depth and liquidity of domestic local currency bond markets makes bond financing difficult. Their findings suggest that infrastructure bond markets are closely related to bond markets in general. Therefore, existing analysis of bond markets can be extended to infrastructure bond markets and the further development of domestic local currency bond markets will consequently facilitate bond financing for infrastructure projects in Asia.

Empirical Analysis

Data

This study contributes to the literature exploring the determinants of infrastructure bond market development by adding institutional factors that are closely associated with the delivery of infrastructure services in Asia and Europe. In both regions, the experience of financial crisis and credit instability in recent decades has led to the further development of infrastructure bond markets. As ADB (2015) points out, the European Union seeks to facilitate infrastructure bond financing through the PBI by enhancing the credit quality of project bonds issued by private companies. This study attempts to find similarities and differences between Asia and Europe in the context of the PBI.[14] The sample covers 29 economies for the period 2003–2015, thereby incorporating the impact of the global financial crisis and its aftermath on infrastructure bond market development.

In line with Ehlers, Packer, and Remolona (2014), this chapter focuses on bonds that finance economic infrastructure such as roads and electricity (though it excludes the oil, gas, and mining industries), as well as social infrastructure such as schools and health care. This study merges data from Dealogic and Bloomberg on infrastructure bonds issued by national and local governments, government agencies, and government

[14] The PBI was created in response to the global financial crisis and subsequent debt crisis in Europe, which has led to a reduction in financing options for infrastructure projects. Traditional funding options such as public sector debt have become less important in the wake of the European debt crisis. In addition, more stringent capital adequacy requirements under Basel III have made bank loans less preferable.

development banks regardless of whether these bonds are used solely for financing infrastructure projects.[15]

As for the measure of infrastructure bond market development, the size of an economy's infrastructure bond market is expressed as a percentage of GDP. For the explanatory variables, five factors are considered. (See Table A.1 in the Appendix for a list of all the variables.) First, an economy's size, as measured by GDP, is expected to be positively related to bond market development because small economies are more likely to lack the minimum efficient scale needed for the establishment of deep and liquid bond markets (Eichengreen and Luengnaruemitchai 2006).

Second, economic development, as measured by GDP per capita, is assumed to be positively correlated with bond market development as Burger and Warnock (2006) and Eichengreen and Luengnaruemitchai (2006) suggest. And a government's fiscal balance, measured as revenue minus expenditure, is assumed to be negatively correlated with bond market development; that is, a fiscal deficit is closely associated with the development of a government bond market.

Third, financial development is known to facilitate bond market development. Burger and Warnock (2006) find that banking systems develop in parallel with bond markets. Eichengreen and Luengnaruemitchai (2006) suggest that the banking sector's size is complementary to bond market development. As a proxy variable for financial development, banking sector size is measured as the total value of credit provided by banks divided by GDP.[16]

Fourth, proxy variables for volatility are introduced, which are expected to be negatively associated with bond market development. One proxy is the annual inflation rate and the other is the volatility of the exchange rate, which is measured as the standard deviation of monthly changes in the exchange rate. Economies with low, steady inflation rates and more stable exchange rates tend to have larger bond markets.

Fifth, institutional strength—represented by the freedom from corruption index, property rights index, and investment freedom index—is closely associated with the delivery of infrastructure services. Well-protected property rights, low levels of corruption, and greater investment freedom all facilitate infrastructure bond market development. Each of these indexes has a high degree of correlation with one another. (See Table A.2 in the Appendix for more information on these indexes.) The three indexes are therefore combined into an average institutional index that affects the delivery of infrastructure services.

To better understand the differences between Asia and Europe with regard to indicators of infrastructure bond market development, **Table 23** reports the mean standard deviation and number of observations for all variables used in the estimation in the sample period 2003–2015 for 29 economies. The variables differ significantly between Asia and Europe. **Figure 30** and Table 23 show that economies in Europe have relatively developed infrastructure bond markets, with an average bond market size that is equivalent to 11.7% of GDP, which compares with Asian bond markets that average 6.8% of GDP. **Figures 31** and **32** show infrastructure bond issuance for individual economies in Asia and Europe. (See Table A.3 in the Appendix for data on individual economies.)

The generally smaller economies of Asia and the larger discrepancy in the level of economic development between them is reflected by a smaller mean GDP and larger standard deviation in GDP per capita for Asian economies than European economies. These factors can impede the further development of infrastructure bond market liquidity and depth (Eichengreen and Luengnaruemitchai 2004). Measures of institutional factors such as the corruption freedom index, property rights index, and investment freedom index are also higher on average in Europe than in Asia, which means there is a more favorable environment for infrastructure financing in Europe. Weaknesses in institutional factors are a critical barrier to bond market financing for infrastructure projects in Asia.

Most infrastructure bonds in our sample have been rated by at least one of three international rating agencies. The share of infrastructure bonds rated AA or above is about 52% in Europe, while only about 16% of infrastructure

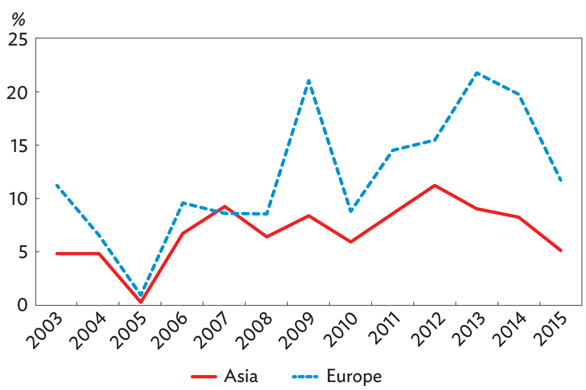
[15] To analyze the determinants of infrastructure bond markets in Asia, bond issuances by supranationals are not included in the database used in this analysis.
[16] With limited data on stock market size (stock market capitalization divided by GDP) due to the merging of exchanges in some instances, stock market size is not included in this analysis.

Table 23: Descriptive Statistics

	Asia			Europe		
	Mean	Standard Deviation	OBS	Mean	Standard Deviation	OBS
Bonds outstanding to GDP (%)	6.845	8.75	143	11.730	21.33	221
ln(GDP)	26.487	1.84	143	26.857	1.33	221
ln(GDP per capita)	9.567	0.97	143	10.608	0.27	221
General government budget balance (% of GDP)	−0.963	3.74	143	−2.756	4.10	221
Inflation (GDP deflator, %)	3.888	4.71	143	1.656	1.43	221
Volatility of the FX rate	1.271	0.70	117	0.724	0.50	221
Domestic credit provided by banks (% of GDP)	94.188	48.03	138	118.837	43.48	221
Average institutional factors	48.031	24.28	143	78.289	12.13	221
Property rights index	48.636	28.10	143	81.425	13.43	221
Corruption index	46.577	24.54	143	75.095	15.62	221
Investment freedom index	48.881	22.90	143	78.348	12.23	221

FX = foreign exchange, GDP = gross domestic product, OBS = observations.
Sources: Bank for International Settlements, Bloomberg LP, Dealogic, the Heritage Foundation, International Monetary Fund, and World Bank.

Figure 30: Infrastructure Bonds Outstanding as Share of Gross Domestic Product



Note: Simple average values for the gross domestic product of all economies in each region are used.
Sources: Bloomberg LP, Dealogic, and World Bank.

bonds in Asia are rated AA or above **(Figure 33)**. About 57% of infrastructure bonds in Asia have an A rating. BBB-rated (investment grade) infrastructure bonds are also frequently issued to finance infrastructure projects in Europe.

Asian infrastructure bond issuance poses a challenge to corporate issuers because their credit ratings are lower than those of their respective governments, which raises the cost of debt financing for corporates. Therefore, policies that offer preferential treatment for Asian local currency bond markets through credit enhancement policies are required to bridge the ratings gap. As an example, the European Investment Bank's Project Bonds Credit Enhancement initiative increases the ratings of infrastructure bonds and thereby decreases funding costs.[17]

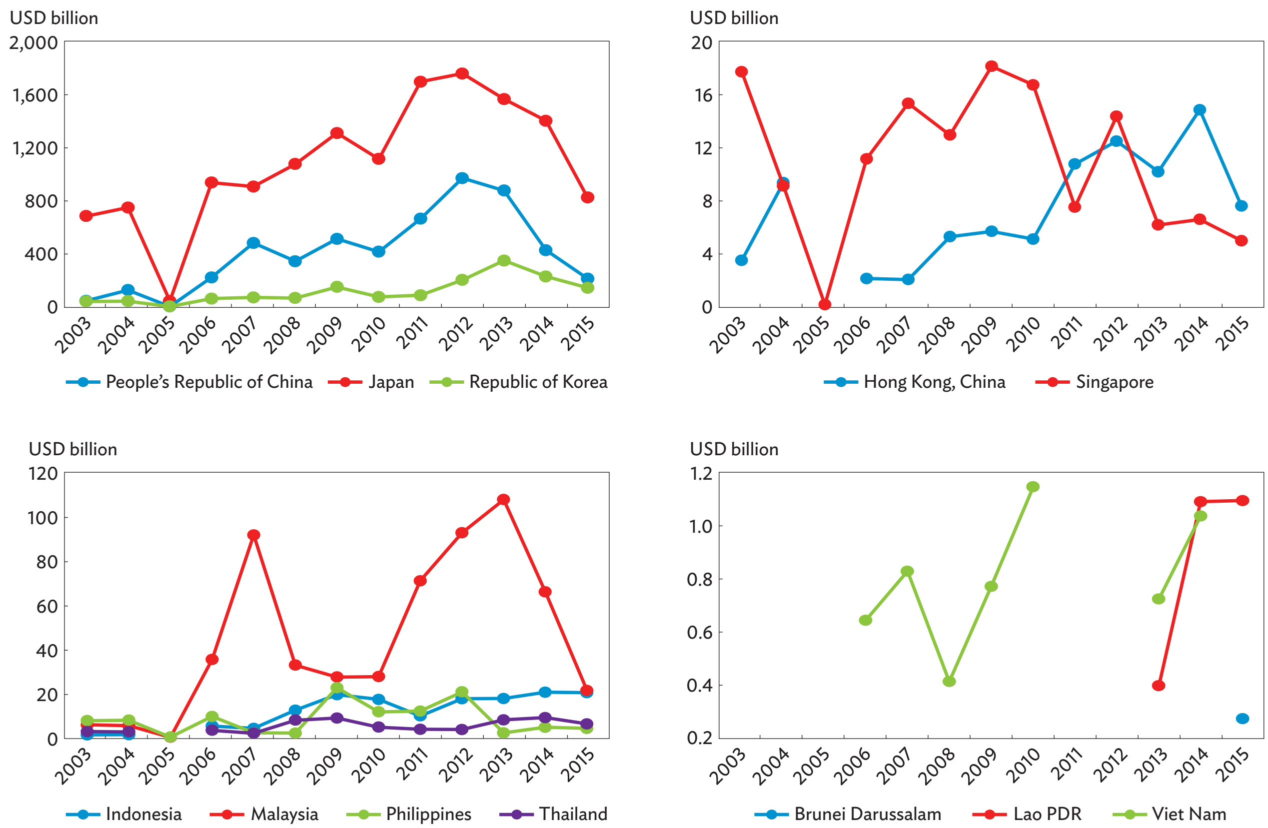
Credit enhancement programs in Asia can facilitate infrastructure bond issuance by providing Asian investors with higher-rated bonds. The Asian Bond Markets Initiative's Credit Guarantee and Investment Facility is expected to help bridge this gap. However, considering the huge investment needs and financing gap in Asia, this facility will need to be strengthened to successfully facilitate infrastructure bond issuance.

Empirical Results

The empirical results show the impact of economy-level explanatory variables on infrastructure bonds while controlling for firm-level characteristics. The regressions are estimated using panel data and (i) an ordinary least squares (OLS) with fixed-effect model and (ii) a generalized least squares (GLS) model with corrections for heteroskedasticity and panel-specific autocorrelation within economies. These two models are in line with the methodologies of Eichengreen and Luengnaruemitchai (2004) and Claessens, Klingebiel, and Schmucker (2007), respectively. In addition, the GMM model is

[17] European investors might be prone to take more risks on BBB-rated bonds than Asian investors.

Figure 31: Infrastructure Bond Issuance in Selected Asian Economies



Lao PDR = Lao People's Democratic Republic, USD = United States dollar.
Sources: Bloomberg LP, Dealogic, and World Bank.

applied to mitigate bias and inconsistencies in estimating the static panel data model.[18] The basic model is

$$y_{i,t} = \alpha + \beta_i X_{i,t} + \varepsilon_{i,t}$$

where $y_{i,t}$ stands for the development of infrastructure bond markets and $X_{i,t}$ is a set of explanatory variables that may affect infrastructure bond market development, including economic size, level of economic development, level of financial sector development, other macroeconomic variables, and institutional variables. $\varepsilon_{i,t}$ is the independent normal distribution error term with mean zero.

Table 24 presents empirical results for the major determinants of infrastructure bond issuance for all sample economies in Asia and Europe. The models are estimated using OLS and GLS, as well as the use of GMM to check the robustness of the models.

The OLS regression checks the relationship between explanatory variables and dependent variables. The results show that the coefficient of economic size is positive and statistically significant at the 1% level. Eichengreen and Luengnaruemitchai (2004) emphasize that liquid securities markets require a certain minimum size to attain efficient scale and therefore the smaller economies of Asia face difficulties in developing their bond markets. The finding that economic size is a critical determinant of infrastructure bond market development is also shown in the results of the OLS and GLS models.

[18] Arellano and Bond (1991) suggest the use of variables in first differences and the use of the bond lags and their determinants as instruments. The Arellano–Bover and Blundell–Bond estimators augment Arellano–Bond by assuming that the first differences of instrument variables are uncorrelated with the fixed effects. This allows the introduction of more instruments and can dramatically improve efficiency. It builds a system of two equations—the original equation and the transformed one—and is known as system GMM, which can solve the endogeneity problem.

Table 24: Determinants of Infrastructure Bond Market Development

	Macroeconomic Factors I	Macroeconomic Factors II	Macroeconomic Stability	Financial Market	Institutional Factors	Model I	Model II
OLS Fixed Effect							
Constant	−162.544***	−49.554**	1.475	−4.066*	−6.648**	−222.449***	−53.696
Europe	0.268	−4.609	7.617***	7.892***	−12.902	−3.060	−6.922
ln(GDP)	6.372***					8.215***	
ln(GDP per capita)		5.758**					4.745
General government budget balance	−0.509***	−0.588***				−0.495***	−0.505***
Inflation (GDP deflator)			−0.503*			−0.015	−0.175
Volatility of the FX rate			1.679*			1.143	0.916
Domestic credit provided by banks				0.054**		−0.005	0.029
Average institutional factors					0.346**	0.174	0.180
Global financial crisis dummy	−2.743	−2.120	−3.257	−2.898	−2.641	−3.816	−2.766
Economy dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.525	0.516	0.501	0.509	0.508	0.520	0.510
Observations	364	364	338	359	364	338	338
GLS Fixed Effect							
Constant	−65.448***	−26.895**	1.656**	−1.872**	−2.631**	−72.741***	−15.468
Europe	5.335***	1.589	7.168***	8.089***	−0.590	3.179	1.591
ln(GDP)	2.529***					2.697***	
ln(GDP per capita)		3.054**					1.270
General government budget balance	−0.535***	−0.518***				−0.553***	−0.546***
Inflation (GDP deflator)			−0.190**			0.068	0.080
Volatility of the FX rate			0.451			0.113	0.028
Domestic credit provided by banks				0.026***		0.013	0.023***
Average institutional factors					0.145**	0.044	0.064
Global financial crisis dummy	−0.522	−0.023	−0.555	−0.273	−0.427	−0.821	−0.272
Economy dummy	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chi^2 statistics	598.136	698.422	455.945	726.517	749.829	495.496	579.735
Observations	364	364	338	359	364	338	338
System GMM							
Constant	4.716	−23.290*	3.955***	2.981**	−0.985	10.465	−63.240
Outstanding bonds to GDP (lag 1)	0.701***	0.674***	0.697***	0.699***	0.691***	0.681***	0.645
Europe	1.458	−1.439	0.545	1.733	−0.512	−1.255	−1.580
ln(GDP)	−0.096					−0.326	
ln(GDP per capita)		2.660*					7.539
General government budget balance	−0.043	−0.184				−0.220**	−0.244
Inflation (GDP deflator)			−0.053			0.048	0.231
Volatility of the FX rate			−0.999			−1.073	−0.610
Domestic credit provided by banks				−0.008		−0.015	−0.018
Average institutional factors					0.068	0.067	−0.118
Global financial crisis dummy	−1.597	−1.483	−0.996	−1.656	−1.647	−0.774	−1.607
AR(1) test p-value	0.251	0.253	0.253	0.250	0.250	0.251	0.244
AR(2) test p-value	0.335	0.338	0.338	0.333	0.333	0.338	0.333
Hansen test p-value	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Chi^2 statistics	6,955.473	7,212.594	6,612.181	8,388.037	8,890.922	15,885.781	14,093.171
Observations	336	336	312	331	336	312	312

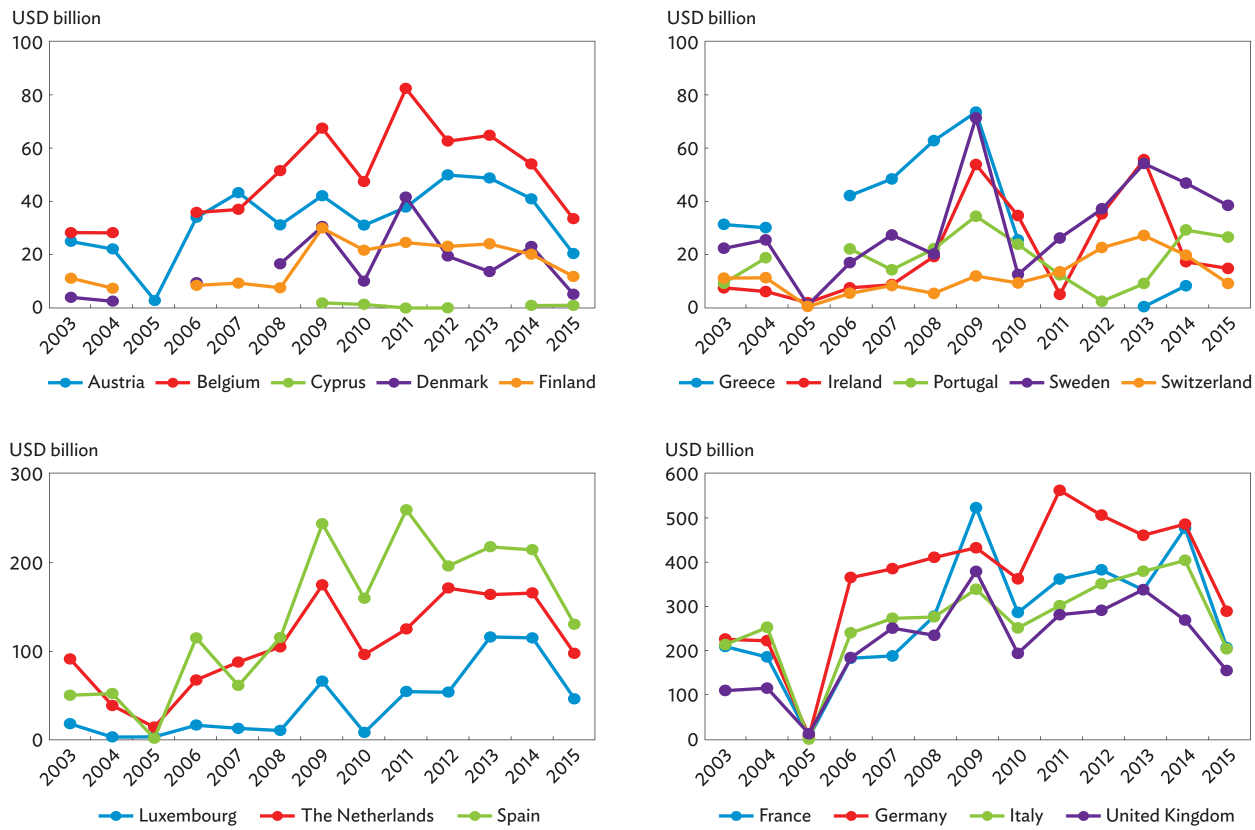
AR = autoregression, FX = foreign exchange, GDP = gross domestic product, GLS = generalized least squares, GMM = generalized method of moments, OLS = ordinary least squares.

Notes:

1. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
2. Macroeconomic factors I refer to GDP and general government budget balance. Macroeconomic factors II include GDP per capita in addition to GDP and general government budget balance. Macroeconomic stability refers to inflation and volatility of exchange rate. Financial market refers to domestic credit by banks. Institutional factors refer to the average of property rights index, corruption index, and investment freedom index. See Appendix Table A.1 for the description of variables.

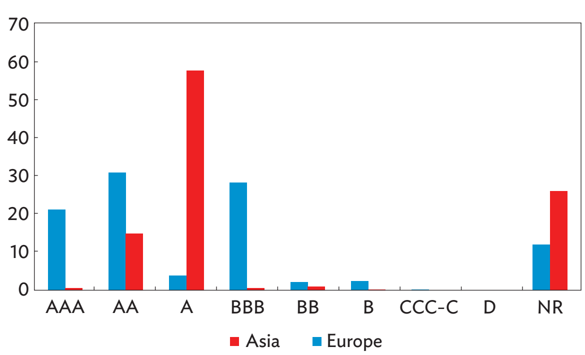
Source: Author's calculations.

Figure 32: Infrastructure Bond Issuance in Selected European Economies



USD = United States dollar.
Sources: Bloomberg LP, Dealogic, and World Bank.

Figure 33: Distribution of Credit Ratings, 2003–2015



NR = not rated.
Sources: Bloomberg LP and Dealogic.

The results also suggest that a general government's budget balance (revenue minus expenditure) negatively affects the infrastructure bond market, which is in line with the findings of Burger and Warnock (2006) and Eichengreen and Luengnaruemitchai (2006). Their results show that a balanced budget is negatively correlated with bond market development. From the regression results in this study, it can be said that economies with fiscal deficits are more likely to utilize bonds to finance infrastructure projects. This result was consistently obtained using the OLS, GLS, and GMM models.

The GLS model shows that domestic credit provided by banks (as a proxy for the banking sector's size) has a positive coefficient and is statistically significant at the 1% level. This indicates that the banking sector, as well as financial sector development in general, is positively correlated with infrastructure bond market development. The system GMM analysis produces results that are in line with Dung et al. (2016). In addition, the current issuance of infrastructure bonds is positively correlated with the lag variable of infrastructure bond issuance, indicating that the long-term bond financing of infrastructure projects depends on previous issuances of infrastructure bonds.

Difference-in-Difference Methodology

The PBI, launched in 2013, is a European Union effort to facilitate bond financing for infrastructure projects. How do we assess its contribution to the development of infrastructure bond markets in Europe? The simplest way is to estimate the structural impact of the PBI on bond market development by using a dummy variable that takes the value of 1 in 2013 and in all subsequent years. A positive and significant coefficient of the PBI dummy indicates that, given all the other variables in explaining the growth of infrastructure bond markets, the post-PBI period is marked by a structural shift in infrastructure bond market development in Europe.

However, it is difficult to interpret directly the result of the dummy variable in the simple regression. Therefore, this analysis includes both Asia and Europe. To evaluate the impact of the PBI, we employ a difference-in-difference (DID) method to observe the two regions—Europe (treatment group) and Asia (control group)—for the two periods before and after the PBI was launched.[19]

As seen from **Table 25**, in the case where the same units within a group are observed in each period, the average in the second group (Asia) is subtracted from the average in the first group (Europe). This removes bias in the second period comparison between the treatment and control groups that could result either from a permanent discrepancy between the two groups or from a bias in comparisons over time in the treatment group due to other trends:[20]

$$y_{i,t} = \alpha + \beta_0 REGION_i + \beta_1 PBI_t + \beta_2 (REGION_i \bullet PBI_t) + \gamma X_{i,t} + \varepsilon_{i,t}$$

where $y_{i,t}$ stands for the development of infrastructure bond markets and $REGION_i$ is a dummy variable taking the value of 1 if the economy belongs to Europe and 0 otherwise. PBI_t is a policy dummy variable taking the value of 1 in the second period and 0 in the first period. $X_{i,t}$ is a set of explanatory variables that may affect the development of infrastructure bond markets, including economic size, level of economic development, level of financial sector development, other macroeconomic variables, and institutional variables. The coefficient of interest β_2 is for the interaction term, $REGION_i \bullet PBI_t$, which is the same as a dummy variable equal to 1 for those observations in Europe with the PBI in the second period.

The DID results in **Table 26** show that the PBI as a regional initiative has significantly contributed to infrastructure bond market development in Europe. The

Table 25: Difference-in-Difference Estimation for the Impact of the Project Bond Initiative

	Pre-PBI	Post-PBI	Difference
Treatment (Europe)	$\bar{Y}_1^T$	$\bar{Y}_2^T$	$\bar{Y}_2^T - \bar{Y}_1^T$
Control (Asia)	$\bar{Y}_1^C$	$\bar{Y}_2^C$	$\bar{Y}_2^C - \bar{Y}_1^C$
T–C Difference	$\bar{Y}_1^T - \bar{Y}_1^C$	$\bar{Y}_2^T - \bar{Y}_2^C$	$(\bar{Y}_2^T - \bar{Y}_2^C) - (\bar{Y}_1^T - \bar{Y}_1^C) = \beta_2$

PBI = Project Bond Initiative.
Source: Author's compilation.

Table 26: Estimation Results for the Difference-in-Difference Model

	Base Model	Model I	Model II
Constant	0.162	−246.287***	−95.986**
Europe	6.962***	−7.273	−14.118
Europe × After 2013	5.686	10.520**	9.648**
After 2013	1.343	−4.375**	−2.569
ln(GDP)		9.077***	
ln(GDP) per capita			9.341**
General government budget balance		−0.558***	−0.615***
Inflation (GDP deflator)		0.116	0.017
Volatility of the FX rate		0.779	0.371
Domestic credit provided by banks		0.003	0.032
Average institutional factors		0.206	0.157
Global financial crisis dummy	−1.580	−3.178	−1.762
Economy dummy	Yes	Yes	Yes
R-squared	0.523	0.537	0.527
Observations	364	338	338

FX = foreign exchange, GDP = gross domestic product.
Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.
Source: Author's calculations.

[19] DID methodology has become very popular since the works of Ashenfelter and Card (1985) and Card and Krueger (1994). The method estimates the impact of a treatment (policy variable) on an outcome (response variable) by comparing the average change over time in the outcome variable for the treatment group to the average change over time for the control group. The simple model is set up for two regions for two periods. One region (Europe) is exposed to a treatment (the PBI) in the second period but not in the first period. The other group (Asia) is not exposed to the treatment in either period.

[20] This method removes fixed differences between the two regions and common trends or changes over time in factors that affect the two regions equally. The identifying assumption is that, in the absence of the introduction of the PBI, there would have been no differences in the development of infrastructure bond markets between the two regions.

coefficients of estimation models I and II (including control variables) show positive and significant impacts on infrastructure bond market development, although the coefficient in the base model excluding control variables is positive but not statistically significant. The empirical results show that public initiatives such as the PBI can facilitate increased issuance of infrastructure bonds by mitigating the inherent risks of infrastructure projects.

The results also indicate that economic size and the level of economic development are positively correlated with infrastructure bond market development as other examples from the literature have found. The general government's budget balance is consistently found to have a negative impact on infrastructure bond markets, which implies that a larger fiscal burden makes it more likely that a government will rely on bond financing for infrastructure projects. The coefficient of the global financial crisis dummy is negative but not statistically significant for both Europe and Asia.

Conclusion

This study attempts to identify the determinants of infrastructure bond market development in Asia, while also evaluating the impact of the Project Bond Initiative (PBI) on the development of infrastructure bond markets in Europe. It aims to derive policy implications for Asia using the difference-in-difference (DID) method since Europe, in contrast to Asia, has introduced the PBI to finance infrastructure projects at a time when the demand for such financing has increased under the pressure of mounting fiscal burdens.

Based upon the empirical results, an economy's size is positively associated with infrastructure bond market development. As Eichengreen and Luengnaruemitchai (2004) highlight, the small and fragmented economies of Asia face difficulties in developing deep and liquid bond markets because they lack a certain minimum efficient scale. Bond market standardization and harmonization through the ASEAN+3 Bond Market Forum can facilitate the integration of individual Asian bond markets to obtain the minimum efficient scale needed to enhance the liquidity and depth of an integrated regional bond market.[21]

The DID results show that the PBI has contributed significantly to infrastructure bond market development in Europe. Considering the positive impact of the PBI on the development of European infrastructure bond markets and the relatively lower credit ratings of infrastructure bonds in Asia, ASEAN+3 economies should take policy measures to facilitate the issuance of infrastructure bonds and strengthen the role of the Credit Guarantee and Investment Facility in providing guarantees for infrastructure bonds.

Asia's infrastructure bond markets are still at a nascent stage of development, especially when the amount of issuance is compared with needed investment levels. At the same time, meaningful progress has been achieved in terms of facilitating an environment conducive for the issuance of infrastructure bonds. ASEAN+3 has demonstrated its commitment to developing infrastructure bond markets through the regional Credit Guarantee Investment Facility, which is now providing guarantees for infrastructure bonds. The time is opportune for ASEAN+3 to further strengthen regional initiatives to promote infrastructure bond market development.

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Appendix

Table A.1: Data Description

	Description	Source
Infrastructure bonds	Aggregate value of infrastructure bonds issued by an economy	Bloomberg LP, Dealogic
ln(GDP)	Logarithm of gross domestic product	World Bank
ln(GDP per capita)	Logarithm of gross domestic product per capita	World Bank
General government budget balance	(Government revenue – government spending)/GDP	International Monetary Fund
Inflation (GDP deflator)	Annual inflation rate as measured by the GDP deflator	World Bank
Volatility of the FX rate	Standard deviation of the change in the exchange rate	BIS
Domestic credit provided by banks	Domestic credit provided by banks/GDP	World Bank
Average institutional factors	Average value of property rights index, corruption index, and investment freedom index	The Heritage Foundation
Property rights index	Range from 0 to 100 (0 = unprotected, 100 = perfectly protected)	The Heritage Foundation
Corruption index	Range from 0 to 100 (0 = very corrupt government, 100 = freedom of corruption)	The Heritage Foundation
Investment freedom index	Range from 0 to 100 (0 = many restrictions to investment, 100 = no restrictions to investment)	The Heritage Foundation

BIS = Bank for International Settlements, FX = foreign exchange, GDP = gross domestic product.
Sources: Author's compilation and International Monetary Fund.

Table A.2: Correlation Matrix between Explanatory Variables

	1	2	3	4	5	6	7	8	9	10
ln(GDP)	1.000									
ln(GDP per capita)	0.268	1.000								
	(0.000)									
General government budget balance	−0.122	0.121	1.000							
	(0.020)	(0.021)								
Inflation (GDP deflator)	−0.276	−0.558	0.146	1.000						
	(0.000)	(0.000)	(0.005)							
Volatility of the FX rate	0.278	−0.296	−0.035	0.161	1.000					
	(0.000)	(0.000)	(0.519)	(0.003)						
Domestic credit provided by banks	0.122	0.449	−0.032	−0.383	−0.013	1.000				
	(0.021)	(0.000)	(0.542)	(0.000)	(0.816)					
Average institutional factors	0.200	0.922	0.153	−0.526	−0.229	0.447	1.000			
	(0.000)	(0.000)	(0.003)	(0.000)	(0.000)	(0.000)				
Property rights index	0.195	0.920	0.142	−0.523	−0.211	0.454	0.981	1.000		
	(0.000)	(0.000)	(0.007)	(0.000)	(0.000)	(0.000)	(0.000)			
Corruption index	0.210	0.876	0.191	−0.481	−0.206	0.433	0.960	0.932	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Investment freedom index	0.171	0.856	0.106	−0.511	−0.237	0.396	0.939	0.887	0.827	1.000
	(0.001)	(0.000)	(0.044)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	

FX = foreign exchange, GDP = gross domestic product.
Notes: p-value in parentheses: 1 = ln(GDP), 2 = ln(GDP per capita), 3 = General government budget balance, 4 = Inflation, 5 = Volatility of the FX rate, 6 = Domestic credit provided by banks, 7 = Average institutional factors, 8 = Property rights index, 9 = Corruption index, 10 = Investment freedom index.
Sources: Bank for International Settlements, International Monetary Fund, the Heritage Foundation, and World Bank.

Table A.3: Overview of Infrastructure Bonds in Asia and Europe, 2003–2015

Asia	BRU	HKG	INO	JPN	KOR	LAO	MAL	PHI	PRC	SIN	THA	VIE
Number of deals	2	872	354	7,464	6,278	12	1,564	239	5,291	286	612	43
Total value (USD billion)	0.09	88.62	146.04	14,032.4	1,490.99	2.37	583.28	106.32	5,269.15	139.85	61.78	4.98
Avg. value per deal (USD billion)	0.04	0.10	0.41	1.88	0.24	0.20	0.37	0.44	1.00	0.49	0.10	0.12
Avg. maturity (without perpetual) (Years)	1.00	5.31	14.01	9.33	6.49	5.91	9.90	11.71	7.04	8.83	7.24	8.73
Share in local currency	100.00	52.52	30.70	99.07	83.77	0.00	95.70	62.07	99.70	79.03	93.19	39.68
Share in USD (%)	0.00	33.65	65.39	0.66	9.89	0.00	3.71	33.36	0.25	17.90	4.27	60.32
Share in MTN (%)	0.00	28.60	34.86	0.15	5.68	0.00	51.55	0.00	2.40	36.73	0.20	0.00
Share in regulation S (%)	0.00	53.18	59.62	0.58	4.73	0.00	3.82	10.04	0.74	34.98	8.86	54.00
Share in 144A (%)	0.00	7.44	60.17	0.13	2.80	0.00	2.19	2.91	0.08	10.89	1.12	52.75
Share in private placement (%)	0.00	30.39	9.80	0.10	6.27	100.00	22.51	3.70	2.30	10.77	22.49	12.39

Europe	AUT	BEL	CYP	DEN	FIN	FRA	GER	GRC	IRE	ITA	LUX	NET
Number of deals	550	520	7	296	221	2,750	7,498	108	177	1,277	267	1,307
Total value (USD billion)	428.51	591.26	5.73	176.31	199.50	3,631.23	4,718.41	320.41	265.03	3,494.83	505.74	1,383.01
Avg. value per deal (USD billion)	0.78	1.14	0.82	0.60	0.90	1.32	0.63	2.97	1.50	2.74	1.89	1.06
Avg. maturity (without perpetual) (Years)	11.26	10.35	6.21	9.18	8.78	8.80	6.93	10.09	13.10	8.24	9.94	9.54
Share in local currency	81.42	97.24	98.38	52.42	81.85	88.74	78.75	98.58	84.60	96.86	62.60	76.46
Share in USD (%)	10.88	2.35	1.62	15.71	10.19	7.87	13.30	1.08	12.97	1.85	32.02	16.38
Share in MTN (%)	22.81	9.08	98.38	34.13	30.17	22.41	24.41	4.32	3.09	9.47	51.48	35.73
Share in regulation S (%)	49.40	28.06	74.61	39.26	50.59	23.15	19.36	35.43	47.22	14.09	81.32	37.89
Share in 144A (%)	44.14	19.79	1.54	11.00	32.32	6.26	1.52	26.91	7.78	3.95	37.34	11.24
Share in private placement (%)	3.16	1.31	1.85	2.58	2.17	2.33	3.93	1.99	5.56	0.84	9.11	5.69

Europe	POR	SPA	SWE	SWI	UKG
Number of deals	188	1,726	2,579	695	1,657
Total value (USD billion)	222.33	1,804.01	397.27	153.38	2,825.24
Avg. value per deal (USD billion)	1.18	1.05	0.15	0.22	1.71
Avg. maturity (without perpetual) (Years)	10.37	7.68	8.69	12.58	17.06
Share in local currency	96.99	91.67	42.66	96.21	85.42
Share in USD (%)	2.87	5.39	23.59	1.44	7.76
Share in MTN (%)	5.64	22.24	56.85	5.85	13.48
Share in regulation S (%)	39.41	27.64	43.80	10.56	29.15
Share in 144A (%)	29.47	9.40	11.63	4.24	3.89
Share in private placement (%)	3.07	1.72	6.45	4.15	2.76

MTN = medium-term note, USD = United States dollar.
Asia: BRU = Brunei Darussalam; HKG = Hong Kong, China; INO = Indonesia; JPN = Japan; KOR = Republic of Korea; LAO = Lao People's Democratic Republic; MAL = Malaysia; PHI = Philippines; PRC = People's Republic of China; SIN = Singapore; THA = Thailand; VIE = Viet Nam.
Europe: AUT = Austria, BEL = Belgium, CYP = Cyprus, DEN = Denmark, FIN = Finland, FRA = France, GER = Germany, GRC = Greece, IRE = Ireland, ITA = Italy, LUX = Luxembourg, NET = Netherlands, POR = Portugal, SPA = Spain, SWE = Sweden, SWI = Switzerland, UKG = United Kingdom.
Sources: Bloomberg LP and Dealogic.

Market Summaries

People's Republic of China

Yield Movements

The People's Republic of China's (PRC) local currency (LCY) government bond yield curve moved upward between 31 October and 18 November except for yields for the 2-year, 4-year, and 6-year maturities **(Figure 1)**. The largest declines occurred at the longer end, with the 5-year tenor rising 21 bps and the 7-year and 10-year tenors rising 18 bps and 16 bps, respectively. The remaining tenors rose between 7 bps and 11 bps, except for the aforementioned 2-year, 4-year, and 6-year tenors. The 2-year and 6-year tenors were unchanged, while the 4-year tenor fell 7 bps. As a result, the 2-year versus 10-year yield spread rose from 35 bps on 31 October to 50 bps on 18 November. The rise in the yield curve was driven by increasing volatility in markets outside of the United States as a result of its presidential election.

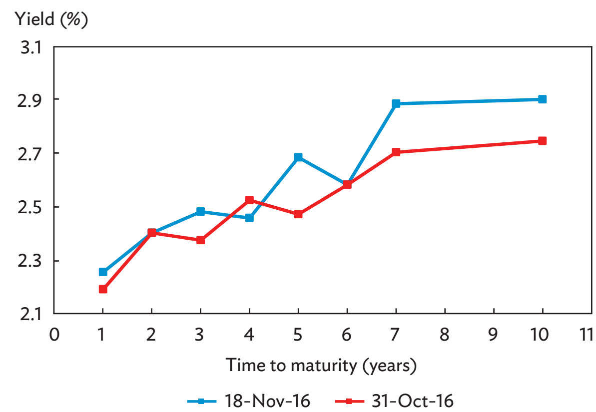
For the third quarter (Q3) of 2016, the PRC reported gross domestic product growth of 6.7% year-on-year (y-o-y), the same pace as in the previous 2 quarters and down from 6.8% y-o-y growth in the fourth quarter of 2015.

Exports from the PRC remained weak in Q3 2016. In renminbi-denominated terms, exports only grew 2.9% y-o-y in July before expanding 5.9% y-o-y in August and then plunging 5.6% y-o-y in September.

The PRC's consumer price inflation has remained manageable. After July's 1.8% y-o-y rise in consumer prices, inflation fell to 1.3% y-o-y in August before accelerating to 1.9% in September, mostly due to a rise in food prices. In October, inflation picked up to 2.1% y-o-y.

Concerns over the direction of the US economy pushed yields up despite increased risk aversion in the PRC's credit markets after a number of corporate bond defaults this year. The central bank governor of the People's Bank of China (PBOC) said during the recent G20 Finance Ministers and Central Bank Governors Meeting that the PRC would take steps to control debt growth.

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



Source: Based on data from Bloomberg LP.

Size and Composition

LCY bonds outstanding in the PRC rose 4.2% quarter-on-quarter (q-o-q) and 26.0% y-o-y to CNY47.9 trillion (USD7.2 trillion) **(Table 1)**.

Government Bonds. Outstanding LCY government bonds grew 6.0% q-o-q and 35.1% y-o-y in Q3 2016 to reach CNY33.2 trillion, with all three government bond categories included in Table 1 exhibiting slower growth. Treasury and other governments bonds grew 10.3% q-o-q in Q3 2016, down from 19.6% q-o-q in the second quarter (Q2) of 2016, on the back of slower but still substantial growth in local government bonds. Local government bonds grew 17.2% q-o-q in Q3 2016 after rising 45.5% in Q2 2016. The slowdown in local government bond growth was partially due the quota limits imposed by the central government being approached.

Central bank bonds continued to decline in Q3 2016 as the PBOC ceased issuance in 2013. In Q3 2016, most central bank bonds came due, resulting in a decline of 93.6% q-o-q.

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

	Outstanding Amount (billion)						Growth Rates (%)			
	Q3 2015		Q2 2016		Q3 2016		Q3 2015		Q3 2016	
	CNY	USD	CNY	USD	CNY	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**37,998**	**5,978**	**45,980**	**6,916**	**47,890**	**7,178**	**8.0**	**19.2**	**4.2**	**26.0**
Government	24,547	3,862	31,286	4,706	33,154	4,969	9.9	20.6	6.0	35.1
Treasury Bonds	13,263	2,087	18,955	2,851	20,912	3,134	17.5	32.4	10.32	57.7
Central Bank Bonds	428	67	428	64	27	4	0.0	(8.5)	(93.6)	(93.6)
Policy Bank Bonds	10,855	1,708	11,902	1,790	12,215	1,831	2.1	10.0	2.6	12.5
Corporate	13,451	2,116	14,694	2,210	14,736	2,209	4.7	16.8	0.3	9.5
Policy Bank Bonds										
China Development Bank	6,610	1,040	6,976	1,049	7,051	1,057	4.3	6.3	1.1	6.7
Export–Import Bank of China	1,817	286	1,988	299	2,028	304	7.2	22.7	2.0	11.6
Agricultural Devt. Bank of China	2,429	382	2,939	442	3,136	470	11.8	22.8	6.7	29.1

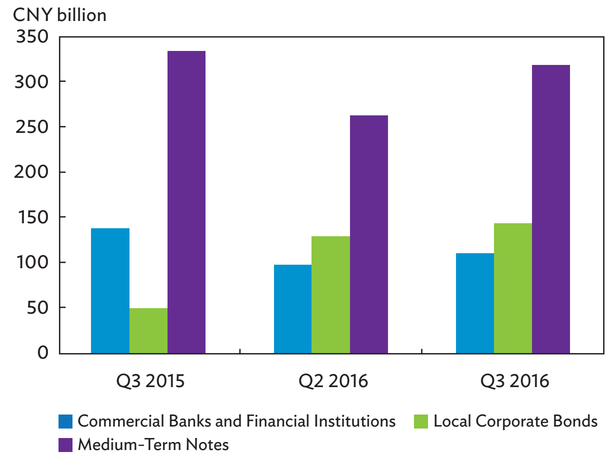
( ) = negative, CNY = Chinese renminbi, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = third quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Treasury bonds include savings bonds and local government bonds.
3. Bloomberg LP end-of-period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

The growth of policy bank bonds slowed in Q3 2016, with an increase of 2.6% q-o-q compared with 3.4% q-o-q in Q2 2016.

Corporate Bonds. LCY corporate bonds outstanding rose a marginal 0.3% q-o-q in Q3 2016, following a decline of 0.6% q-o-q in the prior quarter, to reach CNY14.7 trillion at the end of September. Growth was driven by a 4.5% q-o-q increase in commercial bank bonds and Tier 2 notes, and a 4.4% q-o-q increase in local corporate bonds **(Table 2)**. Outstanding commercial paper continued to decline, falling 10.2% q-o-q.

The rise in LCY corporate bonds outstanding corresponded with an increase in corporate bond issuance. In Q3 2016, total corporate bond issuance reached CNY1.5 trillion, up from CNY1.4 trillion in the prior quarter **(Figure 2)**.

Figure 2: Corporate Bond Issuance in Key Sectors



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

Table 2: Corporate Bonds Outstanding in Key Categories

	Amount (CNY billion)			Growth Rate (%)			
				Q3 2015		Q3 2016	
	Q3 2015	Q2 2016	Q3 2016	q-o-q	y-o-y	q-o-q	y-o-y
Commercial Bank Bonds and Tier 2 Notes	1,860	2,271	2,372	1.1	21.1	4.5	27.6
SOE Bonds	581	575	560	0.9	(7.7)	(2.6)	(3.7)
Local Corporate Bonds	2,492	2,787	2,911	1.0	11.7	4.4	16.8
Commercial Paper	2,501	2,652	2,380	1.1	29.2	(10.2)	(4.8)
Medium-Term Notes	4,287	4,559	4,604	1.0	10.8	1.0	7.4

( ) = negative, CNY = Chinese renminbi, 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*.

Increases were noted in nearly all major corporate bond categories.

Overall corporate bond issuance has remained weak in 2016 because of continued risk aversion among investors following a number of defaults in the corporate bond market. For comparison, corporate bond issuance was CNY1.8 trillion in both the first quarter of 2016 and the fourth quarter of 2015.

Due to increasing concerns over corporate bond defaults, the PRC announced on 10 October measures to reduce risk by encouraging mergers and debt for equity swaps.

The PRC's corporate bond market is dominated by a few big issuers **(Table 3)**. At the end of Q3 2016, the top 30 corporate bond issuers accounted for CNY5.6 trillion worth of corporate bonds outstanding, or about 38.2% of

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	1,263.5	189.38	Yes	No	Transportation
2.	State Grid Corp of China	437.1	65.51	Yes	No	Public Utilities
3.	China National Petroleum	365.0	54.71	Yes	No	Energy
4.	Agricultural Bank of China	260.0	38.97	Yes	Yes	Banking
5.	Bank of China	258.9	38.80	Yes	Yes	Banking
6.	Industrial and Commercial Bank of China	258.0	38.67	Yes	Yes	Banking
7.	China Construction Bank	212.0	31.78	Yes	Yes	Banking
8.	Industrial Bank	196.0	29.38	No	Yes	Banking
9.	Bank of Communications	194.0	29.08	No	Yes	Banking
10.	Shanghai Pudong Development Bank	184.6	27.67	No	Yes	Banking
11.	PetroChina	181.0	27.13	Yes	Yes	Energy
12.	China Minsheng Banking	155.1	23.25	No	Yes	Banking
13.	State Power Investment	145.2	21.77	Yes	No	Energy
14.	Bank of Beijing	122.9	18.42	Yes	Yes	Banking
15.	Central Huijin Investment	109.0	16.34	Yes	No	Asset Management
16.	China CITIC Bank	107.5	16.11	No	Yes	Banking
17.	Shenhua Group	104.5	15.66	Yes	No	Energy
18.	China Petroleum & Chemical	94.5	14.16	Yes	Yes	Energy
19.	China Everbright Bank	88.9	13.32	Yes	Yes	Banking
20.	China Datang	86.7	12.99	Yes	Yes	Energy
21.	China Three Gorges	86.5	12.97	Yes	No	Public Utilities
22.	China Guangfa Bank	84.5	12.67	No	Yes	Banking
23.	Tianjin Infrastructure Construction & Investment Group	83.4	12.50	Yes	No	Industrial
24.	Shaanxi Coal and Chemical Industry Group	80.5	12.07	Yes	Yes	Energy
25.	Huaxia Bank	80.4	12.05	Yes	No	Banking
26.	China Merchants Bank	79.0	11.84	No	Yes	Banking
27.	Haitong Securities	78.0	11.69	Yes	Yes	Brokerage
28.	China United Network Communications	77.0	11.54	Yes	Yes	Telecommunications
29.	China Huarong Asset Management	77.0	11.54	Yes	Yes	Asset Management
30.	Beijing State-Owned Capital Operation and Management Center	73.5	11.02	Yes	No	Asset Management
Total Top 30 LCY Corporate Issuers		**5,624.20**	**842.98**			
Total LCY Corporate Bonds		**14,735.71**	**2,208.66**			
Top 30 as % of Total LCY Corporate Bonds		**38.2%**	**38.2%**			

CNY = Chinese renminbi, LCY = local currency, USD = United States dollar.
Notes:
1. Data as of end-September 2016.
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.

the total market. Out of the top 30, the 10 largest issuers accounted for CNY3.6 trillion.

The top 30 issuer list is dominated by banks, owing to the continued issuance of commercial bank bonds as banks accelerate their fund-raising. Among the top 30 corporate issuers at the end of September, 14 were in the banking industry.

Table 4 lists the most notable corporate bond issuances in Q3 2016. Most companies on the list are from capital-intensive industries such as oil, infrastructure, and power. One bank, China Guangfa Bank, was on the list.

Investor Profile

Treasury Bonds and Policy Bank Bonds. The share of bank holdings of Treasury bonds, including policy bank bonds, continued to fall in Q3 2016, declining to 68.4% at the end of September from a 73.3% share a year earlier **(Figure 3)**. There was a corresponding rise in the holdings of funds institutions such as mutual funds during the same period, with the share of funds institutions rising to 13.6% from 8.2%.

Corporate Bonds. Similar to Treasury bonds, banks' share of local corporate bonds continued to decline in Q3 2016, falling to 18.1% at the end of September from 24.1% a year earlier. Banks were no longer the largest holder of corporate bonds at the end of September **(Figure 4)**. Fund institutions became the dominant holders in Q3 2016, with their share rising to 44.9% at the end of September from 29.8% a year earlier.

Figure 5 presents investor profiles across corporate bond categories at the end of September. Funds institutions continued to be the dominant buyer of both local corporate bonds and medium-term notes, with the share of banks' holdings declining from a year earlier. Banks and insurance companies were the dominant holders of commercial bank bonds at the end of September.

Liquidity

Interest rate swap volumes rose 9.0% q-o-q, driven by a large increase in trading volumes for the 3-month SHIBOR swap. The 7-day repurchase interest rate swap remains the most popular among all swap categories, accounting for 85.8% of the total transaction volume in Q3 2016 **(Table 5)**.

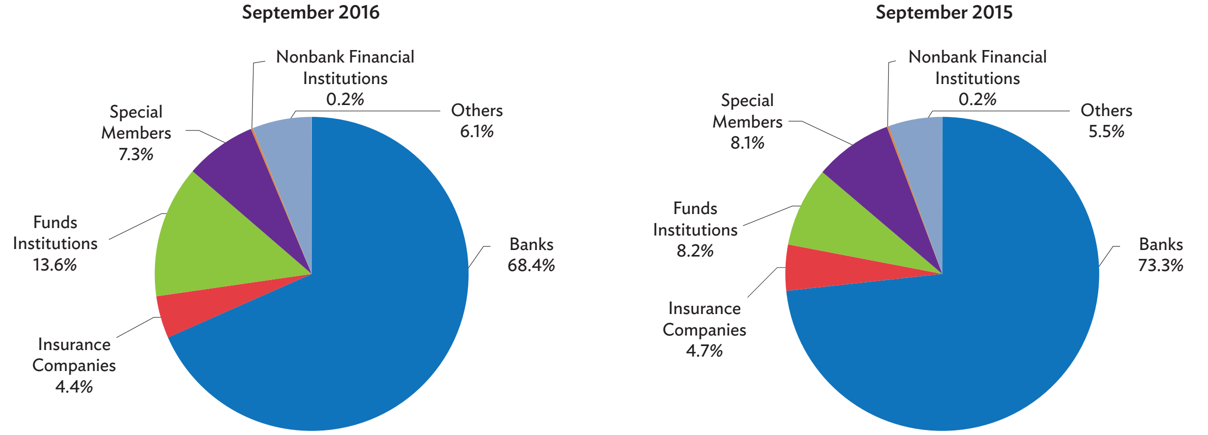
Table 4: Notable Local Currency Corporate Bond Issuance in Q3 2016

Corporate Issuers	Coupon Rate (%)	Issued Amount (CNY billion)
China Railway		
270-day bond	2.45	15.0
10-year bond	3.09	15.0
10-year bond	3.15	15.0
20-year bond	3.38	5.0
20-year bond	3.43	5.0
China Huadian		
270-day bond	2.50	4.0
270-day bond	2.57	4.0
270-day bond	2.50	4.0
270-day bond	2.69	3.5
270-day bond	2.48	3.5
270-day bond	2.50	3.0
270-day bond	2.50	3.0
3-year bond	2.99	4.0
5-year bond	2.95	3.0
5-year bond	3.25	3.0

Corporate Issuers	Coupon Rate (%)	Issued Amount (CNY billion)
China Petrochemical		
270-day bond	2.50	10.0
5-year bond	2.83	13.0
7-year bond	3.02	4.3
10-year bond	3.30	0.8
China Guangfa Bank		
180-day bond	2.50	2.5
210-day bond	2.53	5.0
240-day bond	2.57	4.0
270-day bond	2.72	3.5
270-day bond	2.78	3.5
3-year bond	2.88	5.0
5-year bond	2.94	4.0

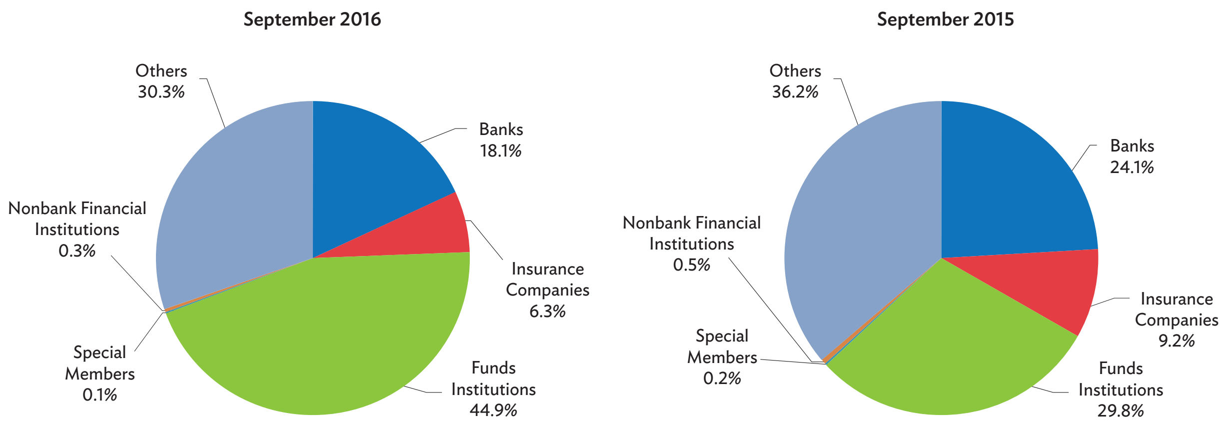
CNY = Chinese renminbi, Q3 = third quarter.
Source: Based on data from Bloomberg LP.

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



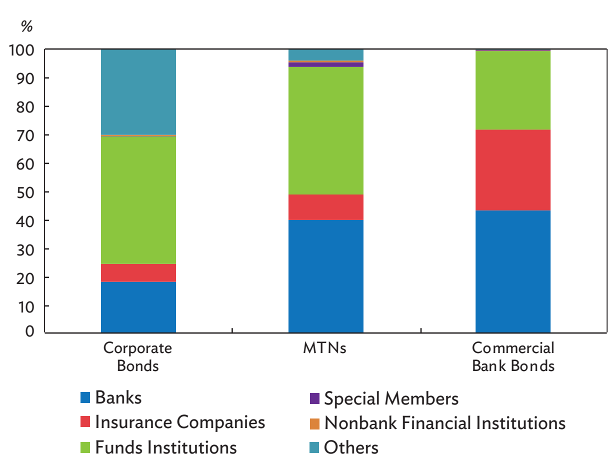
Source: *ChinaBond*.

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 2016.
Source: *ChinaBond*.

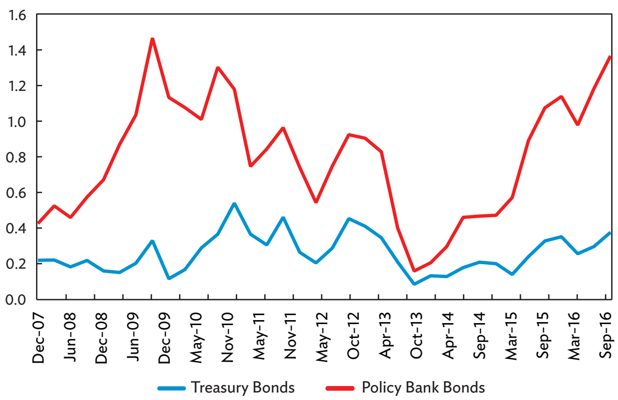
Table 5: Notional Values of the People's Republic of China's Interest Rate Swap Market in Q3 2016

Interest Rate Swap Benchmarks	Notional Amount (CNY billion)	Percentage of Total Notional Amount (%)	Growth Rate (%)
	Q2 2016		q-o-q
7-Day Repo Rate	2,217.0	85.8	3.3
Overnight SHIBOR	9.6	0.4	(82.0)
3-Month SHIBOR	348.4	13.5	125.3
1-Year Term Deposit Rate	1.3	0.05	(82.5)
1-Year Lending Rate	5.4	0.2	(32.1)
3-Year Lending Rate	0.1	0.0	0.0
5-Year Lending Rate	1.0	0.04	70.4
Total	**2,582.7**	**100.0**	**9.0**

( ) = negative, CNY = Chinese renminbi, q-o-q = quarter-on-quarter, Q3 = third quarter, Repo = repurchase, SHIBOR = Shanghai Interbank Offered Rate.
Notes:
1. Growth rate computed based on notional amounts.
2. London Interbank Offered Rate and 1-Year Loan Prime Rate had no transaction for Q3 2016.
Sources: *AsianBondsOnline* and *ChinaMoney*.

Consistent with the decline in interest rates, trading activity in government bonds rose on increased demand, driven by demand for safe assets on credit market concerns as well as expectations of higher government bond prices due to lower interest rates amid slowing economic growth **(Figure 6)**.

Figure 6: Turnover Ratios for Government Bonds



Source: *ChinaBond*.

Policy, Institutional, and Regulatory Developments

People's Bank of China Renews Currency Swap with European Central Bank

On 27 September, the PBOC renewed its currency swap agreement with European Central Bank for an additional 3 years. Under the swap agreement, the PBOC can exchange up to CNY350 billion with the European Central Bank for EUR45 billion.

International Monetary Fund Includes Renminbi in Special Drawing Rights Basket

On 30 September, the International Monetary Fund (IMF) announced that it would include the Chinese renminbi in its Special Drawing Rights basket effective 1 October. The IMF said that the renminbi's inclusion is due to the currency's increasing role in the international monetary system. Other currencies included in the IMF's Special Drawing Rights are the US dollar, euro, Japanese yen, and pound sterling.

Trading in Credit Default Swaps Allowed

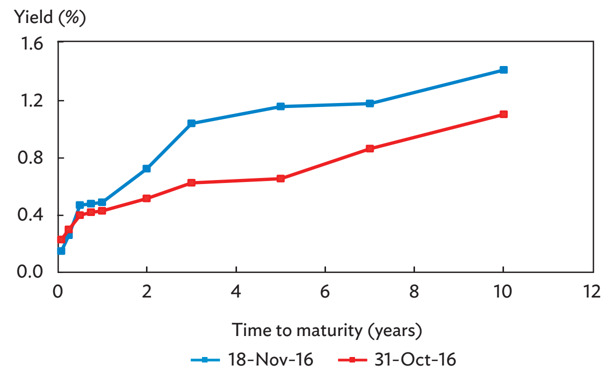
On 31 October, the PRC allowed banks to begin trading credit default swaps as part of efforts to help hedge credit risks amid increasing concerns in the PRC's corporate bond market. The credit default swaps that are being traded in the PRC are similar to those traded in international markets. In the past, the PRC launched credit risk mitigation warrants to hedge against credit risk, but they were not well received by market participants.

Hong Kong, China

Yield Movements

The local currency (LCY) government bond yield curve of Hong Kong, China, which follows United States (US) interest rate movements as a matter of monetary policy, rose for all tenors between 31 October and 18 November except for the 1-month and 3-month tenors. The largest yield movements were in the belly of the curve, with the yield for the 5-year tenor rising 50 basis points (bps) and the 3-year yield rising 41 bps **(Figure 1)**. The shorter end of the curve showed much smaller movements, with the yield for tenors of 1-year and below rising 6–7 bps. The exceptions were the yield for the 1-month tenor, which fell 8 bps, and the yield for the 3-month tenor, which fell by 4 bps. All remaining tenors rose an average of 27 bps. The 2-year versus 10-year yield spread widened from 59 bps on 31 October to 69 bps on 18 November.

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



Source: Based on data from Bloomberg LP.

Yields in Hong Kong, China faced upward pressure due to expectations of a United States (US) Federal Reserve rate hike in December. Yields were pressured further following the result of the US presidential elections, with local yields tracking a rise in US yields on the prospect of the new administration bolstering economic growth.

Inflation in Hong Kong, China has been steady and somewhat subdued. In September, inflation stood at 2.7% year-on-year (y-o-y), down from 4.3% y-o-y in August. The higher inflation rate in August was due to a low base effect driven by public rental subsidies offered by the government in 2015. The government has said that it does not expect a significant uptick in inflation in the future.

Hong Kong, China's gross domestic product grew 1.9% year-on-year (y-o-y) in the third quarter (Q3) of 2016, up from a 1.7% y-o-y expansion in the second quarter of 2016. The increase in the growth rate was driven by a recovery in investment and improved consumer spending.

Size and Composition

Outstanding LCY bonds in Hong Kong, China grew 6.4% quarter-on-quarter (q-o-q) and 20.4% year-on-year (y-o-y) to reach HKD1,867 billion (USD241 billion) at the end of September **(Table 1)**. Growth was driven mostly by increases in Exchange Fund Bills (EFBs) and corporate bonds.

EFBs rose 6.0% q-o-q and 28.0% y-o-y on higher issuances by the Hong Kong Monetary Authority (HKMA). In Q3 2016, total EFB issuance amounted to HKD698 billion from HKD618 billion in the prior quarter. The HKMA's strong issuance is in response to demand by banks for EFBs due to excess liquidity in the financial system.

Exchange Fund Notes (EFNs) continued to fall in Q3 2016, declining 4.1% q-o-q and 16.9% y-o-y, as the HKMA cancelled issuances of EFNs with tenors longer than 2 years, preferring instead to issue Hong Kong Special Administrative Region (HKSAR) bonds.

In Q3 2016, HKSAR bonds rose 4.8% q-o-q and 2.0% y-o-y to HKD105 billion. A total of HKD4.8 billion worth of bonds was issued in Q3 2016. An HKD1.2 billion 10-year bond and an HKD0.6 billion 15-year HKSAR bond were issued under the Institutional Bond Issuance Programme, while HKD3.0 billion worth of 3-year bonds was issued under the Retail Bond Issuance Programme.

The amount of corporate bonds outstanding rose 7.8% q-o-q and 18.5% y-o-y in Q3 2016 as issuers took advantage of lower Hong Kong dollar interest rates.

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

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2015		Q2 2016		Q3 2016		Q3 2015		Q3 2016	
	HKD	USD	HKD	USD	HKD	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**1,551**	**200**	**1,755**	**226**	**1,867**	**241**	**1.9**	**2.9**	**6.4**	**20.4**
Government	876	113	1,013	131	1,067	138	3.6	2.4	5.4	21.8
Exchange Fund Bills	712	92	859	111	911	117	3.2	4.1	6.0	28.0
Exchange Fund Notes	62	8	53	7	51	7	(3.4)	(9.9)	(4.1)	(16.9)
Government Bonds	103	13	101	13	105	14	11.4	(0.3)	4.8	2.0
Corporate	675	87	742	96	800	103	(0.3)	3.6	7.8	18.5

( ) = negative, HKD = Hong Kong dollar, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = first quarter, 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. Bloomberg LP end-of-period local currency–USD rates are used.
3. Growth rates are calculated from local currency base and do not include currency effects.
Sources: Hong Kong Monetary Authority and Bloomberg LP.

The top 30 nonbank issuers in Hong Kong, China had outstanding LCY bonds amounting to HKD143.3 billion at the end of September, representing 17.9% of total corporate bonds outstanding. The top 30 list continued to be dominated by real estate firms and the financing vehicles of corporates **(Table 2)**. The Hong Kong Mortgage Corporation remained the top issuer with outstanding bonds of HKD27.7 billion. It was followed by Sun Hung Kai Properties (Capital Market) with HKD9.7 billion of bonds outstanding and CLP Power Hong Kong Financing with HKD9.0 billion. Among the top 30 nonbank issuers at the end of September, 6 were state-owned companies and 9 were Hong Kong Exchange-listed firms.

The top five nonbank issuances in Q3 2016 came from Swire Pacific MTN Financing, Hong Kong Electric Finance, HKCG (Finance), Swire Properties MTN Financing, and CK Properties Finance (MTN) **(Table 3)**.

Policy, Institutional, and Regulatory Developments

Hong Kong Monetary Authority Assigns Nine Offshore Renminbi Primary Liquidity Providers

On 27 October, the HKMA released the new list of offshore renminbi primary liquidity providers after expiration of the first set of liquidity providers. The list contains nine institutions: Agricultural Bank of China; Bank of Communications; Bank of China (Hong Kong, China); BNP Paribas; China Construction Bank (Asia); Citibank, N.A.; HSBC; Industrial and Commercial Bank of China (Asia); and Standard Chartered Bank (Hong Kong, China). The list adds two additional liquidity providers from the previous seven. The HKMA said that the expansion is part of efforts to strengthen the liquidity of the offshore renminbi bond market.

Table 2: Top 30 Nonbank Corporate Issuers 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	27.66	3.57	Yes	No	Finance
2.	Sun Hung Kai Properties (Capital Market)	9.65	1.24	No	No	Real Estate
3.	CLP Power Hong Kong Financing	8.96	1.15	No	No	Finance
4.	Swire Pacific	8.62	1.11	No	Yes	Diversified
5.	The Link Finance (Cayman) 2009	8.59	1.11	No	No	Finance
6.	Hongkong Electric Finance	8.59	1.11	No	No	Finance
7.	MTR Corporation (C.I.)	8.22	1.06	Yes	Yes	Transportation
8.	HKCG (Finance)	7.80	1.01	No	No	Finance
9.	Wharf Finance	6.13	0.79	No	No	Finance
10.	NWD (MTN)	5.50	0.71	No	Yes	Finance
11.	Swire Properties MTN Financing	4.34	0.56	No	No	Finance
12.	Wheelock Finance	4.04	0.52	No	No	Finance
13.	Bestgain Real Estate Lyra	3.65	0.47	No	No	Real Estate
14.	Kowloon-Canton Railway	3.40	0.44	Yes	No	Transportation
15.	Urban Renewal Authority	3.30	0.43	Yes	No	Real Estate
16.	Emperor International Holdings	2.75	0.35	No	Yes	Real Estate
17.	Yue Xiu Property	2.30	0.30	No	No	Real Estate
18.	Tencent Holdings	2.20	0.28	No	Yes	Comunications
19.	Bohai International Capital	2.00	0.26	No	No	Iron and Steel
20.	China Energy Reserve and Chemicals Group Overseas	2.00	0.26	No	No	Oil
21.	Hong Kong Science and Technology Parks	1.71	0.22	Yes	No	Real Estate
22.	Cathay Pacific MTN Financing	1.70	0.22	No	Yes	Finance
23.	Airport Authority Hong Kong	1.65	0.21	Yes	No	Transportation
24.	Chueng Kong Finance (MTN)	1.50	0.19	No	No	Finance
25.	Wharf Finance (No. 1)	1.44	0.19	No	No	Finance
26.	Hysan (MTN)	1.40	0.18	No	Yes	Real Estate
27.	Henderson Land MTN	1.19	0.15	No	Yes	Finance
28.	Cheung Kong Bond Securities (02)	1.00	0.13	No	No	Finance
29.	Dragon Drays	1.00	0.13	No	No	Diversified
30.	K. Wah Intenational Financial Services	1.00	0.13	No	Yes	Finance
Total Top 30 Nonbank LCY Corporate Issuers		**143.26**	**18.47**			
Total LCY Corporate Bonds		**799.86**	**103.12**			
Top 30 as % of Total LCY Corporate Bonds		**17.9%**	**17.9%**			

LCY = local currency.
Notes:
1. Data as of end-September 2016.
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 Q3 2016

Corporate Issuers	Coupon Rate (%)	Issued Amount (HKD billion)
Swire Pacific MTN Financing		
5-year bond	2.05	0.50
5-year bond	1.99	0.50
5-year bond	1.95	0.30
10-year bond	2.59	0.14
12-year bond	2.60	0.30
Hong Kong Electric Finance		
12-year bond	2.55	0.35
14-year bond	2.57	0.47
15-year bond	2.56	0.50
20-year bond	2.90	0.30
HKCG (Finance)		
10-year bond	2.22	0.50
10-year bond	2.25	0.36
Swire Properties MTN Financing		
5-year bond	1.80	0.30
10-year bond	2.35	0.50
CK Properties Finance (MTN)		
10-year bond	2.29	0.75

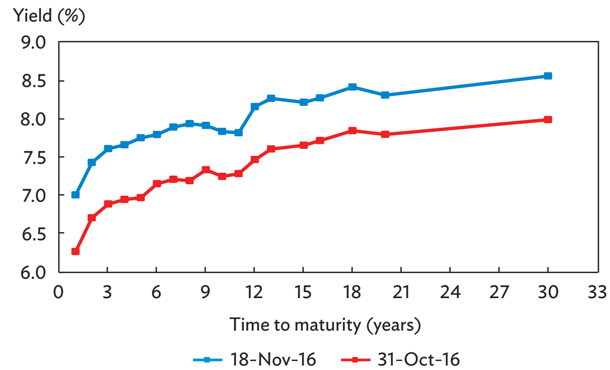
HKD = Hong Kong dollar, Q3 = third quarter.
Source: Central Moneymarkets Unit, Hong Kong Monetary Authority.

Indonesia

Yield Movements

Local currency (LCY) government bond yields in Indonesia rose for all tenors between 31 October and 18 November, leading the entire yield curve to shift upward **(Figure 1)**. All tenors across the curve gained an average of 64 basis points (bps). Yields rose faster at the shorter end than the longer end, resulting in an overall flattening of the yield curve. The spread between the 2-year and 10-year tenors declined from 54 bps on 31 October to 41 bps on 18 November.

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



Source: Based on data from Bloomberg LP.

Bond yields initially climbed in October following the release of the minutes of the September meeting of the United States (US) Federal Reserve. The September minutes, along with the release of data showing stronger third quarter (Q3) economic growth in the US, increased the likelihood of a rate hike by the Federal Reserve in December. Indonesian government bond yields rose further following the results of the US presidential election. Uncertainty over the direction of US economic policy contributed to negative sentiments surrounding emerging market assets, resulting in yield increases and prompting a sell-off in the Indonesian government bond market. As of 11 November, the share of foreign holdings in the government bond market had slipped to 38.1% from 38.4% at the end of October, and from 39.2% at the end of September.

In its meeting on 16-17 November, Bank Indonesia decided to hold steady its 7-day reverse repurchase rate at 4.75% after cuts of 25 bps in both the September and October meetings. The deposit facility rate and lending facility rate were also kept unchanged at 4.00% and 5.50%, respectively. The decision to keep the policy rate steady was made in response to ongoing volatility in global financial markets following the US presidential election. The central bank has reduced the 7-day reverse repurchase rate by a cumulative 50 bps since it shifted to using this rate as its policy rate on 19 August. Bank Indonesia had lowered its previous benchmark interest rate by a cumulative 100 bps between January and June. Bank Indonesia's monetary easing move is expected to stimulate domestic demand and credit expansion to help boost economic growth. The various policy reforms initiated by the Government of Indonesia are expected to provide additional support to the economy amid prevailing volatilities in the market.

Inflation has remained subdued and is expected to come in at the lower end of Bank Indonesia's full-year target of 3.0%–5.0%. Consumer price inflation eased to 3.2% year-on-year (y-o-y) in July and 2.8% y-o-y in August, before rising to 3.1% y-o-y in September and 3.3% y-o-y in October.

For full-year 2016, Bank Indonesia projects the domestic economy will grow at the lower end of its forecast of 4.9%–5.3%. Real gross domestic product (GDP) growth eased to 5.0% y-o-y in Q3 2016 from 5.2% y-o-y in the second quarter (Q2) of 2016. The slower growth in Q3 2016 stemmed from a slowdown in government spending and continued weakness in exports.

Size and Composition

The size of Indonesia's LCY bond market climbed to IDR2,153.0 trillion (USD165 billion) at the end of September, up 7.5% q-o-q and 27.2% y-o-y in Q3 2016 **(Table 1)**. Both the government and corporate bond segments contributed to the growth during the review period. The Indonesian bond market is dominated by government bonds, which accounted for an 86.7% share of the aggregate LCY bond stock at the end of September. Corporate bonds accounted for the remaining 13.3%.

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

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2015		Q2 2016		Q3 2016		Q3 2015		Q3 2016	
	IDR	USD	IDR	USD	IDR	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**1,692,373**	**115**	**2,003,006**	**152**	**2,153,035**	**165**	**1.5**	**12.4**	**7.5**	**27.2**
Government	1,442,758	98	1,732,935	131	1,866,325	143	0.9	12.3	7.7	29.4
Central Govt. Bonds	1,392,407	95	1,646,846	125	1,749,384	134	2.7	16.1	6.2	25.6
of which: *Sukuk*	150,433	10	218,948	17	239,868	18	(3.7)	37.5	9.6	59.5
Central Bank Bills	50,351	3	86,089	7	116,941	9	(30.8)	(41.2)	35.8	132.3
of which: *Sukuk*	7,720	0.5	7,470	0.6	9,442	0.7	(8.7)	19.0	26.4	22.3
Corporate	249,615	17	270,071	20	286,710	22	4.4	13.4	6.2	14.9
of which: *Sukuk*	8,284	0.6	9,561	0.7	10,744	0.8	4.3	19.1	12.4	29.7

( ) = negative, IDR = Indonesian rupiah, 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 local currency–USD rates are used.
3. Growth rates are calculated from local currency base and do not include currency effects.
4. The total stock of nontradable bonds as of end-September stood at IDR242.6 trillion.
Sources: Bank Indonesia; Directorate General of Budget Financing and Risk Management, Ministry of Finance; Indonesia Stock Exchange; Otoritas Jasa Keuangan; and Bloomberg LP.

Conventional bonds still dominated the market with a share of 87.9% of total LCY bonds outstanding at the end of September. While *sukuk* (Islamic bonds) comprised a smaller share of only 12.1%, both the government and corporate bond segments recorded positive gains during the review period. Indonesia's LCY bond market performed strongly in Q3 2016 relative to its regional peers, leading the region in terms of growth on both a q-o-q and y-o-y basis.

Government Bonds. At the end of September, government bonds outstanding reached IDR1,866.3 trillion on gains of 7.7% q-o-q and 29.4% y-o-y. Growth was driven by central government bonds, which comprise Treasury instruments issued by the Ministry of Finance. Central bank bills, or *Sertifikat* Bank Indonesia (SBI), contributed to the growth to a lesser extent.

Central Government Bonds. At the end of September, the stock of central government bonds expanded to IDR1,749.4 trillion, climbing 6.2% q-o-q and 25.6% y-o-y. Declining borrowing costs and increased demand for government bonds provided leeway for the government to accept bids exceeding the targeted amount as it sought to fund a widened budget deficit.

The revised state budget for 2016 estimated a deficit of IDR296.7 trillion, or the equivalent of 2.4% of GDP. The Government of Indonesia had to raise its gross issuance target to IDR654.4 trillion to help fund its financing requirements. However, recent estimates indicate a wider budget deficit equivalent to 2.7% of GDP due to weaker-than-expected tax revenues. While part of the deficit is expected to be funded by revenue collection from the Tax Amnesty Law, its overall impact has yet to be assessed as the program is still ongoing.

Gross issuance of central government bonds totaled IDR118.9 trillion in Q3 2016, broadly comparable with their issuance volume in Q2 2016. A total of 11 auctions were held during the quarter comprising a mix of conventional and Islamic Treasury securities, and all were awarded in full or above target, including *sukuk* auctions.

Aside from regular Treasury auctions, the government also issued savings *sukuk* in September, further diversifying its debt instruments and investor base. The savings *sukuk* carry a maturity of 2 years and were sold only to Indonesian retail investors. The government raised IDR2.59 trillion from its first sale of Islamic savings bonds. This type of bond, however, is nontradable and does not form part of the *AsianBondsOnline* database.

Central Bank Bills. At the end of September, the stock of central bills, or SBI, soared to IDR116.9 trillion on 35.8% q-o-q and 132.3 y-o-y growth. SBI are issued by the central bank as one of its monetary instruments to manage liquidity. Monthly auctions are held for both conventional and *shariah*-compliant SBI with maturities of 9 months and 1 year. In Q3 2016, issuance of SBI rose to IDR46.6 trillion, up by 61.4% q-o-q and 123.0% y-o-y.

Corporate Bonds. At the end of September, LCY corporate bonds outstanding rose to IDR286.7 trillion, expanding 6.2% q-o-q and 14.9% y-o-y. The relative size of Indonesia's corporate bond market remains small compared with that of the government bond market as corporates generally opt to take bank loans due to issuance hurdles such as lengthy procedures and credit-quality issues. Based on the results of the *AsianBondsOnline* 2016 bond market liquidity survey, higher-rated corporates and those with familiar names—such as banks, state-owned enterprises, and large firms—can command liquidity in the market.

The top 30 issuers of LCY corporate bonds in Indonesia were the same in Q3 2016 as in Q2 2016 with only the order of rankings changing among firms. The outstanding bond stock of the top 30 LCY corporate issuers totaled IDR217.2 trillion at the end of September, representing 75.7% of aggregate corporate bonds outstanding **(Table 2)**. As in past quarters, banks and nonbank financial institutions dominated the list of the top 30 issuers. Other corporate names on the list came from highly capitalized industries such as telecommunications, energy, and property and real estate, among others.

The composition of the top three issuers of corporate bonds changed during Q3 2016. State-owned lender Indonesia Eximbank maintained the top post, further increasing its bond stock to IDR29.1 trillion, or the equivalent of 10.2% of the entire corporate bond segment. The next-largest issuer was Indosat, which ranked fourth at the end of June, with IDR14.5 trillion worth of outstanding bonds. In the third spot was another state-owned lender, Bank Tabungan Negara with outstanding bonds amounting to IDR13.0 trillion. State-owned firms Bank Rakyat Indonesia and PLN, which were ranked second and third at the end of June, respectively, dropped to the fifth and fourth places at the end of September.

In Q3 2016, new corporate debt issues amounted to IDR27.3 trillion, which were lower by 17.1% q-o-q. On a y-o-y basis, however, the volume of new corporate debt issuance climbed 69.4%. A total of 18 companies raised funds from the debt market in Q3 2016. There were 45 new debt series issued, including five issues of *sukuk ijarah* (bonds backed by lease agreements) and four issues of *sukuk mudharabah* (profit-sharing bonds).

Some of the largest new corporate bonds issued in Q3 2016 are presented in **Table 3**. State-owned lender Indonesia Eximbank led the list, with aggregate issuance of IDR4.3 trillion worth of bonds that comprised a dual-tranche sale in August and a single-tranche sale in September. Telecommunications firm Indosat followed with a multitranche issuance of conventional bonds and *sukuk ijarah* in September valued at IDR3.5 trillion, while state-owned Bank Tabungan Negara was third with a total of IDR3.0 trillion in new issuance from a dual-tranche sale in August.

Most of the new corporate bonds (22 out of 45 bond series) issued during Q3 2016 had medium-term maturities (5–7 years). On other hand, 20 bond series carried maturities of between 1 year and 3 years, while three bond series had maturities of 10 years.

Investor Profiles

Central Government Bonds. At the end of September, foreign investors were still the largest investor group in Indonesia's LCY government bond market with aggregate holdings of IDR685.0 trillion, which accounted for a 39.2% share of the total stock **(Figure 2)**. Foreign investor holdings were up slightly from a 39.1% share at the end of June and from a 37.6% share at the end of September 2015. Yields on Indonesian government bonds remained the highest among all emerging East Asian markets and continued to attract foreign investor interest. Included among foreign investors are foreign governments and central banks, which together held a 6.8% share of LCY government bonds outstanding at the end of September.

Foreign holdings are mostly concentrated in long-term maturities (more than 10 years), which accounted for a 38.2% share of foreign investor holdings at the end of September **(Figure 3)**. Nonresident holdings of bonds with maturities of more than 5 years to 10 years were also substantial, representing a 37.9% share at the end of September. On the other hand, bonds with maturities of 2 years or less only accounted for 5.6% of nonresident holdings.

While banking institutions were the largest domestic investor in Indonesian government bonds, it was the only investor group which recorded a decline in holdings in Q3 2016 from Q3 2015. Bank holdings have been declining since Q3 2014 and now account for only 21.1% of the total LCY central government bond stock.

In contrast, insurance firms and pension funds have been beefing up their holdings of central government

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	29,113	2.23	Yes	No	Banking
2.	Indosat	14,493	1.11	No	Yes	Telecommunications
3.	Bank Tabungan Negara	12,950	0.99	Yes	Yes	Banking
4.	PLN	11,733	0.90	Yes	No	Energy
5.	Bank Rakyat Indonesia	11,345	0.87	Yes	Yes	Banking
6.	Adira Dinamika Multifinance	11,051	0.85	No	Yes	Finance
7.	Telekomunikasi Indonesia	8,995	0.69	Yes	Yes	Telecommunications
8.	Federal International Finance	8,893	0.68	No	No	Finance
9.	Bank Internasional Indonesia	8,880	0.68	No	Yes	Banking
10.	Astra Sedaya Finance	8,645	0.66	No	No	Finance
11.	Bank Pan Indonesia	7,560	0.58	No	Yes	Banking
12.	Perum Pegadaian	7,042	0.54	Yes	No	Finance
13.	Sarana Multigriya Finansial	7,002	0.54	Yes	No	Finance
14.	Bank CIMB Niaga	6,865	0.53	No	Yes	Banking
15.	Bank Permata	6,482	0.50	No	Yes	Banking
16.	Waskita Karya	5,575	0.43	Yes	Yes	Building Construction
17.	Bank OCBC NISP	4,785	0.37	No	Yes	Banking
18.	Medco-Energi International	4,750	0.36	No	Yes	Petroleum and Natural Gas
19.	Toyota Astra Financial Services	4,591	0.35	No	No	Finance
20.	Jasa Marga	4,500	0.35	Yes	Yes	Toll Roads, Airports, and Harbors
21.	Indofood Sukses Makmur	4,000	0.31	No	Yes	Food and Beverages
22.	Agung Podomoro Land	3,700	0.28	No	Yes	Property and Real Estate
23.	Bank Mandiri	3,500	0.27	Yes	Yes	Banking
24.	Bumi Serpong Damai	3,315	0.25	No	Yes	Property and Real Estate
25.	Surya Artha Nusantara Finance	3,150	0.24	No	No	Finance
26.	Indomobil Finance Indonesia	3,114	0.24	No	No	Finance
27.	Antam	3,000	0.23	Yes	Yes	Mining
28.	Wahana Ottomitra Multiartha	2,828	0.22	No	Yes	Finance
29.	Mandiri Tunas Finance	2,825	0.22	No	No	Finance
30.	Summarecon Agung	2,500	0.19	No	Yes	Property and Real Estate
Total Top 30 LCY Corporate Issuers		**217,182**	**16.65**			
Total LCY Corporate Bonds		**286,710**	**21.98**			
Top 30 as % of Total LCY Corporate Bonds		**75.7%**	**75.7%**			

IDR = Indonesian rupiah, LCY = local currency, USD = United States dollar.
Notes:
1. Data as of end-September 2016.
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.

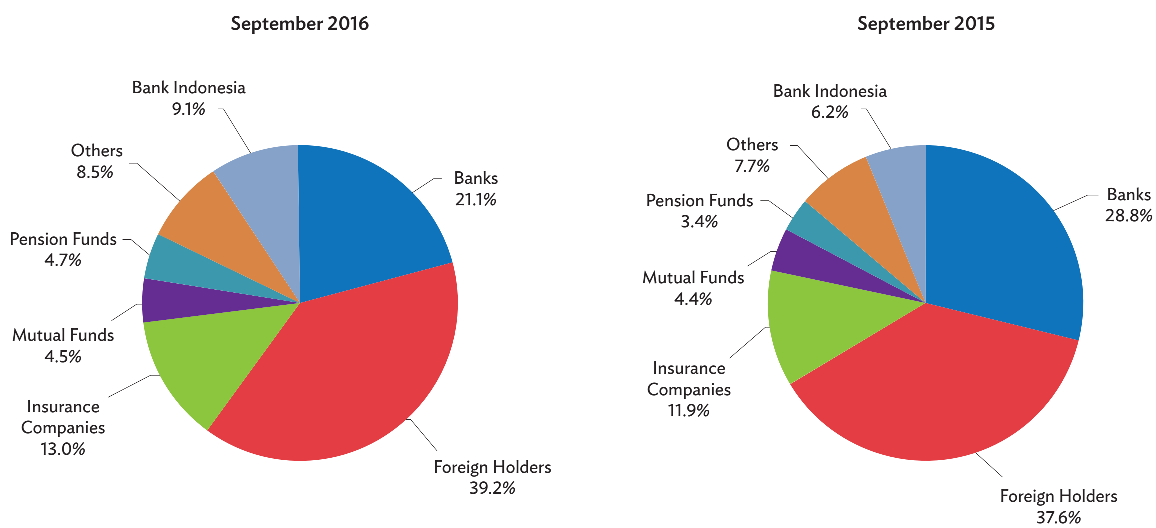
Table 3: Notable Local Currency Corporate Bond Issuance in Q3 2016

Corporate Issuers	Coupon Rate (%)	Issued Amount (IDR billion)
Indonesia Eximbank		
370-day bond	7.25	1,793
3-year bond	7.95	956
5-year bond	8.35	1,582
Indosat		
370-day bond	7.50	1,075
370-day *sukuk ijarah*	7.50	163
3-year bond	8.00	1,047
3-year *sukuk ijarah*	8.00	61
5-year bond	8.60	734
5-year *sukuk ijarah*	8.60	10
7-year bond	9.00	115
10-year bond	9.15	201
10-year *sukuk ijarah*	9.15	54
Bank Tabungan Negara		
3-year bond	8.20	1,347
5-year bond	8.75	1,653

Corporate Issuers	Coupon Rate (%)	Issued Amount (IDR billion)
Federal International Finance		
370-day bond	7.25	868
3-year bond	7.95	1,257
Angkasa Pura		
5-year bond	8.60	1,000
7-year bond	8.80	100
10-year bond	9.00	900
Adira Dinamika Multifinance		
370-day bond	7.90	835
370-day *sukuk mudharabah*	7.90	30
3-year bond	8.75	434
3-year *sukuk mudharabah*	8.75	42
5-year bond	9.25	431
5-year *sukuk mudharabah*	9.25	14
Indonesia Infrastructure Finance		
3-year bond	8.25	825
5-year bond	8.70	250
7-year bond	9.00	425

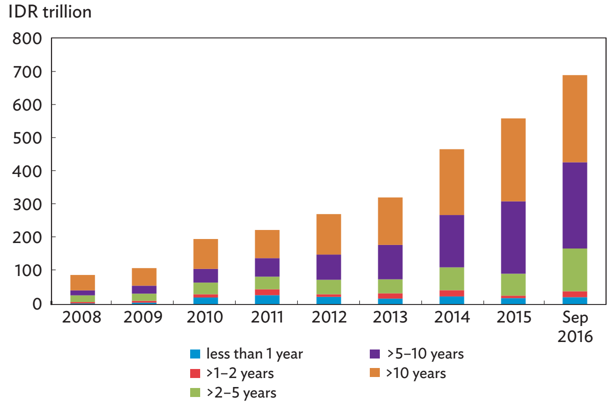
IDR = Indonesian rupiah, Q3 = third quarter.
Notes:
1. *Sukuk ijarah* are Islamic bonds backed by a lease agreement
2. *Sukuk mudharabah* are Islamic bonds backed by a profit-sharing scheme from a business venture or partnership.
Source: Indonesia Stock Exchange.

Figure 2: Local Currency Central Government Bonds Investor Profile



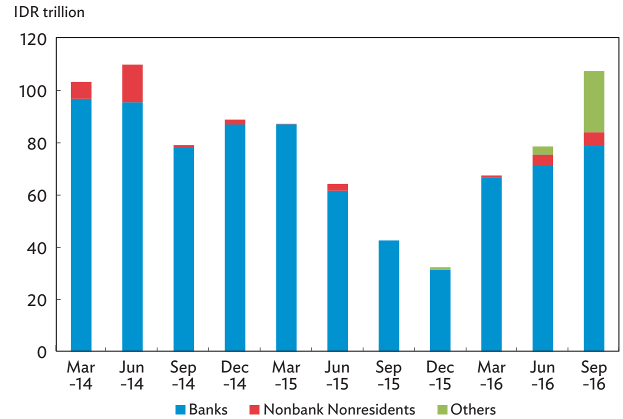
Source: Directorate General of Budget Financing and Risk Management, Ministry of Finance.

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.

Figure 4: Local Currency Central Bank Bills Investor Profile



IDR = Indonesian rupiah.
Notes:
1. In September and December 2015, nonbank nonresidents had no holdings of Sertifikat Bank Indonesia.
2. In March 2016, nonbank nonresidents held IDR0.9 trillion of Sertifikat Bank Indonesia.
Source: Bank Indonesia.

bonds in compliance with regulatory requirement to hold 20% of their assets in government bonds by the end of 2016, and to 30% by 2017. Mutual fund holdings of central government bonds also saw an increase, with their share rising to 4.5% at the end of September, which was broadly comparable with pension funds 4.7% share. Other investors, comprising securities companies and individuals, likewise increased their holdings of central government bonds to a share of 8.5% from 7.7% a year earlier. Bank Indonesia's holdings climbed to a 9.1% share at the end of September.

Central Bank Bills. At the end of September, banking institutions remained the dominant holders of SBI. Bank holdings declined to a share of 73.3% of the total at the end of September from 90.7% at the end of June **(Figure 4)**. About 5.0% of SBI outstanding were held by nonbank nonresident investors, while the remaining 21.8% were accounted for by other investors.

Policy, Institutional, and Regulatory Developments

Bank Indonesia Issues Regulation on Foreign Exchange Call Spread Options

In September, Bank Indonesia announced a new regulation that allows banking institutions to engage in call spread option contracts on foreign exchange transactions. Only banks with capitalization of IDR5 trillion or more are allowed to participate in this hedging product. The regulation also requires an underlying transaction.

Indonesia and Japan Extend Bilateral Currency Swap Arrangement

In October, Indonesia and Japan agreed to extend an existing bilateral currency swap arrangement signed in 2013. The size of the swap facility between the two markets amounts to USD22.8 billion.

Parliament Approves 2017 State Budget

In October, the Indonesian Parliament approved the government's 2017 state budget, which estimated a deficit equivalent to 2.4% of GDP. The 2017 budget projects revenues of IDR1,750.3 trillion versus spending of IDR2,080.5 trillion. The budget includes a hike in the cigarette excise tax and cuts in certain electricity subsidies. The underlying macroeconomic assumptions for the 2017 budget include (i) annual GDP growth of 5.1%, (ii) annual inflation of 4.0%, (iii) an exchange rate of IDR13,300 per USD1, (iv) a 3-month Treasury bill rate of 5.3%, and (v) an Indonesian crude oil price of USD45 per barrel.

Republic of Korea

Yield Movements

Local currency (LCY) government bond yields in the Republic of Korea climbed for all tenors between 31 October and 18 November, shifting the entire yield curve upward **(Figure 1)**. Bond yields for maturities of 2 years and less shed an average of 17 basis points (bps), while yields from the 3-year through 30-year tenors climbed an average of 42 bps. As yields rose faster at the longer end than at the shorter end of the curve, the spread between the 2-year and 10-year tenors widened from 22 bps on 31 October to 45 bps on 18 November.

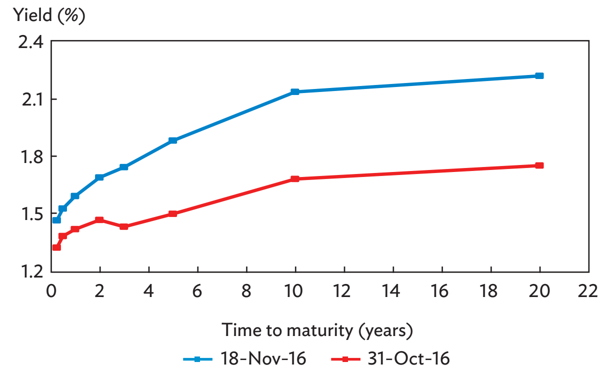
Bond yields rose in October on increased expectations of a United States (US) Federal Reserve rate hike in December following the release of stronger US economic growth in the third quarter (Q3) of 2016. Yields continued to rise in November amid uncertainty over the economic policies of the new US administration.

On 11 November, the Monetary Policy Board of the Bank of Korea decided to maintain the base rate at 1.25% as it has done with its past four monetary policy decisions. The central bank expects that both the domestic and global economies will maintain modest growth. However, the board also noted that risks have increased and therefore it will continue to monitor the domestic and global environments.

Consumer price inflation in the Republic of Korea remained moderate, climbing to 1.3% year-on-year (y-o-y) in October from 1.2% y-o-y in September. On a month-on-month basis, consumer prices inched up 0.1% in October after increasing 0.6% in September.

Real gross domestic product (GDP) growth in the Republic of Korea moderated to 2.7% y-o-y in Q3 2016, according to advance estimates from the Bank of Korea, down from 3.3% y-o-y in the second quarter of 2016. Slower GDP growth in Q3 2016 resulted from declining y-o-y growth in private consumption and weaker y-o-y growth in construction, manufacturing, and services; as well as y-o-y contractions in agriculture, forestry, and fishing production. On a quarter-on-quarter (q-o-q) basis, real GDP growth stood at 0.7% in Q3 2016.

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



Source: Based on data from Bloomberg LP.

In its October economic outlook, the Bank of Korea forecast real GDP to grow 2.5% y-o-y in the second half of 2016 and 2.7% in full-year 2016. It also projected consumer price inflation to level off at 1.1% y-o-y in the second half of 2016 and average 1.0% in full-year 2016.

Size and Composition

The Republic of Korea's LCY bond market expanded 0.6% q-o-q and 3.9% y-o-y in Q3 2016 to reach KRW2,076.6 trillion (USD1,886 billion) at the end of September. The expansion was buoyed by growth in both the government and corporate bond markets **(Table 1)**. The outstanding amount of government bonds grew 0.3% q-o-q and 5.2% y-o-y to KRW855.8 trillion on the back of relatively strong growth in central government bonds, led by Korea Treasury Bonds. Government bond issuance was valued at KRW76.9 trillion in Q3 2016, down 11.6% q-o-q and 8.6% y-o-y on lower quarterly bond sales for both the central bank and the central government.

In the LCY corporate bond market, outstanding bonds grew 0.8% q-o-q and 3.0% y-o-y to reach KRW1,220.8 trillion at the end of September, fueled by relatively fast growth in financial debentures. Issuance of LCY corporate bonds were down 9.8% q-o-q and 18.9% y-o-y to KRW81.5 trillion in Q3 2016.

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

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2015		Q2 2016		Q3 2016		Q3 2015		Q3 2016	
	KRW	USD	KRW	USD	KRW	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**1,999,322**	**1,687**	**2,064,024**	**1,792**	**2,076,602**	**1,886**	**2.1**	**10.5**	**0.6**	**3.9**
Government	813,604	686	853,009	741	855,763	777	1.0	14.3	0.3	5.2
Central Bank Bonds	186,350	157	181,420	158	179,680	163	(1.0)	3.2	(1.0)	(3.6)
Central Government Bonds	536,884	453	583,402	507	585,836	532	1.8	10.0	0.4	9.1
Industrial Finance Debentures	90,370	76	88,188	77	90,247	82	0.7	110.3	2.3	(0.1)
Corporate	1,185,718	1,000	1,211,015	1,051	1,220,839	1,109	2.9	7.9	0.8	3.0

( ) = negative, KRW = Korean won, 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 local currency–USD rates are used.
3. Growth rates are calculated from local currency base and do not include currency effects.
4. Central government bonds include Korea Treasury bonds, National Housing bonds, and Seoul Metro bonds.
Sources: EDAILY *BondWeb* and the Bank of Korea.

The outstanding LCY bonds of the top 30 corporate issuers at the end of September amounted to KRW775.1 trillion, or the equivalent of 63.5% of total LCY corporate bonds outstanding. Korea Housing Finance Corporation remained the largest corporate bond issuer **(Table 2)**. Most of the notable LCY corporate bond issues in Q3 2016 were made by domestic financial institutions such as Industrial Bank of Korea, Korea Eximbank, and Mirae Asset Securities **(Table 3)**.

Investor Profile

The largest investor group in the LCY government bond market at the end of June were insurance companies and pension funds, which held 31.7% of the market's total outstanding stock of LCY government bonds at the end of June **(Figure 2)**. The next-largest investor group were other financial institutions, accounting for a 20.5% share of the total stock. Other major investor groups include general government and banks with shares of 19.3% and 13.4%, respectively.

Insurance companies and pension funds were also the largest investor group in the LCY corporate bond market, with their holdings accounting for 37.7% of the total market at the end of June **(Figure 3)**. In the 12 months through the end of June, insurance companies and pension funds registered the biggest increase in a holdings share at 2.2 percentage points. The largest drop was in the holdings of households and nonprofit organizations at 1.5 percentage points.

Foreign investors sold a net KRW992 billion of the Republic of Korea's LCY bonds in Q3 2016, down from KRW1,229 billion in Q2 2016 and KRW4,149 billion in the first quarter of 2016. On a monthly basis, foreign investors' net bond sales amounted to KRW663 billion in September, down from KRW917 billion in August **(Figure 4)**.

Policy, Institutional, and Regulatory Developments

Financial Services Commission Announces Law on Corporate Governance for Financial Companies

The Financial Services Commission announced in August the State Council's approval on 26 July of the Enforcement Decree of the Act on Corporate Governance of Financial Companies as well as the effectivity of the decree on 1 August. The decree aims to promote the sound and transparent corporate governance of financial companies. Among its key provisions are disqualification criteria for directors and officers, recommended composition of the board of directors, a fit-and-proper rule for the largest shareholder, and performance-based pay for officers and employees.

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	97,834	88.8	Yes	No	No	Housing Finance
2.	NH Investment & Securities	60,743	55.2	Yes	Yes	No	Securities
3.	Mirae Asset Daewoo Securities	55,611	50.5	No	Yes	No	Securities
4.	Korea Investment and Securities	49,345	44.8	No	No	No	Securities
5.	Korea Land & Housing Corporation	49,049	44.5	Yes	No	No	Real Estate
6.	Mirae Asset Securities	40,653	36.9	No	Yes	No	Securities
7.	Industrial Bank of Korea	39,831	36.2	Yes	Yes	No	Banking
8.	Hana Financial Investment	35,411	32.2	No	No	No	Securities
9.	Korea Deposit Insurance Corporation	29,450	26.7	Yes	No	No	Insurance
10.	Hyundai Securities	24,272	22.0	No	No	No	Securities
11.	Korea Electric Power Corporation	23,410	21.3	Yes	Yes	No	Electricity, Energy, and Power
12.	Korea Expressway	22,320	20.3	Yes	No	No	Transport Infrastructure
13.	Shinhan Bank	20,391	18.5	No	No	No	Banking
14.	Korea Rail Network Authority	18,470	16.8	Yes	No	No	Transport Infrastructure
15.	Samsung Securities	18,288	16.6	No	Yes	No	Securities
16.	Kookmin Bank	17,963	16.3	No	No	No	Banking
17.	Woori Bank	17,495	15.9	Yes	Yes	No	Banking
18.	Daishin Securities	16,706	15.2	No	Yes	No	Securities
19.	NongHyup Bank	15,070	13.7	Yes	No	No	Banking
20.	Korea Gas Corporation	14,919	13.5	Yes	Yes	No	Gas Utility
21.	Small & medium Business Corporation	12,990	11.8	Yes	No	No	SME Development
22.	Korea Eximbank	12,120	11.0	Yes	No	No	Banking
23.	Korea Student Aid Foundation	11,340	10.3	Yes	No	No	Student Loan
24.	Standard Chartered First Bank Korea	11,190	10.2	No	No	No	Banking
25.	Shinhan Card	10,789	9.8	No	No	No	Credit Card
26.	Hyundai Capital Services	10,489	9.5	No	No	No	Consumer Finance
27.	Korea Water Resources Corporation	10,481	9.5	Yes	No	No	Water
28.	Shinyoung Securities	9,618	8.7	No	Yes	No	Securities
29.	Korea Railroad Corporation	9,550	8.7	Yes	No	No	Transport Infrastructure
30.	NongHyup	9,340	8.5	Yes	No	No	Diversified
Total Top 30 LCY Corporate Issuers		**775,138.7**	**703.9**				
Total LCY Corporate Bonds		**1,220,839.0**	**1,108.7**				
Top 30 as % of Total LCY Corporate Bonds		**63.5%**	**63.5%**				

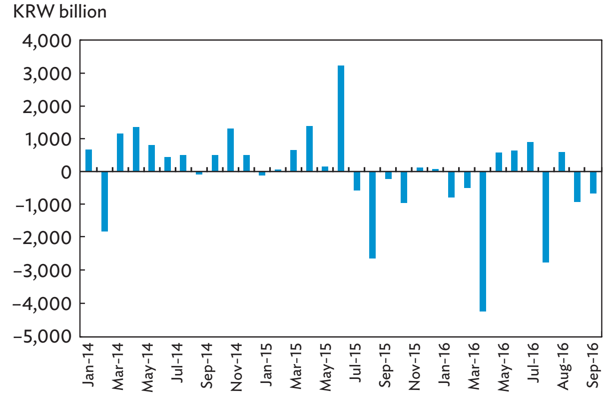
KOSDAQ = Korean Securities Dealers Automated Quotations, KOSPI = Korea Composite Stock Price Index, KRW = Korean won, LCY = local currency, USD = United States dollar.
Notes:
1. Data as of end-September 2016.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Sources: *AsianBondsOnline* calculations based on Bloomberg LP and EDAILY *BondWeb* data.

Table 3: Notable Local Currency Corporate Bond Issuance in Q3 2016

Corporate Issuers	Coupon Rate (%)	Issued Amount (KRW billion)
Industrial Bank of Korea		
0.5-year bond	1.36	320
0.6-year bond	1.36	410
2-year bond	1.45	300
3-year bond	1.32	300
Perpetual bond	3.16	290
Korea Eximbank		
1-year bond	1.40	310
Mirae Asset Securities		
5.5-year bond	3.50	300

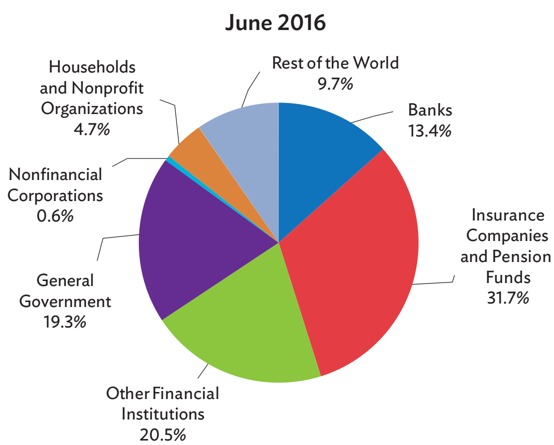
KRW = Korean won, Q3 = third quarter.
Note: Coupon rates for 0.5- and 0.6-year bonds of Industrial Bank of Korea and 1-year bond of Korea Eximbank are indicative yields at end-September 2016.
Source: Based on data from Bloomberg LP.

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



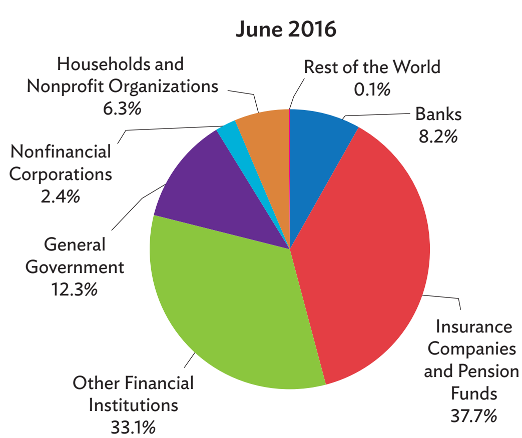
KRW = Korean won.
Source: Financial Supervisory Service.

Figure 2: Local Currency Government Bonds Investor Profile



Sources: *AsianBondsOnline* and the Bank of Korea.

Figure 3: Local Currency Corporate Bonds Investor Profile



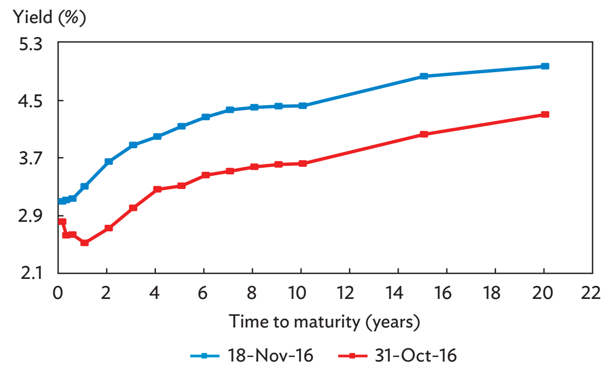
Sources: *AsianBondsOnline* and the Bank of Korea.

Malaysia

Yield Movements

Between 31 October and 18 November, local currency (LCY) government bond yields rose for all tenors. Yields for tenors of less than 1 year rose 42 basis points (bps) on average **(Figure 1)**. Yields for tenors of 1 year to 20 years rose 81 bps on average, ranging between 67 bps and 92 bps. The spread between the 2-year and 10-year yields narrowed to 77 bps on 18 November from 89 bps on 31 October.

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



Source: Based on data from Bloomberg LP.

Yields have been on the rise since September due to volatile oil prices and, particularly, after the October release of the minutes of the United States (US) Federal Reserve meeting, which strengthened the case for the likelihood of a federal funds rate hike in December. Yields soared in November as the market reacted to the unexpected outcome of the US presidential election, reflecting uncertainty over the economic policies of the next administration. Markets foresee increased inflationary pressures in the US as the new administration intends to focus on fiscal expansion, prompting speculation that the Federal Reserve may raise rates more quickly than previously expected. This has led to a sell-off in bonds in the region. Malaysia, along with Indonesia, saw the highest rise in yields as more than a third of its LCY central government bonds are held by foreign investors.

The depreciation of the Malaysian ringgit reflected these developments. As of 18 November, the currency had dropped 8.3% against the US dollar since 1 September and 5.2% since the US presidential election on 8 November. In an effort to mitigate market volalitility, Bank Negara Malaysia (BNM) announced on 13 November the reinforcement of existing restrictions on the facilitation of ringgit nondeliverable forward contracts, which the BNM considers speculative.

Foreign holdings of central government bonds remained high in the third quarter (Q3) of 2016. However, September saw the first net capital outflows for the year, with foreign holdings of central government bonds declining to MYR212 billion at end-September from a high of MYR218 billion in August, partly due to maturing Malaysian Government Securities (MGSs). Foreign investors returned to the market in October due to new issuances of central government bonds, resulting in a rebound of foreign holdings to MYR218 billion. However, recent news in November noted outflows following market uncertainty which resulted after the US election.

At its 7 September Monetary Policy Committee meeting, BNM decided to keep its overnight policy rate at 3.00%. The central bank stated that while volatility in global financial markets has subsided, downside risks remain. The committee expects Malaysia's economy to grow in 2016 in line with prior expectations of continued support from domestic demand.

Malaysia's economic growth inched up to 4.3% y-o-y in Q3 2016 from 4.0% y-o-y in the second quarter (Q2) of 2016, mainly due the accelerated increase in private consumption. Inflation remained subdued in Q3 2016, averaging 1.4% y-o-y over the 3-month period.

Size and Composition

The Malaysian LCY bond market barely changed in size in Q3 2016, with a minimal increase in bonds outstanding of 0.4% quarter-on-quarter (q-o-q) to reach MYR1,168 billion (USD282 billion) at the end of September **(Table 1)**. A decline in the government bond sector was compensated for by growth in the corporate bond market. Total government bonds outstanding summed to MYR632 billion, while corporate bonds amounted to MYR537 billion. *Sukuk* (Islamic bonds)

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

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2015		Q2 2016		Q3 2016		Q3 2015		Q3 2016	
	MYR	USD	MYR	USD	MYR	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**1,076**	**245**	**1,163**	**289**	**1,168**	**282**	**(0.01)**	**(0.3)**	**0.4**	**8.6**
Government	602	137	644	160	632	153	(1.0)	(4.9)	(1.9)	4.9
Central Government Bonds	549	125	600	149	592	143	(1.5)	8.0	(1.3)	8.0
of which: *Sukuk*	206	47	232	57	236	57	(1.4)	10.4	1.9	14.6
Central Bank Bills	25	6	15	4	11	3	6.4	(77.0)	(29.5)	(56.7)
of which: *Sukuk*	2	0	0	0	0	0	(59.5)	(96.0)	–	(100.0)
Sukuk Perumahan Kerajaan	28	6	28	7	28	7	1.8	67.1	0.0	0.0
Corporate	474	108	519	129	537	130	1.3	6.1	3.3	13.3
of which: *Sukuk*	340	77	375	93	393	95	1.0	8.5	4.9	15.5

( ) = 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 local currency–USD rate is 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.

continued to account for most of Malaysia's LCY bond market with a share of 56.3% at the end of September. On a y-o-y basis, Malaysia's LCY bond market expanded 8.6%.

Government Bonds. LCY government bonds outstanding fell 1.9% q-o-q to MYR632 billion at the end of September due to maturing MGSs and declining issuances in Q3 2016. The outstanding stock of central bank bills continued to decline, while Government Investment Issues increased in Q3 2016. On a y-o-y basis, government bonds outstanding rose 4.9%.

Issuance of government bonds fell in Q3 2016 due to smaller bond auction programs for MGSs and Government Investment Issues. On the other hand, issuance of Treasury bills and central bank bills rose in Q3 2016, albeit by smaller amounts.

Corporate Bonds. LCY corporate bonds rose 3.3% q-o-q to MYR537 billion at the end of September. Malaysia's LCY corporate bond market continued to be dominated by *sukuk* in Q3 2016, with their share of the total inching up to 73.3% at the end of September from 72.2% at the end of June.

Table 2 presents the top 30 LCY corporate bond issuers in Malaysia at the end of September. The top 30 issuers comprised 54.7% of the total LCY corporate bond market, with aggregate bonds outstanding amounting to MYR293.5 billion. Financial firms, including banks, continued to account for a majority of the top 30 largest debt issuers, with total bonds outstanding worth MYR158.8 billion. Other firms in the list include those involved in transportation and communications, utilities, construction, and real estate. Approximately two-thirds of those on the list are also state-owned firms. Highway operator Project Lebuhraya Usahasama remained the largest issuer with MYR30.6 billion of outstanding bonds. State-owned mortgage firm Cagamas was second with MYR27.0 billion.

Corporate bond issuance picked up in Q3 2016 to MYR39.9 billion from MYR34.1 billion in the previous quarter. *Sukuk* dominated corporate bond issuance in Q3 2016, with a share rising to 69.9% from 58.9% in the previous quarter. By type of instrument, Islamic medium-term notes (MTNs) continued to account for the single-highest share of total issuance at 53.5%, while conventional commercial paper was next with a share of 16.8%. **Table 3** lists notable corporate bond issuances in Q3 2016.

Government-owned entities were some of the largest bond issuers in Q3 2016, led by Sarawak Hidro, developer of Malaysia's largest hydropower project, which issued MYR5.5 billion worth of multitranche Islamic MTNs. Malaysia's Lembaga Pembiayaan Perumahan Sektor

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.	Project Lebuhraya Usahasama	30.6	7.4	No	No	Transport, Storage, and Communications
2.	Cagamas	27.0	6.5	Yes	No	Finance
3.	Danainfra Nasional	25.2	6.1	Yes	No	Finance
4.	Prasarana	20.6	5.0	Yes	No	Transport, Storage, and Communications
5.	Khazanah	20.0	4.8	Yes	No	Finance
6.	Perbadanan Tabung Pendidikan Tinggi Nasional	14.5	3.5	Yes	No	Finance
7.	Pengurusan Air	13.8	3.3	Yes	No	Energy, Gas, and Water
8.	Maybank	13.7	3.3	No	Yes	Banking
9.	CIMB Bank	10.1	2.4	No	No	Banking
10.	Sarawak Energy	9.5	2.3	Yes	No	Energy, Gas, and Water
11.	Jimah East Power	9.0	2.2	Yes	No	Energy, Gas, and Water
12.	Public Bank	8.6	2.1	No	No	Banking
13.	Sarawak Hidro	6.5	1.6	Yes	No	Energy, Gas, and Water
14.	Aman Sukuk	6.3	1.5	Yes	No	Construction
15.	Rantau Abang Capital	6.0	1.4	Yes	No	Finance
16.	RHB Bank	5.4	1.3	No	No	Banking
17.	Turus Pesawat	5.3	1.3	Yes	No	Transport, Storage, and Communications
18.	CIMB Group Holdings	5.2	1.3	Yes	No	Finance
19.	BGSM Management	5.1	1.2	No	No	Transport, Storage, and Communications
20.	1Malaysia Development	5.0	1.2	Yes	No	Finance
21.	Danga Capital	5.0	1.2	Yes	No	Finance
22.	Putrajaya Holdings	4.9	1.2	Yes	No	Property and Real Estate
23.	Manjung Island Energy	4.9	1.2	No	No	Energy, Gas, and Water
24.	YTL Power International	4.8	1.2	No	Yes	Energy, Gas, and Water
25.	GOVCO Holdings	4.6	1.1	Yes	No	Finance
26.	Jambatan Kedua	4.6	1.1	Yes	No	Transport, Storage, and Communications
27.	Celcom Networks	4.5	1.1	No	No	Transport, Storage, and Communications
28.	Malakoff Power	4.4	1.1	No	No	Energy, Gas, and Water
29.	Bank Pembangunan Malaysia	4.4	1.1	Yes	No	Banking
30.	AM Bank	4.2	1.0	No	Yes	Banking
Total Top 30 LCY Corporate Issuers		**293.5**	**70.9**			
Total LCY Corporate Bonds		**536.6**	**129.7**			
Top 30 as % of Total LCY Corporate Bonds		**54.7%**	**54.7%**			

LCY = local currency, MYR = Malaysian ringgit, USD = United States dollar.
Notes:
1. Data as of end-September 2016.
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 Q3 2016

Corporate Issuers	Coupon Rate (%)	Issued Amount (MYR million)
Sarawak Hidro		
3-year Islamic MTN	4.11	245
4-year Islamic MTN	4.16	360
5-year Islamic MTN	4.21	410
6-year Islamic MTN	4.25	425
7-year Islamic MTN	4.29	450
8-year Islamic MTN	4.34	470
9-year Islamic MTN	4.38	470
10-year Islamic MTN	4.43	480
11-year Islamic MTN	4.47	470
13-year Islamic MTN	4.56	510
14-year Islamic MTN	4.61	625
15-year Islamic MTN	4.67	625
Lembaga Pembiayaan Perumahan Sektor Awam		
3-year Islamic MTN	3.50	300
5-year Islamic MTN	3.60	600
7-year Islamic MTN	3.83	700
10-year Islamic MTN	4.05	700
20-year Islamic MTN	4.62	900
30-year Islamic MTN	4.90	800

MTN = medium-term note, MYR = Malaysian ringgit, Q3 = third quarter.
Source: Bank Negara Malaysia Bond Info Hub.

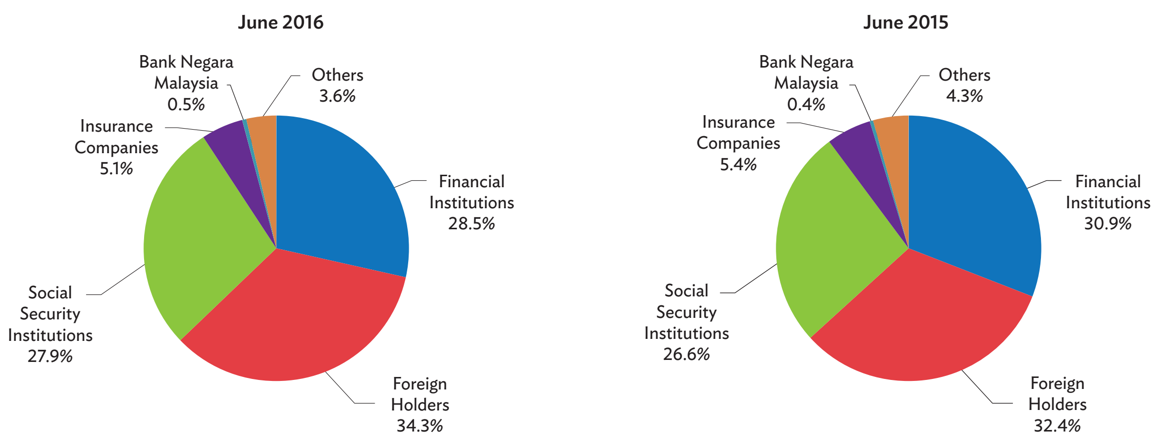
Awam (Public Sector Housing Financing Agency) also issued multitranche Islamic MTN worth MYR4.0 billion. Lebuhraya Duke Fasa 3, established by private company Ekovest Berhad to undertake the Duke Phase 3 expressway under a concession agreement with the Government of Malaysia, issued MYR3.6 billion worth of multitranche Islamic MTNs.

Investor Profile

Foreign investors continued to account for the largest holdings of LCY government bonds at the end of June with a 34.3% share of the total, up from 32.4% a year earlier **(Figure 2)**. Financial institutions remained the second-largest investor group of LCY government bonds with a share of 28.5% at the end of June, down from 30.9% in June 2015. The share of social security institutions' government bond holdings inched up to 27.9% from 26.6% during the review period.

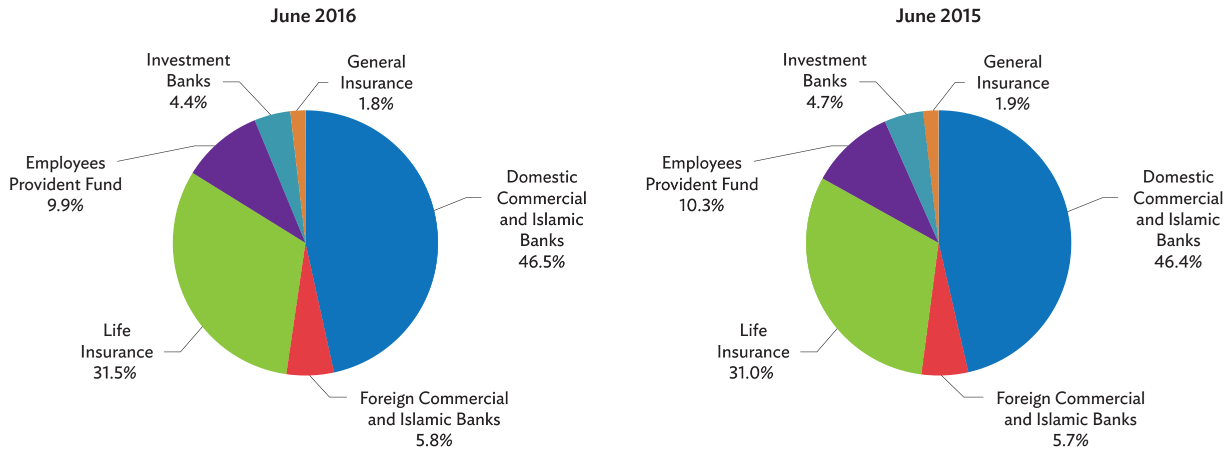
The investor profile of Malaysia's corporate bond market was barely changed at the end of June compared with a year earlier **(Figure 3)**. Domestic banks, both commercial and Islamic, remained the largest investor group with a share of 46.5%. Life insurance companies remained the second-largest holders of corporate bonds with a share of 31.5%.

Figure 2: 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 3: Local Currency Corporate Bonds Investor Profile



Note: The Employees Provident Fund's bond holdings data are as of end-December 2015.
Sources: Bank Negara Malaysia and the Employees Provident Fund.

Policy, Institutional, and Regulatory Developments

Prime Minister Announces 2017 Federal Budget

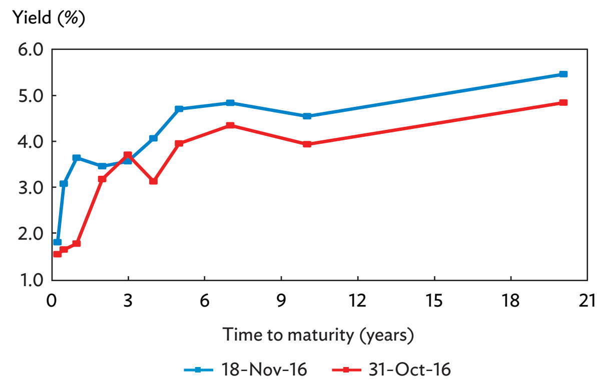
On 21 October, the Prime Minister announced the release of Malaysia's 2017 federal budget with a total allocation of MYR260.8 billion for a 3.4% increase from the 2016 revised budget. The government also announced a fiscal deficit target of MYR40.3 billion, or 3.0% of gross domestic product, down from the 2016 target of 3.1%. Federal government revenue collection is expected to increase 3.0% y-o-y to MYR219.7 billion. The Prime Minister noted the decline in revenues due to the continued fall in oil prices, with an estimated loss of MYR30 billion. Collections from the implementation of the Goods and Services Tax, which was launched in 2015, had reached MYR30 billion as of 19 October 2016. The economy is expected to grow 4.0%–5.0% in 2017, while annual inflation is forecasted at 2.0%–3.0%.

Philippines

Yield Movements

Between 31 October and 18 November, Philippine local currency (LCY) government bond yields rose for all tenors except the 3-year tenor, which fell 14 basis points (bps) **(Figure 1)**. Yields rose the most for the 6-month and 1-year tenors, which soared 142 bps and 186 bps, respectively. Yields for tenors between 2-years and 20-years rose 61 bps on average. The yield spread between the 2-year and 10-year tenors widened to 108 bps on 18 November from 75 bps on 31 October.

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



Source: Based on data from Bloomberg LP.

Yields have been on an upward trend since an uptick was observed in the middle of September ahead of central bank monetary policy meetings in Japan, the Philippines, and the United States (US). Yields likewise rose in October amid expectations of higher US inflation and an increased probability of a US policy rate hike at the end of the year. Yields jumped in November following the outcome of the US presidential election. Markets expect higher inflation in the US as the new administration has expressed its desire to increase fiscal spending. This has further strengthened the case for the US Federal Reserve to push through with a federal funds rate hike in December and it may continue raising rates in 2017 more quickly than previously expected.

The Monetary Board of the Bangko Sentral ng Pilipinas (BSP) decided during its 22 September and 10 November meetings to keep the interest rate on the overnight reverse repurchase facility at 3.0%. The board also kept interest rates on the overnight deposit and lending facilities unchanged and maintained the reserve requirement ratios at their current levels. However, in its 10 November monetary policy meeting, the BSP announced its expectations for inflation to rise to the midpoint of its target range in 2017 and 2018. The BSP noted upward pressures on inflation coming from pending adjustments in power rates and the proposed tax policy reform program. Inflation remained benign in the third quarter (Q3) of 2016 at 1.9% y-o-y in July, 1.8% y-o-y in August, and a 2.3% y-o-y in September. In October, inflation was unchanged at 2.3% y-o-y.

The Philippines' economy grew 7.1% y-o-y in Q3 2016, following growth of 7.0% y-o-y in the second quarter of 2016, and remained the fastest-growing economy in the region. Growth continues to be supported by private consumption, which grew 7.3% y-o-y, and robust investment, which increased 20.0% y-o-y. By industry, the economy's expansion was driven primarily by sustained growth in the industry and services sectors.

Size and Composition

The Philippine LCY bond market expanded in Q3 2016 by 2.4% quarter-on-quarter (q-o-q) and 1.6% y-o-y to reach PHP4,800 billion (USD99 billion) at the end of September **(Table 1)**. The government bond market, with an outstanding size of PHP3,955 billion at the end of September, grew 1.9% q-o-q and 0.4% y-o-y in Q3 2016, buoyed by increases in Treasury bills and bonds. The corporate bond market registered relatively high growth rates of 4.6% q-o-q and 7.7% y-o-y in Q3 2016 for a total of PHP845 billion worth of outstanding bonds at the end of September.

The top 30 issuers in the LCY corporate bond market had combined bonds outstanding of PHP751.3 billion at the end of September, which amounted to 89% of total LCY corporate bonds outstanding **(Table 2)**. The top three LCY corporate issuer groups in the Philippines are banks, property companies, and holding firms, with bonds outstanding that comprise 27.5%, 24.4%, and 20.1%, respectively, of the total market **(Figure 2)**. Across all issuer groups, banks posted the biggest y-o-y drop in their

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

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2015		Q2 2016		Q3 2016		Q3 2015		Q3 2016	
	PHP	USD	PHP	USD	PHP	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**4,723**	**101**	**4,688**	**99**	**4,800**	**99**	**1.7**	**2.8**	**2.4**	**1.6**
Government	3,939	84	3,880	82	3,955	82	1.1	2.4	1.9	0.4
Treasury Bills	282	6	288	6	293	6	2.6	(0.9)	1.8	3.7
Treasury Bonds	3,577	77	3,517	75	3,587	74	1.0	3.8	2.0	0.3
Others	80	2	76	2	76	2	0.0	(30.9)	0.0	(5.6)
Corporate	784	17	808	17	845	17	4.7	4.8	4.6	7.7

( ) = negative, PHP = Philippine peso, 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 end-of-period local currency–USD rates are used.
3. Growth rates are calculated from a local currency 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.

respective share of the total while utility firms recorded the largest y-o-y increase.

LCY bond issuance surged 103.0% q-o-q but dropped 17.3% y-o-y to PHP369.9 billion in Q3 2016. Issuance of government securities, which include Treasury bills and bonds, soared 85.6% q-o-q but plunged 19.9% y-o-y to PHP325.0 billion. The largest issuance of government securities during the quarter was September's sale of Retail Treasury Bonds worth PHP100 billion maturing in 10 years and carrying a 3.5% coupon.

Issuance of corporate bonds increased on both a q-o-q and y-o-y basis in Q3 2016, gaining 540.7% q-o-q and 9.4% y-o-y to total PHP44.9 billion. Among the notable corporate bond issues during Q3 2016 were (i) SMC Global Power Holdings' PHP15 billion triple-tranche fixed-rate bonds sale in July, (ii) Ayala Corporation's PHP10 billion 7-year fixed-rate bonds sold in July, (iii) SM Prime Holdings' PHP10 billion 10-year fixed-rate bonds issued in July, and (iv) Metropolitan Bank & Trust Company's (Metrobank) PHP8.65 billion long-term negotiable certificates of time deposit maturing in 7 years that were sold in September **(Table 3)**. The bonds of Ayala Corporation and SM Prime Holdings were part of an enhanced shelf registration program, launched in November 2015, that allows corporate issuers of securities to time their fund-raising activities as needed and/or to take advantage of favorable market conditions. According to the Securities and Exchange Commission, the shelf registration program has helped boost the issuance of corporate securities thus far in 2016.

Investor Profile

Banks and investment houses were the most dominant investor group in the Philippine government bond market, with their holdings of government securities comprising 37.0% of the total at the end of September **(Figure 3)**. The second-largest holder of government securities were contractual savings institutions (specifically insurance companies) and tax-exempt institutions with a combined holdings share of 31.4%. Among all investor groups shown in Figure 3, the three that experienced increases in their respective holdings shares between September 2015 and September 2016 were (i) contractual savings institutions and tax-exempt institutions; (ii) banks and investment houses; and (iii) brokers, custodians, and depositories.

Ratings Update

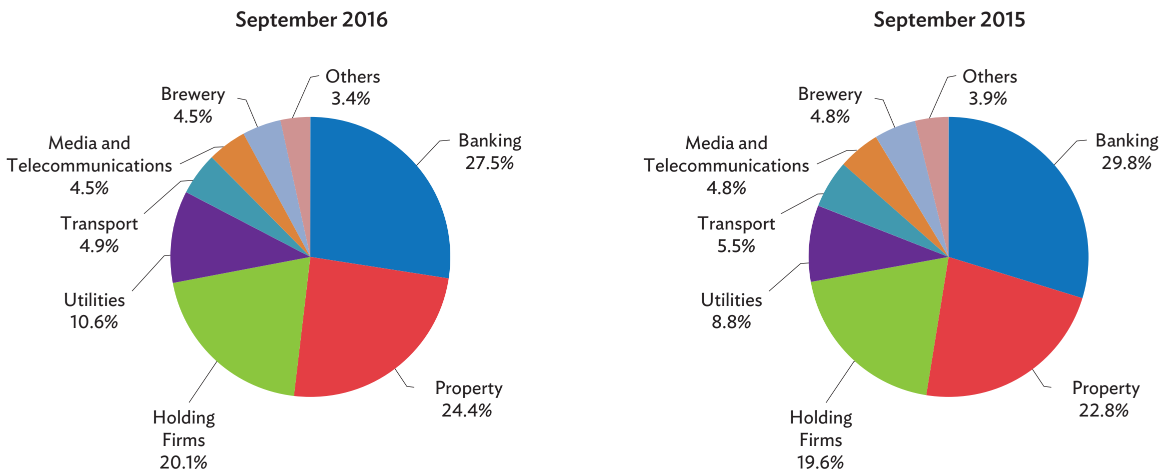
S&P Global Ratings announced in September that it had affirmed its long-term and short-term sovereign credit ratings for the Philippines at BBB and A–2, respectively, with a stable outlook for both ratings. The credit rating agency has likewise affirmed its Association of Southeast Asian Nations (ASEAN) regional scale rating for the Philippines at axA/axA–2. S&P Global Ratings stated that its ratings on the Philippines were the result of the country's "strong external position, which features rising foreign reserves and low and declining external debt" that offset the country's "lower middle-income economy and rising uncertainties surrounding the stability, predictability, and accountability of its new government."

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	70.3	1.5	No	Yes	Property
2.	Metrobank	55.4	1.1	No	Yes	Banking
3.	SM Prime	55.0	1.1	No	Yes	Property
4.	Ayala Corporation	50.0	1.0	No	Yes	Holding Firms
5.	San Miguel Brewery	37.8	0.8	No	No	Brewery
6.	BDO Unibank	37.5	0.8	No	Yes	Banking
7.	Aboitiz Equity Ventures	32.0	0.7	No	Yes	Holding Firms
8.	Filinvest Land	32.0	0.7	No	Yes	Property
9.	JG Summit	30.0	0.6	No	Yes	Holding Firms
10.	Philippine National Bank	29.1	0.6	No	Yes	Banking
11.	SM Investments	27.3	0.6	No	Yes	Holding Firms
12.	Meralco	23.5	0.5	No	Yes	Electricity, Energy, and Power
13.	Security Bank	23.0	0.5	No	Yes	Banking
14.	Rizal Commercial Banking Corporation	22.1	0.5	No	Yes	Banking
15.	GT Capital	22.0	0.5	No	Yes	Holding Firms
16.	South Luzon Tollway	18.3	0.4	No	No	Transport
17.	Globe Telecom	17.0	0.4	No	Yes	Telecommunications
18.	East West Bank	16.8	0.3	No	Yes	Banking
19.	Maynilad Water Services	16.2	0.3	No	No	Water and Wastewater Services
20.	MCE Leisure (Philippines)	15.0	0.3	No	No	Casinos and Gaming
21.	Philippine Long Distance Telephone Company	15.0	0.3	No	Yes	Telecommunications
22.	SMC Global Power	15.0	0.3	No	No	Electricity, Energy, and Power
23.	Union Bank of the Philippines	14.0	0.3	No	Yes	Banking
24.	First Metro Investment Corporation	12.0	0.2	No	No	Banking
25.	Robinsons Land	12.0	0.2	No	Yes	Property
26.	Manila North Tollways	11.9	0.2	No	No	Transport
27.	MTD Manila Expressway	11.5	0.2	No	No	Transport
28.	Energy Development Corporation	10.5	0.2	No	Yes	Electricity, Energy, and Power
29.	Aboitiz Power	10.0	0.2	No	Yes	Electricity, Energy, and Power
30	8990 Holdings	9.0	0.2	No	Yes	Property
Total Top 30 LCY Corporate Issuers		**751.3**	**15.5**			
Total LCY Corporate Bonds		**845.0**	**17.4**			
Top 30 as % of Total LCY Corporate Bonds		**88.9%**	**88.9%**			

LCY = local currency, PHP = Philippine peso, USD = United States dollar.
Notes:
1. Data as of end-September 2016.
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.

Figure 2: Local Currency Corporate Bonds Outstanding by Sector



Source: Based on data from Bloomberg LP.

Table 3: Notable Local Currency Corporate Bond Issuance in Q3 2016

Corporate Issuers	Coupon Rate (%)	Issued Amount (PHP billion)
SMC Global Power		
5-year bond	4.35	6.15
7-year bond	4.76	4.09
10-year bond	5.18	4.76
Ayala Corporation		
7-year bond	3.92	10.00
SM Prime Holdings		
10-year bond	4.20	10.00
Metrobank		
7-year bond	3.50	8.65

PHP = Philippine peso, Q3 = third quarter.
Source: Bloomberg LP.

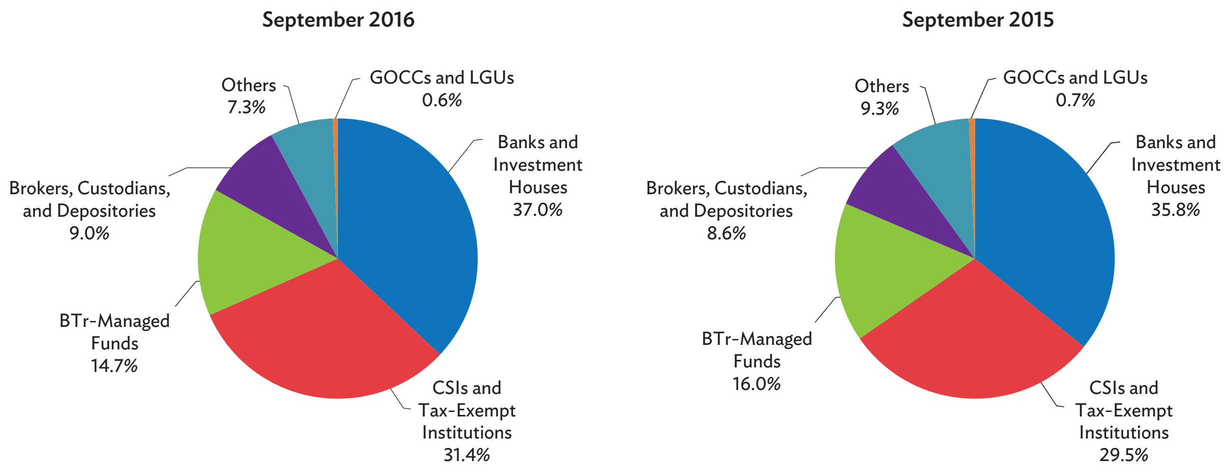
RAM Ratings, a Malaysian credit rating agency, announced in October that it has upgraded the Philippines' ASEAN-scale rating to $_{sea}A_{1(pi)}$/Stable from $_{sea}A2_{(pi)}$/Positive. The ratings upgrade was based on the rating agency's assessment of the Philippine economy's resilience, specifically in terms of favorably "withstanding external volatilities" relative to ASEAN peers as well as the government's "impressive progress" in implementing key administrative and legislative reforms.

Policy, Institutional, and Regulatory Developments

First Tax Reform Package Submitted to Congress in September

The Department of Finance announced in September that it had submitted its first of four tax reform packages to Congress. The proposed tax reform measures include restructuring the personal income tax system, widening the tax base, and adjusting excise taxes on automobiles and petroleum products. The comprehensive tax reform program will enable the government to raise the additional funds needed to increase public infrastructure spending and investments in human capital and social protection.

Figure 3: Local Currency Government Bonds Investor Profile



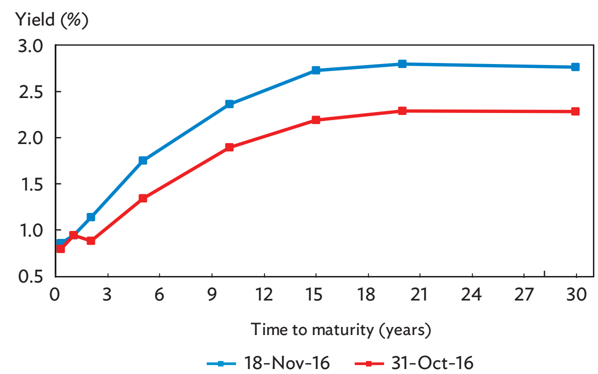
BTr = Bureau of the Treasury, CSIs = contractual savings institutions, GOCCs = government-owned or -controlled corporations, LGUs = local government units.
Source: Bureau of the Treasury.

Singapore

Yield Movements

Local currency (LCY) government bond yields rose for all tenors between 31 October and 18 November **(Figure 1)**. Yields for securities with maturities of less than a year increased 6 basis points (bps) while yields for bonds with 1-year maturity remain unchanged. Yields for bonds with 2-year through 5-year maturities rose an average of 33 bps, while yields for 10-year through 30-year maturities rose an average of 50 bps. The spread between the 2-year and 10-year tenors widened from 101 bps on 31 October to 122 bps on 18 November.

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



Source: Based on data from Bloomberg LP.

Yields at the longer end of the curve for Singapore Government Securities (SGSs) bonds rose higher than at the shorter end. The uneven rise was mainly due to investor uncertainty regarding United States (US) short- and long-term economic policies of the next US administration, and stronger anticipation of a US Federal Reserve rate hike in response to the congressional testimony of the Federal Reserve chair on 17 November signaling that an increase is imminent.

In its second biannual monetary policy statement on 14 October, the Monetary Authority of Singapore (MAS) maintained its policy stance, which has been in place since April 2016, keeping the slope of the Singapore dollar nominal exchange rate policy band at zero and leaving the width and the level at which it is centered unchanged. The decision was made amid a slowing Singapore economy, contracting export sector, and the backdrop of weak global demand. The MAS noted that its neutral policy stance will persist for an extended period to ensure price stability in the medium-term and to offer continued support for the weak economy.

According to the Ministry of Trade and Industry's advance estimates, Singapore's gross domestic product (GDP) for the third quarter (Q3) of 2016 eased to 0.6% year-on-year (y-o-y) from 2.0% y-o-y in the second quarter (Q2) of 2016. The slowdown was mainly due to contractions in the manufacturing and service sectors of 1.1% y-o-y and 0.1% y-o-y, respectively, a reversal from growth of 1.4% y-o-y and 1.2% y-o-y in Q2 2016. On a seasonally adjusted and annualized basis, GDP contracted 4.1% quarter-on-quarter (q-o-q) in Q3 2016 after expanding 0.2% in Q2 2016. GDP for full-year 2016 is expected to come in at the lower end of the 1.0%–2.0% forecast range, with the outlook for 2017 forecast to be only slightly better.

Consumer prices fell 0.2% y-o-y in September, the 23rd consecutive month of deflation, primarily due to a continued decline in private road transportation costs and housing and utility costs. The decline largely reflects the ample global oil supply amid weak demand. While on the domestic side, inflationary pressures have been tempered by slack in the labor market. Preliminary estimates by the Ministry of Manpower showed total employment shrinking by 3,300 in Q3 2016, noting it was only the second quarter in which employment has contracted since the global financial crisis. The slowdown in employment will gradually weaken domestic inflationary pressures. The MAS projects inflation of about –0.5% in 2016 and 0.5%–1.5% in 2017, which is in line with an expected rise in global oil prices.

Size and Composition

LCY bonds outstanding in Singapore expanded to SGD315 billion (USD231 billion) at the end of September from SGD314 billion (USD233 billion) at the end of June, reflecting a gain of 0.4% q-o-q and a decline of 0.7% y-o-y **(Table 1)**. Compared with Q2 2016, the outstanding stock of corporate LCY bonds slightly increased, while the stock of SGS bonds declined. Only short-term MAS bills trended upward.

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

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2015		Q2 2016		Q3 2016		Q3 2015		Q3 2016	
	SGD	USD	SGD	USD	SGD	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**318**	**223**	**314**	**233**	**315**	**231**	**(3.9)**	**(1.1)**	**0.4**	**(0.7)**
Government	188	132	182	135	183	134	(5.0)	(3.6)	0.6	(2.6)
SGS Bills and Bonds	103	72	109	81	107	78	(2.3)	1.7	(2.0)	4.0
MAS Bills	85	60	73	54	76	56	(8.0)	(9.4)	4.6	(10.5)
Corporate	130	91	133	98	133	97	(2.2)	2.9	0.1	2.0

( ) = negative, 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 local currency–USD rates are used.
4. Growth rates are calculated from local currency base and do not include currency effects.
Sources: Bloomberg LP, Monetary Authority of Singapore, and Singapore Government Securities.

Government Bonds. LCY government bonds outstanding amounted to SGD183 billion at the end of September, increasing 0.6% q-o-q and declining 2.6% y-o-y. The q-o-q increase was mainly due to the 4.6% q-o-q rise in the outstanding stock of MAS bills to SGD76 billion. However, in y-o-y terms, the stock of MAS bills declined 10.5% from SGD85 billion as of September 2015. New issuance of MAS bills amounted to SGD79.2 billion in Q3 2016, reflecting a rise of 13.6% q-o-q but a drop of 3.8% y-o-y.

The outstanding stock of SGS bills and bonds decreased 2.0% q-o-q, largely due to the redemption of SGD7.7 billion worth of SGS bonds in Q3 2016, exceeding the SGD5.5 billion of SGS bonds issued in the same quarter.

Corporate Bonds. The outstanding stock of LCY corporate bonds amounted to SGD133 billion at the end of September, up 0.1% q-o-q and 2.0% y-o-y.

In Q3 2016, the top 30 largest LCY corporate bond issuers accounted for a combined SGD68.7 billion worth of notes, or a 51.8% share of the total corporate bond stock **(Table 2)**. Singapore's Housing and Development Board remained atop the list with SGD21.9 billion worth of outstanding bonds. United Overseas Bank was a distant second with SGD4.7 billion. Temasek Financial I, a wholly owned financing subsidiary of state-owned investment company Temasek Holdings, had total bonds outstanding of SGD3.6 billion.

Among the 30 largest corporate bond issuers, 4 were state-owned agencies, while the rest comprised a diverse set of issuers from the banking, consumer goods, education, finance, real estate, transportation, and utilities sectors.

Affecting the LCY corporate bond market is the weak global demand that led to the slump in commodity prices beginning in 2014, with the effects now being felt across Singapore's oil and gas services industry. In November 2015, Singapore-listed and Indonesia-based firm PT Trikomsel Oke missed its coupon payments, which was followed by Singapore-listed and Hong Kong, China-based firm Pacific Andes Resources Development defaulting on its bond obligations before filing for bankruptcy in July, and Singapore-based firm Swiber Holdings defaulting on its coupon payments in August before being placed under judicial management. More Singapore-based and -listed firms in maritime operations and oil and gas services—such as AusGroup, Rickmers Maritime, Macro Polo Marine, ASL Marine Holdings, and Swissco—are considering debt restructuring proposals with their bondholders. Even companies with stronger financials, such as Dyna-Mac Holdings and Cordlife Group, are conducting early note redemptions. Issuers in the high-risk, unrated LCY bond market in Singapore have been placed in the spotlight amid a prolonged slump in oil and gas prices that is expected to add to the challenge faced by commodities-related industries.

Through the end of September, a total of 12 companies had tapped the bond market for funding needs with new issuances of LCY corporate debt in Q3 2016 amounting to SGD4.1 billion, reflecting a rise of 12.6% y-o-y 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	21.9	16.1	Yes	No	Real Estate
2.	United Overseas Bank	4.7	3.4	No	Yes	Banking
3.	Temasek Financial I	3.6	2.6	Yes	No	Finance
4.	Land Transport Authority	3.5	2.5	Yes	No	Transportation
5.	Capitaland	3.0	2.2	No	Yes	Real Estate
6.	FCL Treasury	2.4	1.7	No	No	Finance
7.	DBS Bank	2.2	1.6	No	Yes	Banking
8.	SP Powerassets	1.9	1.4	No	No	Utilities
9.	Olam International	1.7	1.3	No	Yes	Consumer Goods
10.	Keppel Corporation	1.7	1.2	No	Yes	Diversified
11.	Public Utilities Board	1.7	1.2	Yes	No	Utilities
12.	City Developments Limited	1.6	1.2	No	Yes	Real Estate
13.	DBS Group Holdings	1.5	1.1	No	Yes	Banking
14.	Oversea-Chinese Banking Corporation	1.5	1.1	No	Yes	Banking
15.	Hyflux	1.5	1.1	No	Yes	Utilities
16.	Neptune Orient Lines	1.3	0.9	No	Yes	Transportation
17.	Capitaland Treasury	1.2	0.8	No	No	Finance
18.	Mapletree Treasury Services	1.1	0.8	No	No	Finance
19.	CMT MTN	1.1	0.8	No	No	Finance
20.	Capitamalls Asia Treasury	1.0	0.7	No	No	Finance
21.	National University of Singapore	1.0	0.7	No	No	Education
22.	Singapore Airlines	1.0	0.7	No	Yes	Transportation
23.	Ascendas REIT	1.0	0.7	No	Yes	Finance
24.	Sembcorp Financial Services	1.0	0.7	No	No	Engineering
25.	GLL IHT	0.9	0.7	No	No	Real Estate
26.	Singtel Group Treasury	0.9	0.7	No	No	Finance
27.	Overseas Union Enterprise	0.8	0.6	No	Yes	Real Estate
28.	Sembcorp Industries	0.8	0.6	No	Yes	Shipbuilding
29.	Global Logistic Properties	0.8	0.6	No	Yes	Real Estate
30.	SMRT Capital	0.8	0.6	No	No	Transportation
Total Top 30 LCY Corporate Issuers		**68.7**	**50.4**			
Total LCY Corporate Bonds		**132.7**	**97.3**			
Top 30 as % of Total LCY Corporate Bonds		**51.8%**	**51.8%**			

LCY = local currency, SGD = Singapore dollar, USD = United States dollar.
Notes:
1. Data as of end-September 2016.
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 Q3 2016

Corporate Issuers	Coupon Rate (%)	Issued Amount (SGD million)
Housing and Development Board		
5-year bond	1.47	700
7-year bond	1.91	700
10-year bond	2.04	600
15-year bond	2.55	700
Suntec REIT		
5-year bond	1.75	300
UOL Treasury Services		
4-year bond	2.50	240
Mapletree Commercial Trust		
10-year bond	3.11	175
CMT MTN		
15-year bond	3.35	150

Q3 = third quarter, REIT = Real Estate Investment Trust, SGD = Singapore dollar.
Source: Bloomberg LP.

a decline of 10.1% q-o-q. The largest issuance in Q3 2016 was from the Housing and Development Board's multitranche bond worth SGD2.7 billion. **Table 3** presents the notable corporate bond issues in Q3 2016.

Policy, Institutional, and Regulatory Developments

Singapore's Ministry of Law Accepts Recommendations to Strengthen Debt Restructuring Framework

On 20 July, Singapore's Ministry of Law accepted the recommendations of the Committee to Strengthen Singapore as an International Centre for Debt Restructuring. The 17 recommendations cover enhancing the legal framework for restructurings, creating a restructuring-friendly ecosystem, and addressing the perception gap in Singapore's restructuring capabilities. Ultimately, the Ministry of Law envisions Singapore to be a one-stop location combining efficiency, expertise, and a strong legal framework for global companies seeking debt restructuring.

Singapore Exchange Obtains Approval to List Companies with Dual-Class Shares

In its annual report published 29 August, the Listings Advisory Committee of Singapore Exchange (SGX), an independent council of industry leaders and professionals, authorized SGX to list companies with dual-class shares if they meet required criteria subject to the committee's review and approval. Unless provided with a compelling reason, the default rule of one-share, one-vote remains for companies seeking to list with SGX. This aims to make SGX more attractive to high-quality companies, who may hold a dual-class share corporate structure, to launch their initial public offerings on SGX.

Singapore Exchange Signs Memorandum of Understanding with Industrial and Commercial Bank of China

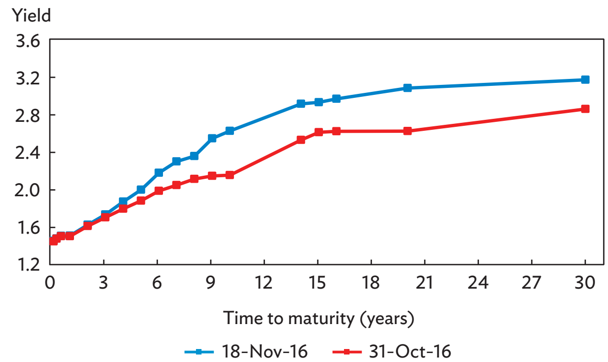
SGX and the Industrial and Commercial Bank of China Limited, the sole renminbi-clearing bank in Singapore, signed a Memorandum of Understanding on 19 September to enhance capital market links between Singapore and the People's Republic of China. The memorandum aims to support companies from the People's Republic of China in tapping Singapore's capital markets for equity and bond financing needs, particularly real investment trusts and offshore renminbi-denominated bonds. The memorandum also aims to realize secondary market activities of renminbi-denominated contracts listed on SGX.

Thailand

Yield Movements

Between 31 October and 18 November, Thailand's local currency (LCY) government bond yields rose for all tenors in the aftermath of the United States (US) presidential election, which affected global financial markets **(Figure 1)**. Yields for bonds with maturities of 1 month to 1 year rose an average of 1 basis point (bp). Yields for tenors of between 2 years and 9 years rose an average of 16 bps, while yields for bonds with 10-year to 30-year maturities rose an average of 38 bps. The 2-year versus 10-year yield spread widened to 99 bps on 18 November from 54 bps on 31 October.

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



Source: Based on data from.

The economic environment in Thailand was generally good in the third quarter (Q3) of 2016 as the economy expanded amid continued inflation, improved private consumption and investment, and a rise in exports. However, recent events in October and November largely contrasted with the favorable environment in Q3 2016. The passing away of Thailand's King on 13 October, a widely popular and unifying figure in Thailand's political landscape, caused jitters in domestic equity, bond, and currency markets. This was followed by the impact of the US presidential election outcome on 8 November and the US Federal Reserve chair signaling to the US Congress on 17 November that a December rate hike was likely given continued improvement in key indicators of US economic activity, including a tightening labor market amid near full employment. The cumulative impact of these events caused yields to spike across the curve, with yields at the longer end rising more than those at the shorter end.

The Bank of Thailand's Monetary Policy Committee decided to maintain the policy rate at 1.50% for the 12th consecutive time on 9 November. The central bank assessed that Thailand's economy will gradually recover despite the downside risks on both the domestic and global fronts such as the slowdown in tourist arrivals from the People's Republic of China and global political uncertainty, especially in the US and the European Union. The committee decided to preserve policy space to counter uncertainty over the direction of monetary policies and political changes in advanced economies that could lead to exchange rate volatility and sudden capital flows in either direction. Inflation is expected to return to within the central bank's target band in the medium term, while monetary conditions remain accommodative to support the gradual economic recovery.

Thailand's consumer price inflation has been positive for 7 consecutive months, increasing 0.3% year-on-year (y-o-y) in October after rising 0.4% y-o-y in September. The gains were led by an increase in prices of fuel and transportation costs, which rose 0.3% y-o-y in October after declining 0.9% y-o-y in September. The excise tax on cigarettes, which took effect in February, also contributed to inflation with tobacco and alcoholic beverages growing 13.0% y-o-y in October, at par with September. Inflation is expected to gradually rise, but the timing will depend on global oil price movements.

Thailand's economy improved in the second quarter of 2016, with gross domestic product (GDP) growth rising to 3.5% y-o-y, up from 3.2% y-o-y in the first quarter of 2016. The expansion was mainly due to improving private consumption as well as growth in government spending, gross fixed capital formation, tourism, and manufacturing. In September, merchandise exports rose 3.5% y-o-y due to improving demand for electronic products and appliances among Thailand's trading partners. According to preliminary report from the Bank of Thailand, the economy also expanded in Q3 2016 supported by growth in public spending and private consumption. Overall,

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

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2015		Q2 2016		Q3 2016		Q3 2015		Q3 2016	
	THB	USD	THB	USD	THB	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**9,769**	**269**	**10,372**	**295**	**10,593**	**306**	**1.7**	**6.5**	**2.1**	**8.4**
Government	7,312	201	7,720	220	7,819	226	0.2	5.7	1.3	6.9
Government Bonds and Treasury Bills	3,698	102	3,884	111	4,035	117	2.7	7.1	3.9	9.1
Central Bank Bonds	2,862	79	3,030	86	2,961	86	(1.6)	6.0	(2.3)	3.5
State-Owned Enterprise and Other Bonds	752	21	807	23	822	24	(4.5)	(1.4)	1.9	9.4
Corporate	2,456	68	2,652	75	2,775	80	6.5	8.9	4.6	13.0

( ) = negative, q-o-q = quarter-on-quarter, Q2 = second quarter, Q3 = 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 end-of-period local currency–USD rates are used.
3. Growth rates are calculated from an LCY base and do not include currency effects.
4. ADB calculations used to estimate data for Q3 2016.
Sources: Bank of Thailand and Bloomberg LP.

Thailand's economy is poised to surpass the 2.8% GDP growth attained in 2015 and is projected to grow 3.2% in 2016 and 2017.

Size and Composition

Thailand's LCY bond market expanded 2.1% quarter-on-quarter (q-o-q) and 8.4% y-o-y to reach THB10,593 billion (USD304 billion) **(Table 1)**.

Government Bonds. Government debt securities rose 1.3% q-o-q in Q3 2016 to THB7,819 billion at the end of September from THB7,720 billion at the end of June. The rise came mainly from a 3.9% q-o-q increase in government bonds and Treasury bills, and a 1.9% q-o-q increase in state-owned enterprise and other bonds. Central bank bonds decreased 2.3% q-o-q, but rose 3.5% y-o-y. The outstanding stock of government issued debt securities comprised government bonds (THB4,035 billion), central bank bonds (THB2,961 billion), and state-owned enterprise and other bonds (THB822 billion).

Newly issued government bonds in Q3 2016 amounts to THB2,219 billion. Most of the new issuance comprised central bank bonds (THB1,899 billion), which increased 29.2% from Q3 2015. New issuance of central government bonds (THB280 billion) declined 18.4% q-o-q, but rose 11.4% y-o-y.

Corporate Bonds. Total LCY corporate bonds outstanding rose to THB2,775 billion at the end of September from THB2,652 billion at the end of June. LCY corporate bonds outstanding in Q3 2016 grew 4.6% q-o-q and 13.0% y-o-y. New issuance of LCY corporate bonds amounted to THB470 billion in Q3 2016.

The top 30 LCY corporate bond issuers in Thailand had combined outstanding bonds amounting to THB1,536.5 billion at the end of September, accounting for 55.4% of the total LCY corporate bond market **(Table 2)**. CP All remained the largest corporate issuer in Thailand in Q3 2016 with THB192 billion of LCY bonds outstanding. Siam Cement was second with THB166.5 billion. PTT remained in the third spot with THB145.4 billion of LCY bonds outstanding.

Table 3 lists the notable corporate bond issuances in Q3 2016. Berli Jucker, a large Thai consumer products export and import firm, led all 70 companies that issued new bonds in Q3 2016 with THB54 billion worth of bonds issued in multiple tranches. CPF Thailand, a world leader in pet foods, was second with a multitranche debt issuance worth THB13 billion. The third largest was CP All, a major convenience store operator, with a multitranche bond issuance worth almost THB12 billion.

Investor Profile

In Q3 2016, LCY government bonds in Thailand were still mostly held by contractual savings funds, which accounted for a 28.6% share of the total, but this share declined from 29.2% in the previous year **(Figure 2)**. While the second-largest group of holders were insurance companies, whose share increased from 20.3% in Q3 2015 to 26.0% in Q3 2016. 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	192.0	5.6	No	Yes	Commerce
2.	Siam Cement	166.5	4.8	Yes	Yes	Construction Materials
3.	PTT	145.4	4.2	Yes	Yes	Energy and Utilities
4.	Charoen Pokphand Foods	80.0	2.3	No	Yes	Food and Beverage
5.	Bank of Ayudhya	77.3	2.2	No	Yes	Banking
6.	Thai Airways International	54.3	1.6	Yes	Yes	Transportation and Logistics
7.	Berli Jucker	54.0	1.6	No	Yes	Food and Beverage
8.	Kasikorn Bank	50.0	1.4	No	Yes	Banking
9.	Indorama Ventures	45.3	1.3	No	Yes	Petrochemicals and Chemicals
10.	Toyota Leasing Thailand	42.1	1.2	No	No	Finance and Securities
11.	Tisco Bank	41.5	1.2	No	No	Banking
12.	The Siam Commercial Bank	40.0	1.2	No	Yes	Banking
13.	Mitr Phol Sugar	37.8	1.1	No	No	Food and Beverage
14.	Banpu	37.3	1.1	No	Yes	Energy and Utilities
15.	True Corp	37.2	1.1	No	Yes	Communications
16.	True Move H Universal Communication	34.0	1.0	No	No	Communications
17.	Krungthai Card	33.5	1.0	Yes	Yes	Banking
18.	Thanachart Bank	32.5	0.9	No	No	Banking
19.	PTT Exploration and Production Company	32.1	0.9	Yes	Yes	Energy and Utilities
20.	TPI Polene	32.0	0.9	No	Yes	Property and Construction
21.	Advanced Wireless	31.6	0.9	No	Yes	Communications
22.	CH. Karnchang	30.0	0.9	No	Yes	Property and Construction
23.	CPF Thailand	29.0	0.8	No	Yes	Food and Beverage
24.	Land & Houses	29.0	0.8	No	Yes	Property and Construction
25.	Thai Oil	28.0	0.8	Yes	Yes	Energy and Utilities
26.	Minor International	25.8	0.7	No	Yes	Food and Beverage
27.	TMB Bank	25.4	0.7	No	Yes	Banking
28.	Glow Energy	24.6	0.7	No	Yes	Energy and Utilities
29.	Thai Union Group	24.3	0.7	No	Yes	Food and Beverage
30.	ICBC Thai Leasing	24.1	0.7	No	No	Finance and Securities
Total Top 30 LCY Corporate Issuers		**1,536.5**	**44.4**			
Total LCY Corporate Bonds		**2,774.7**	**80.2**			
Top 30 as % of Total LCY Corporate Bonds		**55.4%**	**55.4%**			

LCY = local currency, THB = Thai baht, USD = United States dollar.
Notes:
1. Data as of end-September 2016.
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 Q3 2016

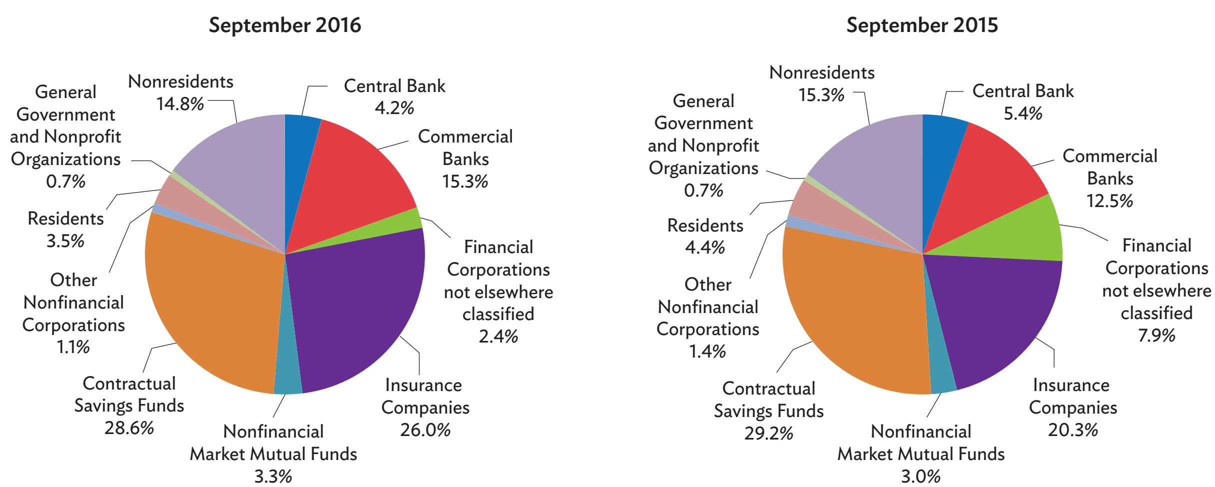
Corporate Issuers	Coupon Rate (%)	Issued Amount (THB million)
Berli Jucker		
3-year bond	2.34	22,000
5-year bond	2.69	9,000
7-year bond	3.07	3,000
10-year bond	3.80	20,000
CPF Thailand		
4-year bond	2.51	5,000
7-year bond	3.09	3,300
10-year bond	3.46	1,400
12-year bond	3.65	1,100
15-year bond	3.95	2,200
CP All		
3-year bond	2.49	5,900
7-year bond	3.25	500
10-year bond	3.68	748
12-year bond	4.00	4,850
Bank of Ayudhya		
8.4-year bond	3.50	10,000
Thai Union Group		
3-year bond	2.03	6,000
5-year bond	2.32	2,000
7-year bond	2.79	2,000

Q3 = third quarter, THB = Thai baht.
Source: Bloomberg LP.

share also increased from 12.5% in Q3 2015 to 15.3% in Q3 2016, while the share of foreign investors fell from 15.3% to 14.8%.

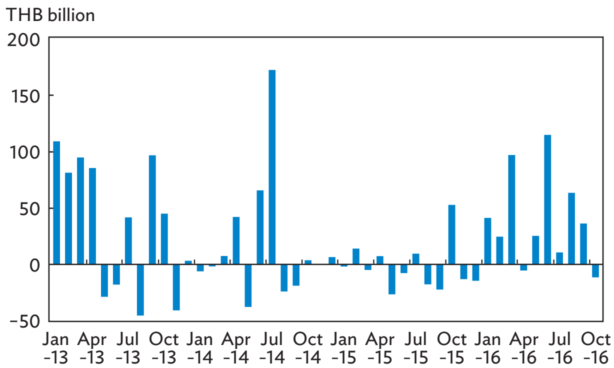
In January–October, net foreign flows into the LCY bond market amounted to THB392.0 billion, up from only THB3.2 billion for the same period in 2015. Foreign flows were net positive in every month during the review period except for April and October. The substantial net inflows reflect positive investor sentiments on improving fundamentals for Thailand's economy even amid anticipation of a US interest rate hike throughout the year. Meanwhile, the British referendum to leave the European in June acted as a tailwind, further increasing fund flows into Thailand as global financial markets reacted to the vote with shock. However, domestic political uncertainty in Thailand on two occasions also made investors cautious: Thailand's referendum on a new constitution in August and the passing away of the King in October. Since then, the government's securing a majority vote for approval of the military-backed constitution and the announcement on the transfer of power to the King's successor on 1 December have calmed jittery sentiments among investors. Net aggregate fund inflows totaled THB109 billion in Q3 2016. The net decline in October

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: Foreign Investor Net Trading of Local Currency Bonds in Thailand



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

of THB11 billion mainly comprised large net outflows in mid-October following the King's death as well as reports of improving US economic activity **(Figure 3)**. As of 18 November, net outflows for the month amounted to THB50 billion, reflecting investor sentiments following the result of the US presidential election.

Policy, Institutional, and Regulatory Developments

Stock Exchange of Thailand Plans New Mutual Fund Service Platform in Early 2017

The Stock Exchange of Thailand on 26 September announced its plan to launch a new mutual fund service platform in the first quarter of 2017 to help broaden and make efficient the channeling and access of mutual funds by the public. An industry-wide test run is expected before the end of the year. The announcement came after memorandums of understanding were signed with about 40 mutual fund firms on 15 March. Upon launch, the many stakeholders—which include asset management firms, securities companies, unit investment trusts, life insurance firms, and commercial banks—have all committed to use the new platform to service customer needs in addition to the continued use of traditional person-to-person channels. According to the Securities and Exchange Commission, the plan is an important milestone in establishing Thailand's national infrastructure investment platform, making transactions easier for stakeholders and their customers.

Viet Nam

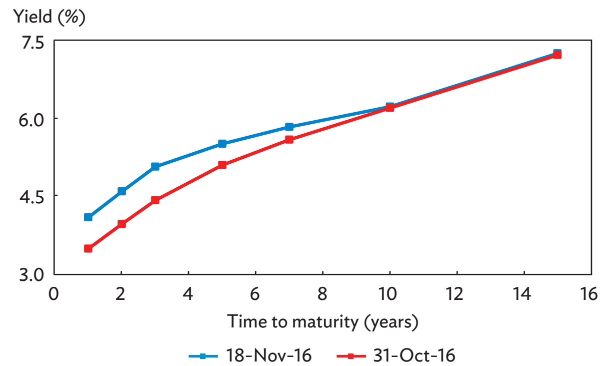
Yield Movements

Between 31 October and 18 November, local currency (LCY) government bond yields in Viet Nam rose for all tenors **(Figure 1)**. Yields gained the most at the shorter end of the curve, rising an average of 62 basis points (bps) for the 1-year through 3-year maturities. Yields climbed the least at the longer end and were up by an average of only 3 bps for the 10-year through 15-year tenors. An overall flattening of the yield curve resulted, with the spread between the 2-year and 10-year maturities narrowing from 223 bps on 31 October to 163 bps on 18 November.

Government bond yields in Viet Nam initially declined in October due largely to ample liquidity in the banking system as the State Bank of Vietnam actively purchased United States (US) dollars to bolster its foreign reserves. Yields then rose following the release in October of minutes from the September meeting of the US Federal Open Market Committee, which indicated the increased likelihood of a rate hike by the Federal Reserve in December. In November, yields were driven higher by uncertainty relating to the economic policies of the incoming US administration.

Real gross domestic product growth reached 5.9% year-on-year (y-o-y) in the first 3 quarters of the year, up from 5.5% y-o-y in the first half of the year, but down from 6.5% y-o-y in the first 3 quarters of 2015. Industry and construction output grew 7.5% y-o-y in January–September and services output rose 6.7% y-o-y, while the agriculture sector grew a marginal 0.7% y-o-y.

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



Source: Based on data from Bloomberg LP.

Size and Composition

Viet Nam's LCY bond market expanded to VND1,038.2 trillion (USD47 billion) at the end of September, remaining the smallest in terms of size in emerging East Asia **(Table 1)**. Growth was positive on both a quarter-on-quarter (q-o-q) and y-o-y basis in the third quarter of 2016 (Q3 2016). Much of the growth was contributed by government bonds, which account for 96.1% of the aggregate LCY bond market.

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

	Outstanding Amount (billion)						Growth Rate (%)			
	Q3 2015		Q2 2016		Q3 2016		Q3 2015		Q3 2016	
	VND	USD	VND	USD	VND	USD	q-o-q	y-o-y	q-o-q	y-o-y
Total	**848,760**	**38**	**969,903**	**43**	**1,038,164**	**47**	**(11.9)**	**(13.3)**	**7.0**	**22.3**
Government	821,988	37	931,111	42	998,070	45	(12.5)	(14.6)	7.2	21.4
Treasury Bonds	534,576	24	717,149	32	718,287	32	(2.1)	1.1	0.2	34.4
Central Bank Bonds	90,279	4	9,999	0.4	69,999	3	(54.9)	(59.5)	600.0	(22.5)
State-Owned Enterprise Bonds	197,133	9	203,963	9	209,784	9	2.4	(6.6)	2.9	6.4
Corporate	26,772	1	38,792	2	40,094	2	9.4	67.0	3.4	49.8

( ) = negative, 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 local currency–USD rates are used.
2. Growth rates are calculated from local currency base and do not include currency effects.
Sources: Bloomberg LP and Vietnam Bond Market Association.

Government Bonds. The outstanding stock of LCY government bonds climbed to VND998.1 trillion at the end of September, up 7.2% q-o-q and 21.4% y-o-y. Growth largely stemmed from increases in the stock of State Bank of Vietnam bills, which soared to VND70.0 trillion at the end of September from only VND10.0 trillion at the end of June. Contributing to the overall growth in government bonds were state-owned enterprise bonds and other bonds, as well as (to a lesser extent) Treasury bonds.

In Q3 2016, government bond issuance more than doubled to reach VND406.6 trillion due largely to an uptick in central bank issuance. In addition, a VND500 billion municipal bond was issued during the quarter by Ba Ria Vung Tau province to fund various infrastructure projects.

Corporate Bonds. The outstanding stock of corporate bonds climbed to VND40.1 trillion at the end of September, up by 3.4% q-o-q and 49.8 y-o-y in Q3 2016. Viet Nam's corporate bond market accounts for only 3.9% of the aggregate LCY bond market stock and comprises issues from 21 corporate entities **(Table 2)**. The composition of the top three corporate issuers remained the same as in the previous quarter. Masan Consumer Holdings was the largest corporate bond issuer with outstanding bonds valued at VND11.1 trillion, representing a 27.7% share of the entire corporate bond segment. Real estate firm Vingroup was in the second spot with bonds outstanding of VND8.0 trillion, followed by Asia Commercial Joint Stock with VND4.6 trillion.

Five corporate firms tapped the bond market in Viet Nam for their capital requirements in Q3 2016. Real estate firm Hoangquan had the largest new debt issue, raising VND500 billion from the sale of 1-year fixed rate bond with a coupon of 6.0% **(Table 3)**. It was followed by Khang Dien House Trading and Investment, which issued VND452 billion of 4-year bonds. In terms of maturity, the longest new debt issues were 5-year bonds from An Phat Plastic and Green Environment and Son Ha International.

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	0.50	No	No	Diversified Operations
2.	Vingroup	8,000	0.36	No	Yes	Real Estate
3.	Asia Commercial Joint Stock	4,600	0.21	No	Yes	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.	Ho Chi Minh City Infrastructure	2,102	0.09	No	Yes	Infrastructure
7.	DIC	1,000	0.04	Yes	No	Chemicals
8.	Ocean Group	980	0.04	No	Yes	Consulting Services
9.	Saigon-Hanoi Securities	950	0.04	No	Yes	Finance
10.	Hoangquan	500	0.02	No	Yes	Real Estate
11.	Saigon Securities	500	0.02	No	Yes	Finance
12.	Tasco	500	0.02	No	Yes	Engineering and Construction
13.	Vietinbank Securities	500	0.02	Yes	Yes	Finance
14.	Khang Dien House Trading and Investment	452	0.02	No	Yes	Building and Construction
15.	An Phat Plastic & Green Environment	450	0.02	No	Yes	Industrial
16.	Sotrans	400	0.02	No	No	Logistics
17.	Vietnam Investment Construction and Trading	350	0.02	No	Yes	Building and Construction
18.	Hung Vuong	300	0.01	No	Yes	Food
19.	Ha Do	200	0.01	No	Yes	Construction
20.	Son Ha International	110	0.005	No	Yes	Building and Construction
21.	Dongnai Plastic	100	0.004	No	Yes	Industrial
Total LCY Corporate Issuers		**40,094**	**1.80**			

LCY = local currency, USD = United States dollar, VND = Vietnamese dong.
Notes:
1. Data as of end-September 2016.
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.

Table 3: Notable Local Currency Corporate Bond Issuance in Q3 2016

Corporate Issuers	Coupon Rate (%)	Issued Amount (VND billion)
Hoangquan		
1-year bond	6.00	500
Khang Dien House Trading and Investment		
4-year bond	9.50	452
Saigon Securities		
2-year bond	7.00	200
An Phat Plastic & Green Environment		
5-year bond	7.00	150
Son Ha International		
5-year bond	9.80	110

Q3 = second quarter, VND = Vietnamese dong.
Source: Bloomberg LP.

Policy, Institutional, and Regulatory Developments

Hanoi Stock Exchange to Test Run Derivatives Product in November and December

The Hanoi Stock Exchange is continuing with preparations to launch a derivatives market. The exchange recently announced that regulations for future contracts on equity indices and government bonds will be implemented in November. The exchange will also test the trading system for the derivative products in November and December.

Asia Bond Monitor
November 2016

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.

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ASIAN DEVELOPMENT BANK
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
www.adb.org