


# ASIA BOND MONITOR

## JUNE 2018

ASIAN DEVELOPMENT BANK

ADB

The Asia Bond Monitor (ABM) is part of the Asian Bond Markets Initiative, an ASEAN+3 initiative supported by the Asian Development Bank. This report is part of the implementation of a technical assistance project funded by the Investment Climate Facilitation Fund of the Government of Japan under the Regional Cooperation and Integration Financing Partnership Facility.

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Printed in the Philippines.

ISBN 978-92-9261-188-0 (print), 978-92-9261-189-7 (electronic)
ISSN 2219-1518 (print), 2219-1526 (electronic)
Publication Stock No. TCS189395-2
DOI: http://dx.doi.org/10.22617/TCS189395-2



Notes:
ADB recognizes "China" as the People's Republic of China; "Hong Kong" and "Hongkong" as Hong Kong, China; "Korea" as the Republic of Korea; "Siam" as Thailand; "Vietnam" as Viet Nam; "Hanoi" as Ha Noi; and "Saigon" as Ho Chi Minh City.
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# Highlights

## Key Trends

- Yields in emerging East Asia trended upward between 1 March and 31 May amid global economic expansion and tightening United States (US) monetary policy. The main exception was the People's Republic of China (PRC), where 2-year and 10-year yields fell after the People's Bank of China reduced the reserve requirement ratio for banks.
- The global economic outlook remains positive, with solid growth in both advanced and developing economies.
- Given the improved outlook of the US economy and the Federal Reserve's ongoing monetary policy normalization, the US dollar continues to strengthen, leading to the depreciation of all emerging East Asian currencies, except the Korean won, during the review period.
- In emerging East Asia, credit default swap (CDS) spreads have risen in most markets, partly due to the depreciation of currencies across the region. An exception is the Republic of Korea, where the CDS spread fell due to easing geopolitical tensions.
- Equity markets in emerging East Asia also retreated during the review period due to weakness of domestic currencies.
- Foreign holdings of local currency government bonds in emerging East Asia slightly fell in the first quarter of 2018 in all emerging East Asian markets for which data are available, except the PRC.
- Emerging East Asia's local currency bond market grew by 1.1% quarter-on-quarter in the first quarter of 2018 to reach USD12.8 trillion at the end of March. The PRC remains the key driver of the region's bond market growth.

## Risks to the Bond Market

- The ongoing US monetary policy normalization could pose a risk to the region's financial stability by leading to tighter monetary conditions and increased financial stress. Indonesia raised its policy rates twice in May, and India  followed suit in early June.
- The buildup of corporate and household debt in some Asian economies during the low-interest-rate era may exacerbate this risk.
- Another risk is currency turmoil in emerging markets, especially evident in Argentina and (to a lesser degree) Turkey. However, the region is well equipped to weather the volatility due to strong fundamentals.
- An escalation of trade tensions between the US and the PRC could adversely affect the global economic outlook and financial stability.

## Theme Chapter: The Role of Greenness Indicators in Green Bond Market Development

- The theme chapter aims to understand the pricing mechanism in the green bond market. It empirically investigates the existence of a green bond premium, in the green bond market. The evidence indicates that overall there is no significant premium on green bonds. However, green bonds that have been reviewed by an external reviewer and/or received a Climate Bonds Initiative certification are traded at a lower green discount.
- The theme chapter's findings point to the potential benefits of having a widely recognized greenness measure in the green bond market. Such a measure could not only benefit investors by lowering information costs, but also help issuers of green bonds to broaden their investor base. Therefore, commonly acknowledged definitions and standards of greenness can foster development of the green bond market.

# Executive Summary

## Emerging East Asia's Local Currency Bond Yields Rise

Emerging East Asia's local currency (LCY) bond yields rose in all markets, except the People's Republic of China (PRC) and the Republic of Korea, between 1 March and 31 May amid continued global economic growth and United States (US) monetary policy tightening.[1]

The US has seen its interest rates rise as the Federal Reserve pursues monetary policy normalization and the domestic economic outlook brightens. In March, the Federal Reserve upgraded its previous growth forecast made in December, with gross domestic product (GDP) expected to grow 2.7% and 2.4% in 2018 and 2019, respectively, compared with 2.5% and 2.1%. As a result, the Federal Reserve increased the federal funds target rate range by 25 basis points (bps) in its 20 March meeting. Minutes from the meeting also raised the prospect of accelerated rate increases given the strength of the US economy.

The growth outlook is also positive in the euro area. In March, the European Central Bank upgraded the euro area's GDP growth for 2017 and 2018 to 2.5% and 2.4%, respectively, from 2.4% and 2.3% in December. However, the outlook in the euro area has been marred by rising political uncertainty in Italy. In Japan, the economic outlook was also recently upgraded.

The political uncertainties in the euro area have led to widening credit default swap spreads and rising interest rates in a number of euro area economies. In addition, strong growth in the US has led to the appreciation of the US dollar and a weakening of emerging East Asian currencies. The negative sentiment surrounding emerging East Asian currencies has resulted in widening credit default swap spreads across the region.

This issue of the *Asia Bond Monitor* includes two special discussion boxes. Box 1 discusses the financial market turbulence in Argentina and Turkey, and the potential impacts in emerging Asia.

Box 2 is a primer on green bonds. The box discusses the purpose and uses of green bonds, and provides statistics on issuers by type and economy.

As emerging East Asia benefits from the current global economic expansion, risks still loom over the horizon. These include (i) financial stresses resulting from US policy rate hikes, (ii) a high level of corporate and household debt in some economies, (iii) rising emerging market currency turmoil as evidenced by Argentina and Turkey, and (iv) possible escalation of trade tensions between the PRC and the US.

## Emerging East Asia's Local Currency Bond Market Posts Minimal Growth in the First Quarter of 2018

Emerging East Asia's LCY bond market continued to grow in the first quarter (Q1) of 2018, albeit at a pace of only 1.1% quarter-on-quarter (q-o-q), to reach USD12.8 trillion at the end of March. All markets in the region posted positive q-o-q growth rates in Q1 2018 except Hong Kong, China. Furthermore, the region's growth decelerated from 3.1% q-o-q in the fourth quarter of 2017 as bond issuance was lower in Q1 2018 compared with the previous quarter.

The PRC's LCY bond market, which remains the largest in the region with a 71.5% share of total bonds outstanding, drove the slower regional growth as its bond market expanded only 0.7% q-o-q in Q1 2018 following robust growth of 4.0% q-o-q in the final quarter of 2017. The PRC's slow growth was the result of declining issuance in its government bond market, particularly the issuance of local government bonds, as its debt-to-swap program nears completion.

The region's LCY government bond market expanded 1.3% q-o-q to USD8.5 trillion, comprising 66.9% of the region's aggregate bonds outstanding. The corporate bond market was barely changed, inching up 0.5% q-o-q to USD4.2 trillion.

In line with the minimal growth in emerging East Asia's LCY bond market and faster growth in the region's

[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.

aggregate economy, the ratio of LCY bonds outstanding to the region's GDP slipped to 70.1% at the end of March from 70.8% at the end of December. The respective ratios of the region's government bond market and corporate bond market fell to 46.9% and 23.2% from 47.1% and 23.7%.

Total LCY bond issuance in emerging East Asia fell for the second consecutive quarter in Q1 2018, dipping 10.7% q-o-q to USD1.0 trillion. The continued decline was driven by the drop in issuance in both the government and corporate segments of the PRC's LCY bond market, which comprises nearly half the regional total. All other markets in the region, excluding the Philippines, posted higher issuance volume in Q1 2018 compared with the previous quarter.

## Net Foreign Investment Inflows Slow in the First Quarter of 2018, Turn Negative in April

The first 4 months of 2018 saw foreign investors gradually reducing their exposure to the region's LCY bond market as a result of higher US interest rates (driven by the Federal Reserve's ongoing monetary policy normalization) and the improved global economic growth.

The shares of foreign investor holdings in most markets in the region slipped in Q1 2018. Indonesia saw the region's largest decline, reflecting concerns over its vulnerability to outflows as almost 40% of its LCY government bonds are held by foreign investors. Indonesia was followed by Malaysia and Thailand, which both saw outflows in reaction to rising US interest rates. The PRC continued to have a small portion of its LCY government bond market held by foreign investors, but this share is on an upward trend.

In Q1 2018, net foreign investment inflows were registered in all market, largely due to the strong inflows in January. In succeeding months, particularly in April when the minutes of the US Federal Reserve's March meeting were released signaling the possibility of accelerated hikes, most markets in the region recorded net bond outflows.

## Local Currency Bond Yields Rise in Emerging East Asia

Government bond yield curves shifted upward for nearly all emerging East Asian markets due to continued policy rate hikes in the US. Some markets in emerging East Asia, such as Indonesia and the Philippines, have subsequently tightened monetary policy. On the other hand, the PRC reduced reserve requirement ratios in April.

## Theme Chapter: The Role of Greenness Indicators in Green Bond Market Development

Green bonds are fixed income securities that exclusively fund green projects with environmental or climate-related benefits. They are a hybrid of financial and environmental risk in one financial instrument. Despite rapid expansion in recent years, the green bond market is still immature, with a much smaller amount of bonds outstanding compared with conventional bond markets, as well as a low level of liquidity. The lack of enforcement mechanisms and consistent and widely acknowledged definitions and standards across economies constrain further development of the green bond market.

The theme chapter empirically investigates the green bond premium in green bond markets. It analyzes the liquidity-adjusted yield spread of green bonds over their synthetic conventional counterparts. It further examines possible determinants that drive the green bond premium. This study focuses on proxies for greenness and gauges their impacts on green bond pricing.

Empirical evidence shows that, overall, there is no significant green premium on green bonds compared with their paired conventional bonds. However, green bonds that have an external reviewer are traded at a discount of about 7 bps compared to green bonds without an external reviewer and green bonds that receive a Climate Bonds Initiative certification have a green discount of around 9 bps. In addition, green bonds denominated in euros are generally traded at lower discount.

This study has policy implications for the benefits of a universal greenness measure in the green bond market. Such a measure—whether in the form of certain standards or labels, independent reviewers, or other formats—could help reduce the information asymmetry faced by investors. A commonly recognized greenness measure would not only benefit investors by lowering information costs, but also is expected to lead to more green issuers and a broadening of the investor base. Thus, a well-defined greenness measure can foster the better functioning and further development of the green bond market.

# Introduction: Bond Yields Edged Up in Emerging East Asia

Yields on 2-year and 10-year local currency (LCY) government bonds in emerging East Asia largely trended upward between 1 March and 31 May against a backdrop of global economic expansion and tightening United States (US) monetary policy (**Table A**).[2] However, while yields in advanced economies largely trended upward due to the positive economic growth, there was a small downward tick toward the end of May due to increased demand for safe-haven assets amid political uncertainty in the euro area (**Figure A1**).

Among major advanced economies, the US' growth trajectory remains robust. According to the Federal Reserve forecast released on 21 March, US gross domestic product (GDP) is expected to grow 2.7% and 2.4% in 2018 and 2019, respectively, compared with an earlier forecast made in December 2017 of 2.5% and 2.1%. The forecast for unemployment also improved, with a downward revision from 3.9% in 2018 and 3.9% in 2019 to 3.8% and 3.6%, respectively. The Federal Reserve indicated that all economic indicators remain positive. With a deceleration in consumption, the US GDP growth rate fell to 2.2% year-on-year (y-o-y) in the first quarter (Q1) of 2018 from 2.9% y-o-y in the fourth quarter (Q4) of 2017. The Federal Reserve expects the slowdown in growth to be transient, driven by seasonal factors as well as delays in household tax refunds. The US Consumer Confidence Index rose from 125.6 in April to 128.0 in May,

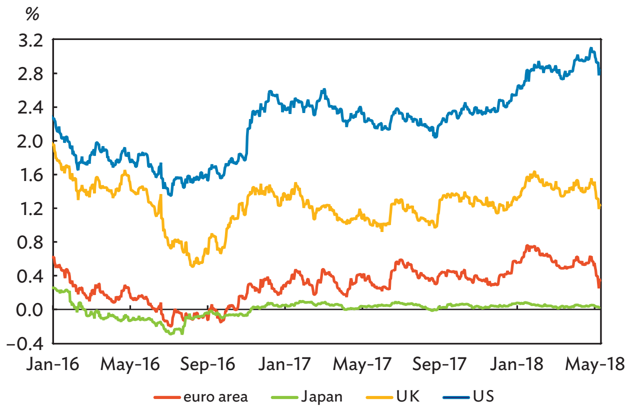
**Table A: Changes in Global Financial Conditions**

| | 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 | 22 | 5 | – | 1.0 | – |
| United Kingdom | (16) | (24) | 8 | 7.0 | (3.5) |
| Japan | 2 | (0.3) | 4 | 0.3 | (2.4) |
| Germany | (10) | (30) | 3 | 3.4 | (4.7) |
| **Emerging East Asia** | | | | | |
| China, People's Rep. of | (24) | (32) | (0.05) | (5.4) | (0.8) |
| Hong Kong, China | 49 | 14 | – | (1.9) | (0.2) |
| Indonesia | 110 | 38 | 34 | (9.4) | (1.1) |
| Korea, Rep. of | (5) | (4) | (7) | (0.2) | 0.8 |
| Malaysia | 29 | 18 | 28 | (6.5) | (1.3) |
| Philippines | 10 | (70) | 21 | (11.4) | (1.1) |
| Singapore | 27 | 22 | – | (2.4) | (1.1) |
| Thailand | 43 | 22 | 5 | (5.6) | (1.7) |
| Viet Nam | 6 | 57 | 25 | (13.0) | (0.3) |
| **Select European Markets** | | | | | |
| Greece | (36) | 13 | 33 | (9.0) | (4.7) |
| Ireland | 5 | (5) | 10 | 7.1 | (4.7) |
| Italy | 133 | 87 | 135 | (3.0) | (4.7) |
| Portugal | 14 | 5 | 44 | 1.7 | (4.7) |
| Spain | 16 | 6 | 33 | (2.8) | (4.7) |

( ) = negative, – = not available, bps = basis points, FX = foreign exchange.
Notes:
1. Data reflect changes between 1 March 2018 and 31 May 2018.
2. A positive (negative) value for the FX rate indicates the appreciation (depreciation) of the local currency against the United States dollar.
Sources: Bloomberg LP and Institute of International Finance.

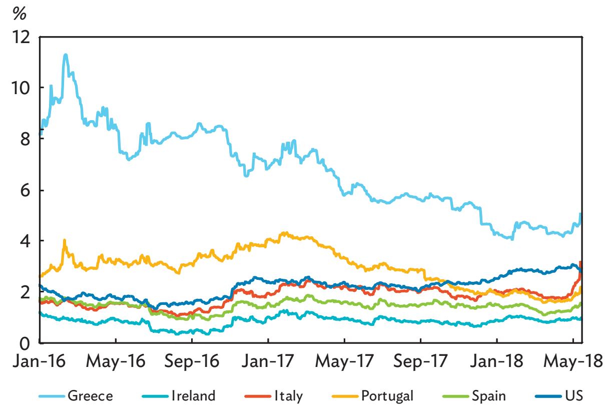
[2] Emerging East Asia comprises the People's Republic of China; Hong Kong, China; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.

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




UK = United Kingdom, US = United States.
Note: Data as of 31 May 2018.
Source: Bloomberg LP.

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



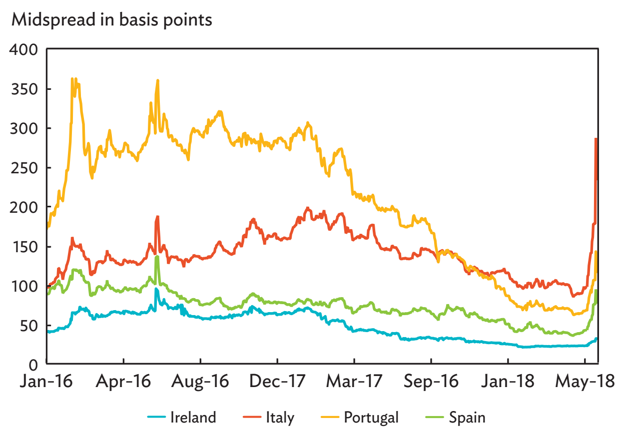

US = United States.
Note: Data as of 31 May 2018.
Source: Bloomberg LP.

which were among the highest levels since 2000. The job market also remains solid, with nonfarm payroll additions rising from a revised 159,000 in April to 223,000 in May, and the unemployment rate falling from 3.9% to 3.8% over the same period.

The economic growth of the euro area and Japan is expected to remain solid. According to a European Central Bank (ECB) estimate and projection released in March 2018, the euro area's GDP growth for 2017 and 2018 was upgraded to 2.5% and 2.4%, respectively, from 2.4% and 2.3%. Despite the positive euro area outlook, yields have been affected by political uncertainties (Table A, **Figure A2**). The current coalition between Italy's Five Star and the League is resulting in uncertainty over the direction of economic policy and has raised the possibility that Italy may seek to exit the euro area. The uncertainty has led to a rise in yields in select European markets, particularly Italy, and a decline in German yields due to demand for safe-haven assets.

This has also led to a rise in credit default swap (CDS) spreads in selected European markets (**Figure B**). Excluding the uncertainty, the euro area's economic situation was improving. Greece is expected to exit its bailout program this year, largely due to improvements in its economy and public finances. Portugal's economic recovery is also robust, according to the International

**Figure B: Credit Default Swap Spreads in Select European Markets** (senior 5-year)




Notes:
1. Based on USD-denominated sovereign bonds.
2. Data as of 31 May 2018.
Source: Bloomberg LP.

Monetary Fund's Sixth Post-Program Monitoring released in February 2018.[3] The Government of Portugal expects to eliminate its budget deficit by 2020. Spain has received a series of credit rating upgrades in Q1 2018.

Like the US, GDP growth in the euro area declined between Q4 2017 and Q1 2018, slowing from 2.8%

[3] International Monetary Fund. 2018. *IMF Staff Country Reports*. https://www.imf.org/en/Publications/CR/Issues/2018/02/22/Portugal-Sixth-Post-Program-Monitoring-Discussions-Press-Release-Staff-Report-45650.

to 2.5%. The ECB indicated that the slower growth is mostly due to temporary factors and the moderation of exceptionally strong growth momentum in previous quarters. Similarly, Japan experienced a slowdown in Q1 2018 due to seasonal factors pertaining to weak private consumption. However, Japan's GDP growth is expected to rebound in subsequent quarters, supported by strong exports and higher production. According to Bank of Japan projections released in April, GDP growth has been revised upward from 1.4% to 1.6% and from 0.7% to 0.8% in fiscal years 2018 and 2019, respectively.

On the back of a strong labor market and an expanding economy, US monetary policy continues to normalize. Consistent with market expectations, the Federal Reserve raised its key policy rate by 25 bps at the 20 March Federal Open Market Committee meeting and left it unchanged at the 1 May meeting. More rate hikes are expected later this year and the Federal Reserve continues to shrink its balance sheet. Meanwhile, the euro area and Japan still do not have a clear schedule for monetary policy normalization. The ECB left policy rates unchanged at both its 8 March and 26 April monetary policy meetings, and announced that it plans to end its current asset purchase program of EUR30 billion per month in September 2018. At the same time, the ECB indicated that its asset purchase program may be extended if conditions warrant. The Bank of Japan maintained its monetary easing program at its monetary policy meeting on 27 April. On 1 June, however, the Bank of Japan unexpectedly reduced its monthly purchase of 5-year to 10-year bonds by JPY20 billion to JPY430 billion.

Amid a benign global economic outlook and US monetary tightening, most emerging East Asian markets witnessed an increase in bond yields between 1 March and 31 May. Indonesia posted the largest gains, with 2-year and 10-year yields rising 110 bps and 38 bps, respectively. The upward trend was partly driven by expectations that Bank Indonesia would raise policy rates to maintain the interest rate differential with the US. Foreign investors sold Indonesian bonds, which led to capital outflows in February and April and contributed to the depreciation of the Indonesian rupiah. At its monetary policy meeting on 16 May, Bank Indonesia raised its policy rate by 25 bps. In anticipation of the Federal Reserve meeting in June, Bank Indonesia called for an off-schedule monetary policy meeting on 30 May, where the central bank raised policy rates by another 25 bps.

In Singapore, yields rose in line with the rise in US Treasury yields. The Monetary Authority of Singapore tightened its monetary policy in April, on the back of improving economic growth and a pick-up in inflation, by slightly increasing the width of the Singapore dollar nominal effective exchange rate policy band. Yields in Hong Kong, China, which largely track US Treasury yields, also rose, particularly for 2-year bonds, which climbed 49 bps. While the US dollar strengthened during the review period, the Hong Kong dollar depreciated. When the Hong Kong dollar reaches the Hong Kong Monetary Authority's (HKMA) weak-side limit, it automatically triggers Hong Kong dollar purchases by the HKMA in order to strengthen the currency and reduce domestic liquidity.[4] In both Thailand and Malaysia, 2-year and 10-year bond yields rose, reflecting the impact of rising US interest rates. Bank Negara Malaysia also raised its policy rate by 25 bps in January. In Viet Nam, 2-year and 10-year yields rose, following the movement in US interest rates.

The major exception to the rising yield trend was the People's Republic of China (PRC), where the 2-year and 10-year yields declined 24 bps and 32 bps, respectively. The lower yields come after the PRC reduced banks' reserve requirement ratio on 17 April. While the freed-up funds must be used to repay borrowing from the central bank or to extend loans to the agricultural sector and small- and medium-sized enterprises, the overall liquidity situation in the market nevertheless improved. The fall in yields also reflected healthy economic fundamentals. The PRC's GDP grew at a robust pace of 6.8% y-o-y in Q1 2018, the same level as in Q4 2017. The PRC's GDP growth is expected to continue to moderate this year. Foreign investment inflows also contributed to the fall in bond yields as the PRC bond market continues to open up. In March, Bloomberg announced plans to include some CNY-denominated government and policy bank bonds in the Bloomberg Barclays Global Aggregate Index starting in April 2019.

Two other exceptions to the rising yield trend were the Philippines and the Republic of Korea. The Philippines'

[4] While the Hong Kong dollar is pegged to the US dollar, it is allowed to move within a narrow range, with the HKMA automatically stepping in once the Hong Kong dollar reaches a specified ceiling or floor.

2-year yield, which rose 10 bps during the review period, was impacted by both rising US yields and a 25-bps policy rate hike by the Bangko Sentral ng Pilipinas on 10 May. On the other hand, the 10-year yield declined due to a lack of liquidity affecting benchmark pricing. In the Republic of Korea, yields fell marginally on uncertainty over the timing and possibility of another rate hike by the Bank of Korea as the central bank maintained its policy rate but noted risks to the growth forecast, and lowered its inflation forecast for full-year 2018.

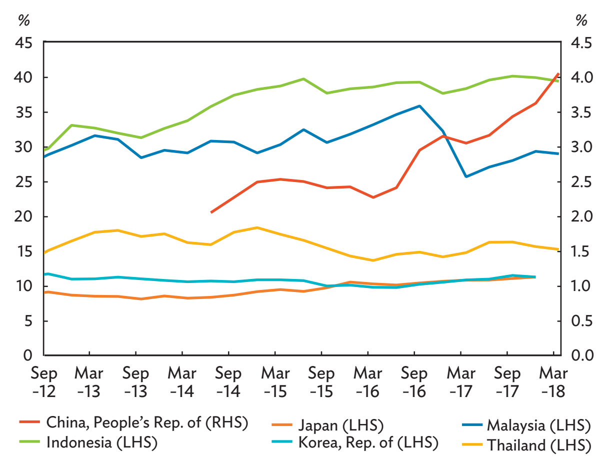
The defining feature of the global economic and financial landscape is the robust world economy, which continues to gather momentum. According to the International Monetary Fund's *World Economic Outlook, April 2018*, global output expanded 3.8% in 2017, the fastest pace since 2011, and is projected to expand 3.9% in both 2018 and 2019. Advanced economies grew at a pace of 2.3% in 2017 and are projected to grow 2.5% in 2018 and 2.2% in 2019. The corresponding figures for emerging markets and developing economies are 4.8%, 4.9%, and 5.1%. Global growth is supported by strong growth momentum, positive market sentiment, accommodative financial conditions, and US fiscal stimulus. According to the *World Economic Outlook, April 2018*, consumer price inflation in advanced economies will pick up from 1.7% in 2017 to 2.0% in 2018, before dipping to 1.9% in 2019. In emerging markets and developing economies, consumer price inflation will increase from 4.0% in 2017 to 4.6% in 2018, before slowing to 4.3% in 2019. The key drivers of rising inflation in 2018 will be strong demand pressures and higher global oil prices.

Developing Asia is also growing at a healthy pace and remains the world's fastest-growing region.[5] According to the Asian Development Bank's *Asian Development Outlook 2018* released in April, the region's economy expanded 6.1% in 2017 and is projected to expand 6.0% in 2018 and 5.9% in 2019. The economies of emerging East Asia, in particular, are performing well. The PRC grew 6.9% in 2017 and is projected to grow 6.6% in 2018 and 6.4% in 2019. The corresponding figures for the 10 members of the Association of Southeast Asian Nations are 5.2%, 5.2%, and 5.2%. The more mature, high-income economies of the Republic of Korea and Hong Kong, China are also doing well, with projected growth of around 3.0% in both 2018 and 2019. The region's rapid growth is fueled by the benign global environment and robust domestic demand. Inflation is rising in the region but remains below levels that would seriously threaten macroeconomic stability. The *Asian Development Outlook* projects developing Asia's consumer price inflation will rise from 2.4% in 2017 to 3.0% in 2018 and hold steady at 3.0% in 2019.

While both advanced economies and emerging economies are performing well, capital is flowing from emerging markets to advanced economies. Positive market sentiment about the US economy and the strengthening US dollar is attracting investment back to advanced economies. As rising US interest rates narrow interest rate differentials with emerging economies, global investors are pulling investment out of the region, leading to a decline in foreign holdings (**Figure C**), currency depreciations (**Figure D**), and subdued equity markets (**Figure E**).

Foreign holdings of LCY government bonds in emerging East Asia slightly fell in Q1 2018 in all emerging East Asian markets for which data are available, except the PRC. Foreign holdings as a share of total LCY government bonds remained high at the end of March in Indonesia and Malaysia at 39.3% and 28.9%,

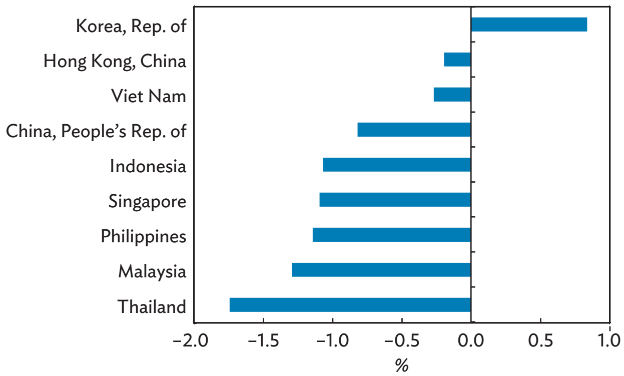
**Figure C: Foreign Holdings of Local Currency Government Bonds in Select Asian Economies** (% of total)




LHS = left-hand side, RHS = right-hand side.
Note: Data as of 31 March 2018 except for Japan and the Republic of Korea (31 December 2017).
Source: *AsianBondsOnline*.

[5] Developing Asia comprises the 45 regional developing member economies of the Asian Development Bank. https://www.adb.org/sites/default/files/publication/411666/ado2018.pdf.

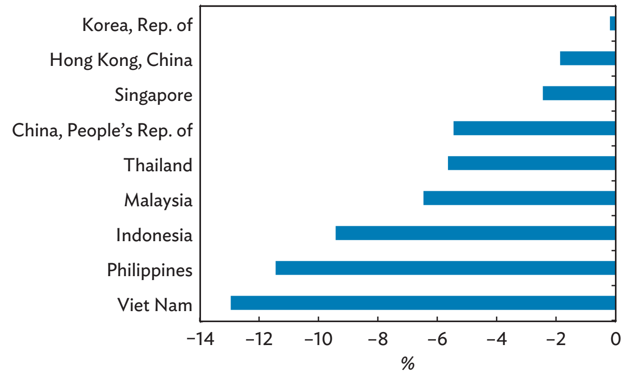
**Figure D: Changes in the United States Dollar Value per Unit of Local Currency**




Notes:
1. Changes between 1 March 2018 and 31 May 2018.
2. A positive (negative) value for the foreign exchange rate indicates the appreciation (depreciation) of the local currency against the United States dollar.

Source: Bloomberg LP.

**Figure E: Changes in Equity Indexes in Emerging East Asia**




Note: Changes between 1 March 2018 and 31 May 2018.
Source: Bloomberg LP.

respectively. Yet, these ratios were down slightly in both markets due to net outflows of foreign investment amid the continued expansion of the LCY bond market. Foreign holdings in Thailand fell to 15.2% of the total LCY government bond market at the end of March for the same reason. In April, bond markets in Indonesia, Malaysia, and Thailand witnessed capital outflows triggered by the strengthening US dollar and rising US Treasury yields, which prompted a broader sell-off of emerging market assets. On the other hand, foreign holdings in the PRC continued to rise in Q1 2018, reaching 4.0% of the total market at the end of March from 3.6% at the end of December, as the PRC bond market opens up to foreign investors. Foreign holdings in Japan and the Republic of Korea were mostly unchanged in Q4 2017 based on the most recent data available in these markets.

Between 1 March and 31 May, all emerging east Asian currencies except for the Korean won depreciated against the US dollar. The Indonesian rupiah depreciated significantly, despite massive intervention by Bank Indonesia to defend the local currency. The Thai baht depreciated against the US dollar due to capital outflows. The Singapore dollar fell despite the Monetary Authority of Singapore's decision at its April policy meeting to allow the Singapore dollar to gradually appreciate. The Hong Kong dollar declined, hitting the weak-side of its currency band in April. The HKMA intervened to defend the currency but with limited effect. The Philippine peso showed a sharp depreciation in May following the 10 May monetary policy meeting in which the central bank hinted that there might be no further interest rate hikes in 2018. The statement contradicted market expectations of further rate hikes in 2018. The Korean won slightly appreciated versus the US dollar due to easing geopolitical tensions. The Chinese renminbi and Vietnamese dong were broadly stable during the review period. The strengthening US dollar and continuing rate hikes by the Federal Reserve have triggered large depreciations among other emerging market currencies, in particular the Argentine peso and Turkish lira. There are some concerns that pressures on currencies may challenge financial stability in the region. However, **Box 1** finds that the region's solid fundamentals limit the risk of sharp depreciations.

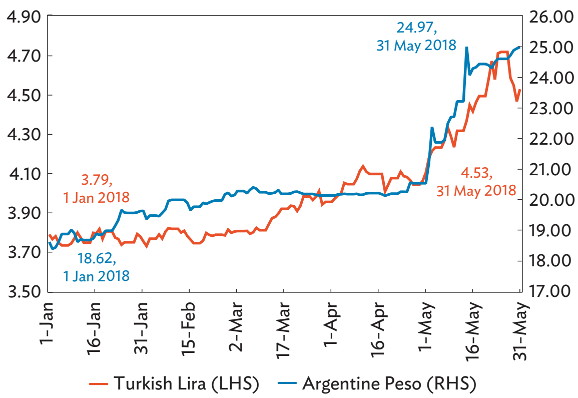
Most emerging Asian equity markets retreated between 1 March and 31 May (Figure E), with Viet Nam's equity market falling the most. Meanwhile, the Republic of Korea fell the least.

In line with a general rise in bond yields and the depreciation of most currencies in emerging East Asia, financial risk indicators such as CDS spreads rose during the review period (**Figure F**). Indonesia witnessed a jump of 34 bps in its CDS spread due to market expectations of continued depreciation and capital outflows. The rise in Malaysia's CDS spread came amid political uncertainty. There is also uncertainty with regard to the new administration's economic policies, such as the recent removal of the Goods and Services Tax. Reflecting the decline of geopolitical tensions, the

## Box 1: Emerging Market Financial Turbulence and Its Implications for Emerging Asia

Two major emerging markets—Argentina and Turkey—are experiencing a bout of financial instability against the backdrop of rising United States (US) interest rates. The instability is evident in the sharp depreciation of the Argentine peso and the Turkish lira, which have fallen by 25% and 16%, respectively, since the beginning of the year (**Figure B1.1**). Weak fundamentals, as evidenced by high inflation and sizable current account deficits (**Figure B1.2**), have contributed to the erosion of confidence in the two economies. There are some concerns that tightening global conditions may adversely affect the financial stability of all emerging markets. In this box, we briefly assess the likelihood that Asian economies may also suffer financial stress in the face of higher US interest rates and a strengthening US dollar. We conclude that strong fundamentals limit this likelihood.

**Figure B1.1: Argentine Peso–US Dollar and Turkish Lira–US Dollar, 1 January–31 May 2018**

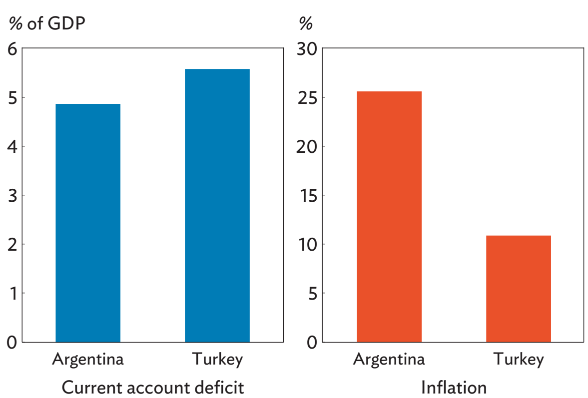



LHS = left-hand side, RHS = right-hand side, US = United States.
Note: Data are from 1 January 2018 to 31 May 2018.
Source: Bloomberg LP.

### Argentina and Turkey: Key Recent Developments

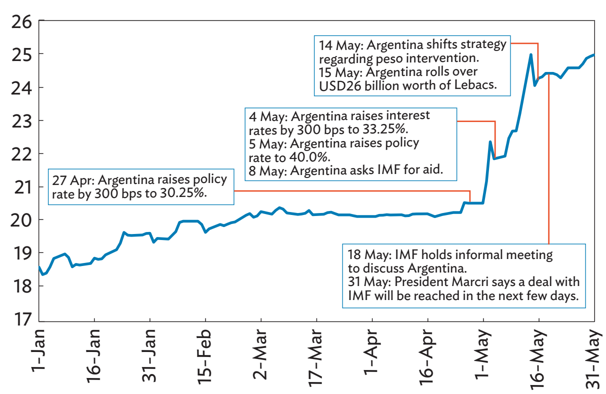
The Argentine peso has depreciated more than any other currency thus far in 2018. **Figure B1.3** shows the recent trend of the Argentine peso–dollar exchange rate, as well as key events related to the depreciation. Argentina's central bank actively defended the peso by using its foreign exchange reserves and raising its key policy rate three times in a week (27 April, 4 May, and 5 May) to reach 40.0%. These measures were insufficient since the Argentine peso only briefly appreciated after each intervention before falling again. The government finally turned to the International Monetary Fund on 8 May. On 14 May, the Argentine peso hit its lowest level of the year, forcing the central bank to change strategy and allow its currency to depreciate further while setting a ceiling of 25 to 1 versus the US dollar. On 16 May, however, the Argentine peso got a significant boost following the successful rollover of USD26 billion worth of short-term peso-denominated securities known as Lebacs. However, since then the Argentine peso has continued to depreciate and Argentina is currently in negotiations with the International Monetary Fund for a credit line of at least USD40 billion. On 31 May, President Marci said that he expected a deal to be made within the next few days.

**Figure B1.2: Current Account Deficit and Inflation in Argentina and Turkey, 2017**




GDP = gross domestic product.
Source: CEIC database.

**Figure B1.3: Argentine Peso–US Dollar Key Developments, 1 January–31 May 2018**




bps = basis points, IMF = International Monetary Fund, US = United States.
Note: Data are from 1 January 2018 to 31 May 2018.
Source: Bloomberg LP.

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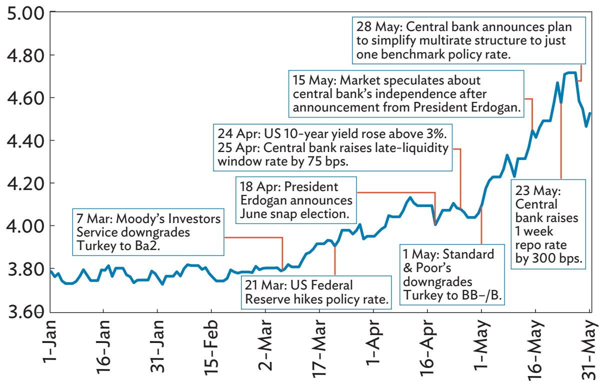
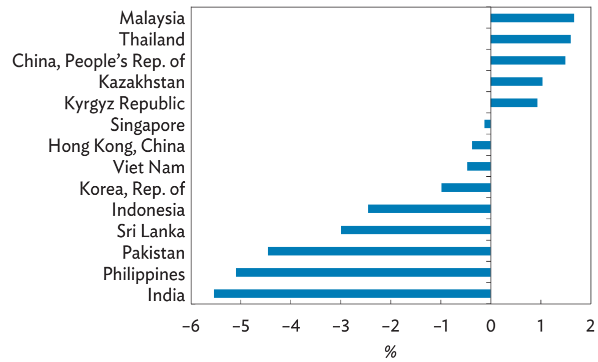
## Box 1: Emerging Market Financial Turbulence and Its Implications for Emerging Asia
*continued*

**Figure B1.4: Turkish Lira–US Dollar Key Developments, 1 January–31 May 2018**




US = United States.
Note: Data are from 1 January 2018 to 31 May 2018.
Source: Bloomberg LP.

**Figure B1.5: Change in Local Currency vs. US Dollar Exchange Rate, 1 January–31 May 2018**




US = United States.
Note: Changes between 1 January 2018 and 31 May 2018.
Source: Bloomberg LP.

The Turkish lira has been the second-worst performing currency thus far in 2018 (**Figure B1.4**). The sharp depreciation of the lira combined with rising energy prices has pushed inflation into double-digit territory, which, in turn, further erodes investor confidence. On 25 April, the central bank raised one of its policy rates, the late-liquidity window rate, from 12.75% to 13.50%, to arrest inflation and support the currency. However, the lira continued to weaken amid uncertainty over the anti-inflationary commitment of Turkey's monetary policy. On 23 May, the central bank raised its 1-week repo rate, considered its key policy rate, by 300 basis points (bps) to 16.50%. The following week the central bank announced a plan to simplify its multirate structure to just one policy rate (1-week repo rate) effective 1 June, in order to add more credibility to its commitment to address inflation and reduce currency volatility. In a sign of eroding confidence, Standard & Poor's cut its sovereign debt rating on 1 May, as Moody's Investors Service had earlier done on 7 March.

Most emerging Asian currencies have depreciated against the US dollar thus far in 2018 (**Figure B1.5**).[a] The depreciation of regional currencies has been driven primarily by the general strengthening of the dollar due to the robust US economy and higher US interest rates. The Indian rupee, Philippine peso, and Indonesian rupiah have been among the worst-performing regional currencies year-to-date. In the three markets, which all have current account deficits, market-specific factors have contributed to the depreciation. The weakening of the Indonesian rupiah can be attributed to capital outflows as investors pulled out in the face of narrowing interest rate differentials with US interest rates. The Philippine peso depreciated sharply following the 10 May monetary policy meeting in which the central bank hinted that there might be no further interest rate hikes, contrary to market expectations. Finally, the Indian rupee's weakness can be partly attributed to the rise in energy prices since India is a net energy importer, adding to concerns of higher inflation and its impact on economic growth. Central banks in the region have also intervened to defend their local currencies, particularly in India, Indonesia, and the Philippines (**Figure B1.6**). Bank Indonesia in its monetary policy meeting on 17 May and a special meeting on 30 May, raised its policy rate by a total of 50 bps to arrest the sharp depreciation of the Indonesian rupiah. The Reserve Bank of India on 6 June raised its benchmark rate by 25 bps.

Both Hong Kong, China and Singapore have experienced a small depreciation in 2018, but neither of these reflects concerns about fundamentals. In the case of Hong Kong, China, the depreciation was largely due to US interest rate hikes, which Hong Kong, China did not immediately match due to ample liquidity in the market. As the Hong Kong dollar approached the weak-end of its currency band, the Hong Kong Monetary Authority

[a] Emerging Asia comprises the People's Republic of China; Hong Kong, China; Indonesia; India; Kazakhstan; the Republic of Korea; the Kyrgyz Republic; Malaysia; Pakistan; the Philippines; Singapore; Sri Lanka; Thailand; and Viet Nam.

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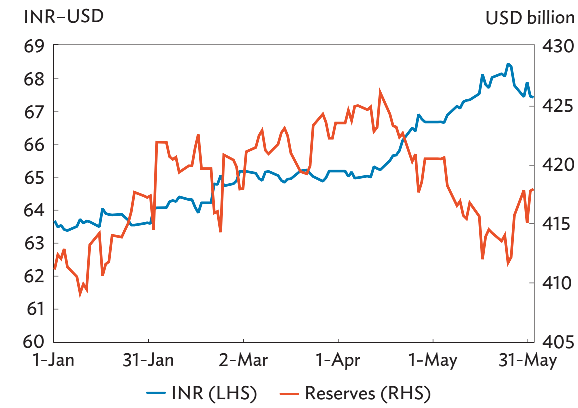
## Box 1: Emerging Market Financial Turbulence and Its Implications for Emerging Asia
*continued*

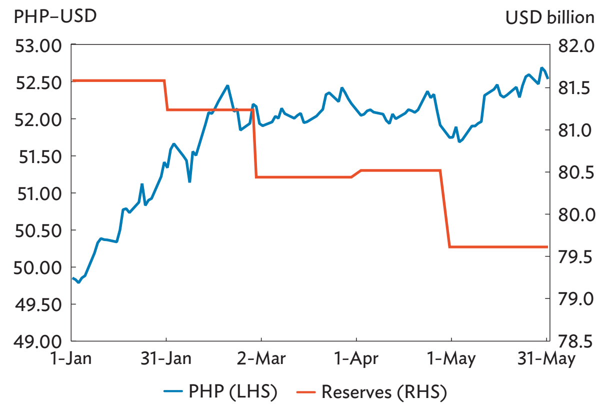
**Figure B1.6: Currency Depreciation and Foreign Exchange Reserves, 1 January–16 May 2018**

**A. Indian Rupee–US Dollar and India's Foreign Exchange Reserves, 1 January–31 May 2018**



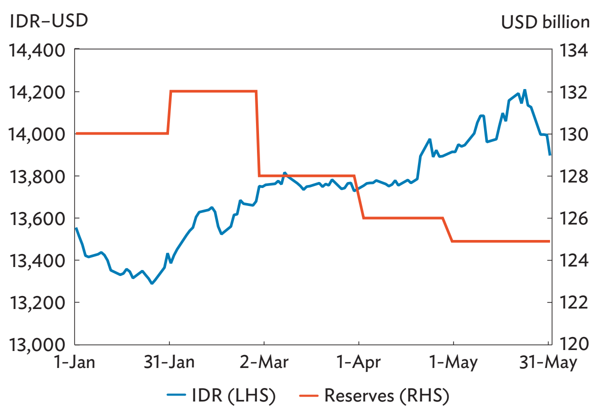

INR = Indian rupee, LHS = left-hand side, RHS = right-hand side, USD = United States dollar.
Source: Bloomberg LP.

**B. Philippine Peso–US Dollar and the Philippines' Foreign Exchange Reserves, 1 January–31 May 2018**



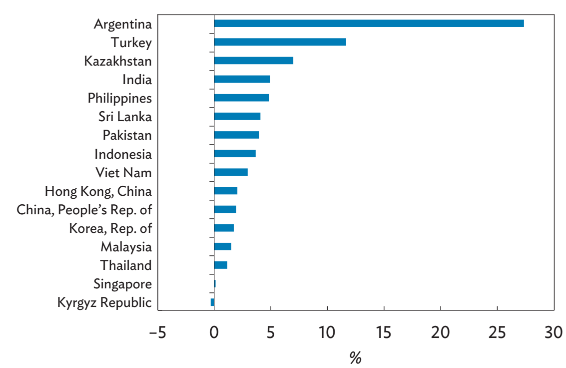

PHP = Philippine peso, LHS = left-hand side, RHS = right-hand side, USD = United States dollar.
Source: Bloomberg LP.

**C. Indonesian Rupiah–US Dollar and Indonesia's Foreign Exchange Reserves, 1 January–31 May 2018**




IDR = Indonesian rupiah, LHS = left-hand side, RHS = right-hand side, USD = United States dollar.
Source: Bloomberg LP.

**Figure B1.7: Inflation in Select Economies, April 2018**




Note: Inflation rate data as of April 2018 except for the Kyrgyz Republic (December 2017).
Source: Bloomberg LP.

intervened, leading to a rise in Hong Kong dollar interest rates; this intervention is automatic since the Hong Kong dollar is pegged to the US dollar. In the case of Singapore, the currency is largely managed and reflects monetary policy. On 13 April, the Monetary Authority of Singapore announced that it would allow a slight appreciation of the currency.

One key reason that higher US interest rates and a stronger US dollar have not destabilized emerging Asia is the region's relatively strong fundamentals. In particular, inflation, which is perhaps the most widely used indicator of macroeconomic stability, remains well below levels seen in Argentina and Turkey (**Figure B1.7**). The other vulnerability indicators show a mixed picture, with some Asian economies more vulnerable than others. However, some Asian economies are somewhat vulnerable according to some, but not all, indicators, as seen in **Table B1**. In contrast, Argentina and Turkey show vulnerability across the board.

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## Box 1: Emerging Market Financial Turbulence and Its Implications for Emerging Asia *continued*

**Table B1: Vulnerability Indicators for Select Economies**

| | Current Account Balance/GDP | External Debt/GDP | Short-Term External Debt/Reserves | Import Cover (months) |
|---|---|---|---|---|
| Turkey | (5.56) | 53.19 | 21.42 | 5.57 |
| Argentina | (4.85) | 28.17 | 67.08 | 5.15 |
| Kyrgyz Republic | (4.76) | 91.32 | n.a. | 4.85 |
| Pakistan | (4.09) | 27.30 | 19.49 | 8.87 |
| Sri Lanka | (2.99) | 56.96 | 109.42 | 3.80 |
| Kazakhstan | (2.95) | 105.88 | 40.87 | 7.24 |
| India | (2.00) | 19.27 | 25.07 | 10.48 |
| Indonesia | (1.70) | 34.69 | 38.62 | 8.95 |
| Philippines | (0.80) | 23.32 | 19.49 | 8.87 |
| China, People's Rep. of | 1.40 | 13.95 | 34.79 | 19.74 |
| Viet Nam | 2.90 | 42.39 | 38.35 | 3.09 |
| Malaysia | 2.98 | 69.15 | 92.03 | 6.34 |
| Hong Kong, China | 4.20 | 458.21 | 242.76 | 9.38 |
| Korea, Rep. of | 5.09 | 27.16 | 30.15 | 9.51 |
| Thailand | 10.83 | 32.73 | 31.85 | 10.85 |
| Singapore | 18.83 | 417.03 | 392.96 | 10.24 |

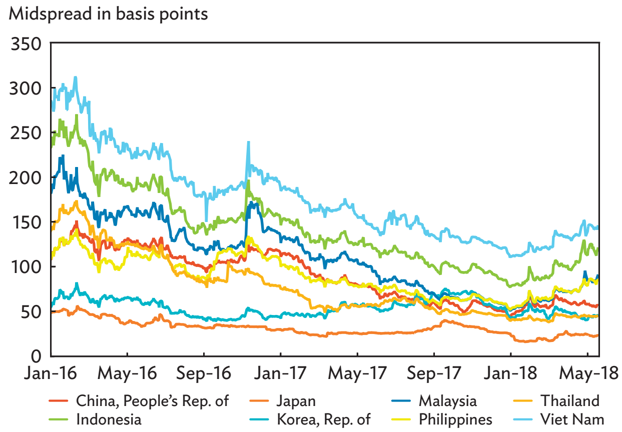
( ) = negative, n.a. = data not available.
Notes: Current Account Balance/GDP and External Debt/GDP as of 2017 except for the People's Republic of China, Sri Lanka, and Viet Nam (2016). Short-Term External Debt/Reserves as of 2017 except for Viet Nam (2016). Import Cover as of March 2018 for the People's Republic of China, India, Indonesia, Malaysia, Singapore, and Thailand; as of February 2018 for Hong Kong, China; Kazakhstan; the Republic of Korea; the Kyrgyz Republic; Pakistan; the Philippines; and Viet Nam; as of January 2018 for Sri Lanka; and as of 2016 for Argentina and Turkey.
Sources: For Turkey and Argentina, *AsianBondsOnline* calculations based on data from CEIC and Bloomberg LP; for all other economies, data taken from Asian Development Bank. 2018. *Asian Development Outlook 2018*. Manila.

To sum up, the current financial instability of two major emerging markets—Argentina and (to a lesser extent) Turkey—is giving rise to concerns that tightening global liquidity conditions could also impact emerging economies in Asia. By and large, it seems that the risk is relatively limited since emerging Asian economies have much stronger fundamentals than the two affected emerging markets highlighted in this box. In contrast to these two markets, which seem vulnerable according to all indicators, Asian economies that seem somewhat vulnerable in some areas are less vulnerable in other areas. Nevertheless, the turbulence engulfing the two economies should serve as a stark warning to Asian economies to closely monitor external developments and maintain strong fundamentals. A sudden global shock, such as a faster- and/or larger-than-expected increase in US interest rates, will reward emerging markets that are well prepared and punish those that are not. That, more than anything else, is the lesson from Argentina and Turkey.

Republic of Korea's CDS spread fell. Meanwhile, EMBI Global Spreads and JP Morgan Emerging Markets Bond Index Sovereign Stripped Spreads ticked upward during the review period. US yields peaked, causing a sell-off of emerging market assets (**Figure G**, **Figure H**). The Volatility Index declined as US equity markets remained stable after a spike in early February. However, an uptick was observed on 29 May due to political turmoil in Italy, but the index has since recovered.

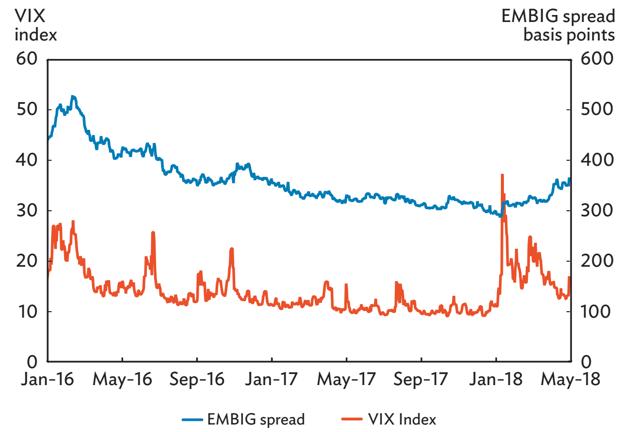
With emerging Asian's economic growth on solid footing, LCY bond markets continue to support investment across the region. In this context, developing the green bond market would greatly benefit environmentally friendly investments and sustainable growth in the region. The PRC has become a global leader in the fast-expanding green bond market, while the Association of Southeast Asian Nations has released a new green bond standard to give impetus to the further development

**Figure F: Credit Default Swap Spreads in Select Asian Markets** (senior 5-year)




Notes:
1. Based on USD-denominated sovereign bonds.
2. Data as of 31 May 2018.
Source: Bloomberg LP.

**Figure G: United States Equity Volatility and Emerging Market Sovereign Bond Spread**



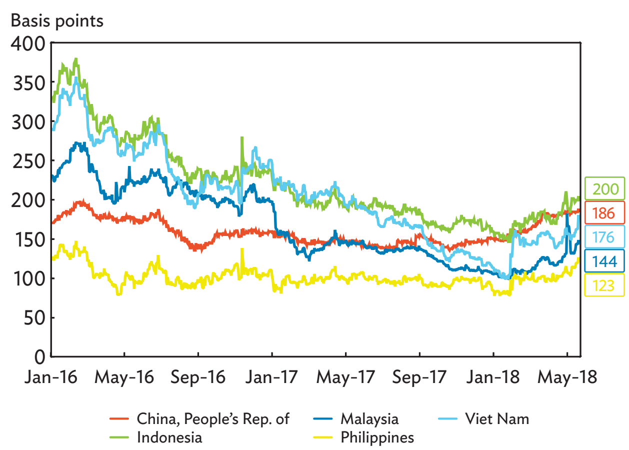

EMBIG = Emerging Markets Bond Index Global, VIX = Chicago Board Options Exchange Volatility Index.
Note: Data as of 31 May 2018.
Source: Bloomberg LP.

of the market in a region where the market remains in a nascent stage. **Box 2** briefly reviews some key issues related to the green bond market's development.

Emerging East Asia is currently enjoying robust economic growth. Although the broader economic and financial landscape is benign, there are, as always, risks that loom on the horizon. Above all, ongoing US monetary policy normalization poses a potential risk to the region's financial stability. In recent decades, tightening by the Federal Reserve following a period of monetary loosening has often resulted in financial stress. Recent examples of such stress associated with normalization include the 1997/98 Asian financial crisis, bursting of the dotcom bubble, and global financial crisis. Relatively high levels of corporate and household debt in some Asian markets could exacerbate the risk (**Figure I**). More broadly, the gradual and anticipated nature of US monetary policy normalization is likely to limit the adverse impacts of US interest rate hikes. However, if the normalization process accelerates or rate hikes are larger than expected, the risk will become more serious.

Another risk to emerging East Asia's financial stability is emerging market currency turmoil. This risk stems partly from the general strengthening of the US dollar, which in turn stems from robust growth momentum and rising interest rates in the US, as reflected in the tangible rise

**Figure H: JP Morgan Emerging Markets Bond Index Sovereign Stripped Spreads**




Notes:
1. Based on USD-denominated sovereign bonds.
2. Data as of 31 May 2018.
Source: Bloomberg LP.

in US Treasury yields. In recent months, the dollar has appreciated versus a broad basket of major currencies as measured by the increase in the US dollar currency index (**Figure J**). In some emerging markets with weak fundamentals, most notably Argentina and Turkey, the strong dollar has contributed to a sharp deterioration of market sentiment. Both the Argentine peso and Turkish lira have fallen sharply in recent weeks. While

## Box 2: A Primer on Green Bonds

**Primer on Green Bonds**

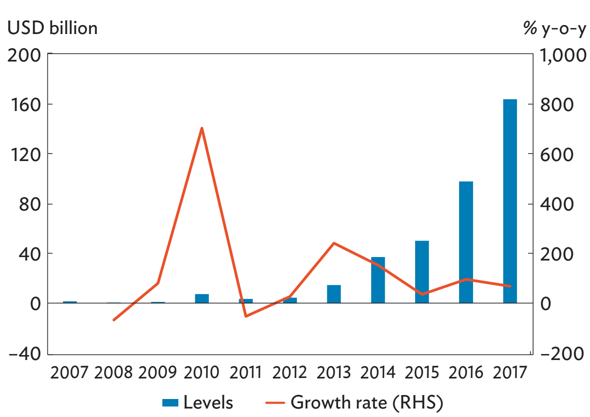
Green bonds are a type of debt instrument that provide financing for investment projects with positive environmental or climate change mitigation benefits. The emergence of this asset class is being driven by the determination of governments to tackle the harmful effects of climate change and limit global warming this century to within 2 degrees Centigrade above preindustrial levels. Green bonds serve as a vehicle for financing investments in green and climate-smart investment projects that contribute to the achievement of a low-carbon future under the Paris Agreement on climate change and the 2030 Agenda for Sustainable Development of the United Nations.

The green bond market has experienced growth and widespread diffusion in the past decade as investor appetite for such debt instruments has increased (**Figure B2.1**). According to Bloomberg criteria and data, green bond issuance rose from a meager USD1.5 billion in 2007 to USD163.1 billion in 2017. The green bond market's impressive growth momentum is expected to last. Average annual issuance has been around USD72 billion over the last 5 years, and around USD130 billion over the last 2 years. However, compared with traditional or conventional bonds, the green bond market is still tiny. The share of green bonds in the overall debt market was estimated at less than 2% in 2017. At the same time, awareness of the potential benefits of green bonds is rising among both investors and issuers.

Green bond issuance commenced in 2007 with pioneering issues by the European Investment Bank and the World Bank. According to the Asian Development Bank (2018), issuers of green bonds encompass the same categories as conventional bonds: sovereigns; supranationals, subsovereigns, and agencies; and corporates. Sovereign bonds are basically government issues. Supranationals, subsovereigns, and agencies include development banks, provincial and municipal governments, infrastructure developers, social security funds, utilities, and infrastructure operators. Corporate issuers comprise financial and nonfinancial companies. As seen in **Figure B2.2**, the share of issuances from supranationals has remained roughly the same over the last 5 years, but new corporate debt issuances jumped from almost nonexistent in 2012 to about one-third of all green bond issuances in 2017, reflecting significant average annual growth.

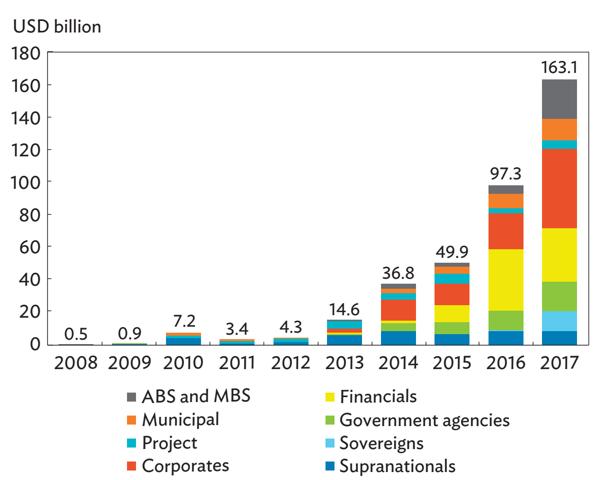
In the absence of universally accepted standards, green bonds usually adhere to the Green Bond Principles (GBP) of the International Capital Market Association, the Climate Bonds Standard of the Climate Bonds Initiative, or some other set of industry norms or voluntary guidelines. These green bond guidelines generally cover four areas: (i) use of proceeds, (ii) project evaluation and selection, (iii) management of proceeds, and (iv) reporting requirements. To provide additional assurances, a third-party examiner can review whether a green bond conforms with the accepted standards. **Table B2** provides a comparison of the guidelines used by the

**Figure B2.1: Green Bonds Issuance—Annual Amounts and Growth Rates**




LHS = left-hand side, RHS = right-hand side, USD = United States dollar, y-o-y = year-on-year.
Source: Bloomberg LP.

**Figure B2.2: Green Bond Issuances by Issuer Type**




ABS =asset-backed securities, MBS = mortgage-backed securities, USD = United States dollar.
Source: Bloomberg LP.

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## Box 2: A Primer on Green Bonds *continued*

**Table B2: Framework Overview of Different Green Bond Identification Schemes**

| | ICMA Green Bond Principles | CBI Climate Bonds Standard | ASEAN Green Bond Standards | CICERO | Sustainalytics |
|---|---|---|---|---|---|
| **Use of proceeds** | Full amount should be described and present clear environmentally sustainable benefits (i.e., green projects). | Full alignment with the latest version of the GBP; a proportion of the proceeds of the bond to be used for financing and refinancing; funds may be reallocated at any time during the term of the bond. | Aligned with the Climate Bonds Standard; full disclosure of eligible projects with clear environmental benefits; fossil fuel power generation projects excluded. | Uses the GBP as loose guidance with deeper analysis to reveal potential climate and environmental risks (macro impacts of investments), with more dynamic approach and flexible definitions of greenness. | Uses the GBP and the SBG. |
| **Project evaluation and selection** | Evaluation process aligned with the 10 broad green categories, eligibility criteria, and the environment. | Follows a two-step process to determine eligibility of projects and assets that conform with the Climate Bonds Standard (taxonomy and sector-specific technical criteria). | Evaluation and selection of projects based on eligibility criteria of environmental sustainability. | Follows "shades of green" methodology of classification that is aligned with a low-carbon, climate-resilient future. | Evaluation process should be aligned the GBP and SBG, together with issuers' internal selection of eligible projects. |
| **Management of proceeds** | Net proceeds should be specifically tracked and reported using a formal internal process. Use of an external auditor or third party to verify process is encouraged. | The noncontamination of proceeds should be documented and tracked in an appropriate manner. | Net proceeds must be disclosed and tracked in an appropriate manner by a formal internal process with use of an auditor or third party. | Proceeds should be tracked and reported using a formal internal process. | Proceeds should be tracked and reported using an internal management system. |
| **Reporting requirements** | Issuers should disclose the use of proceeds and the annual list of projects, with qualitative and quantitative performance indicators, where possible. | Issuers should provide to bond holders and the Climate Bonds Standard Secretariat at least annually a report containing the list of projects and assets for which proceeds of the bond have been allocated (or reallocated). | Issuers must report at least annually and are encouraged to make more frequent reporting on the full allocation of the use of proceeds, with quantitative and qualitative measures. | Issuers are to prepare annual climate bond reporting covering the use of proceeds and impact reporting. | Issuers are to report annually the allocation, estimated share of financing or refinancing, and amount of unallocated proceeds. |
| **External review** | An external reviewer is encouraged. | An external reviewer is required for pre- and post-issuance assurance. | An external reviewer is recommended. | n.a. | n.a. |

ASEAN = Association of Southeast Asian Nations, CBI = Climate Bonds Initiative, CICERO = Centre for International Climate and Environmental Research Oslo, GBP = Green Bond Principles, ICMA = International Capital Market Association, n.a. = not applicable, SBG = Sustainability Bond Guidelines.
Sources: Asian Development Bank (2018), ASEAN Capital Markets Forum (2017), CBI, CICERO, International Capital Market Association (2017), Sustainalytics.

International Capital Market Association, the Climate Bonds Initiative, and selected major reviewers.

Green bonds are very similar to conventional bonds in terms of deal structure and maturity, but they differ in having additional disclosure requirements on the use of proceeds and in terms of the specific impacts achieved for a given period of time. The reporting requirement usually extends into regular reporting to track the progress of the projects throughout the life of the bond. Investors are increasingly keen to include actual impacts as part of the monitoring requirement for green bonds.

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## Box 2: A Primer on Green Bonds *continued*

There are about six common types of green bonds, which are categorized by their purpose. First, general obligation bonds are the most common type of long-term debt security, fully backed by the issuer and used for general-purpose green activity. Most green bonds fall under this type. Second, green *sukuk* (Islamic bonds) adhere to Islamic law. Third, revenue bonds are mostly utilized by sovereigns and subsovereigns, which guarantee repayment from the income of specific revenue-generating green projects. Fourth, project bonds finance all or part of a green infrastructure project. Asset-backed securities are the fifth type and are collateralized by a pooled portfolio of similar green assets within a special purpose vehicle. The sixth type of green bonds are covered bonds, which are debt securities issued by financial institutions and secured by a pool of assets and a general claim on the assets of the issuer.

Green bond proceeds are mostly used for renewable energy and energy efficiency projects, which account for roughly 62% of green bonds investments. More recently, green bonds have expanded to other infrastructure areas such as healthcare, sanitation, and transportation (**Figure B2.3**). By market, the United States, the People's Republic of China, and France have seen the most green bond issuance over the last 3 years. **Figure B2.4** also shows that emerging markets are increasingly participating in the green bond market.

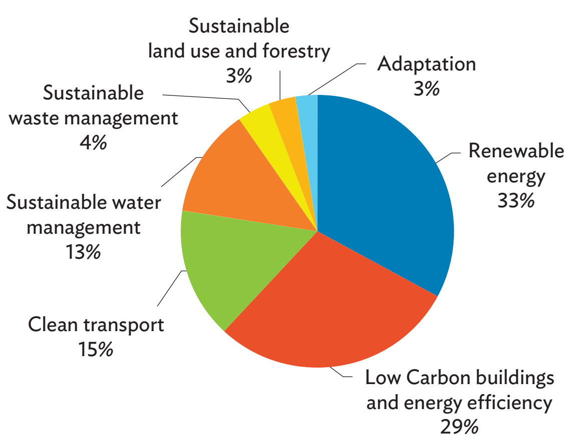
There is growing interest in green bond issuance from various groups despite the higher transaction costs for issuance and ongoing reporting requirements. Estimates from the Asian Development Bank (2018) show that administrative costs can range from USD29,000 to USD117,000 for pre-issuance through ongoing reporting, assuming that the net proceeds of the green bond are fully deployed after 1 year.

A fundamental motive is attaining an improved reputation as the issuing entity can showcase its green credentials and socially responsible behavior when it publicly commits to environmentally beneficial projects and assets. For example, Apple offered the largest green bond in United States' corporate history (USD1.5 billion) in June 2017 as part of its efforts to achieve 100% renewable energy in its worldwide energy sources. Also in 2017, the People's Republic of China issued USD25 billion worth of green bonds for various environmental projects as part of its commitment to reduce carbon emissions.

Another important motive for issuers is to broaden and diversify their investor base by attracting more responsible investors that consider not only financial returns but also the environmental, social, and governance factors of investment. Furthermore, responsible investors tend to hold a bond until maturity, which helps stabilize secondary markets.

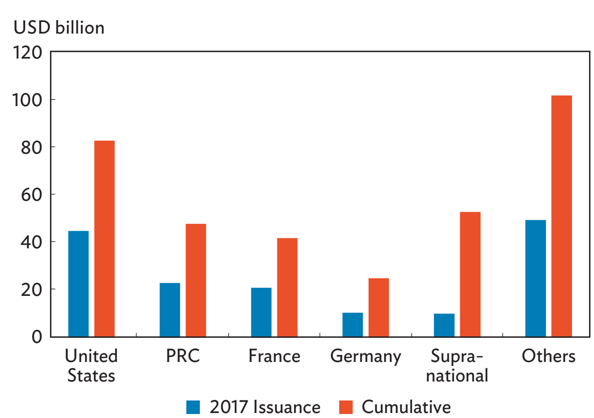
Green bond investors comprise institutional and retail investors, asset owners and asset managers, foreign and domestic investors, and conventional and responsible investors. Most of these investors have an underlying desire

**Figure B2.3: Share in the Use of Green Bond Proceeds by Sector, 2017**




Source: Climate Bonds Initiative (2018).

**Figure B2.4: Top Green Bond Issuers, 2017**




PRC = People's Republic of China, USD = United States dollar.
Source: Climate Bonds Initiative (2018).

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## Box 2: A Primer on Green Bonds *continued*

to align their portfolios with sustainable and responsible investing. According to the CBI, there is strong demand for green bonds, which are often oversubscribed by a wide range of investors. Examples include ING Bank's USD1.3 billion offer that was 7 times oversubscribed; the Korea Development Bank's first green bond issuance of USD300 million that was 2.2 times oversubscribed; and the world's first green *sukuk*, a MYR250 million issuance by Affin Hwang IN that was from 2.5 to 4.0 times oversubscribed. This suggests that there are attractive opportunities for potential issuers to supply more green bonds to the market.

Despite the apparent high demand for green bonds, it is important to know whether green bonds can trade at a lower yield compared with conventional bonds sharing the same characteristics (e.g., issuer, financial, and provisions in case of default). What would be the benefits of green bonds trading at a lower yield? A first good look at this question is discussed in the theme chapter, The Role of Greenness Indicators in Green Bond Market Development: An Empirical Analysis.

The market for green bonds is forecast to post healthy growth in 2018. Forecasts from Moody's Investors Service and the CBI both set the market at USD250 billion, while Standard & Poor's is more conservative at USD200 billion. The green bond market is expected to continue to grow and mature, not only in terms of issuance amounts but also in terms of market players, sector coverage, and active participation from a greater number of markets. Developing a reliable taxonomy on standards and label classifications for green bonds, such as the European Commission's initiative on labels for green finance products and the Association of Southeast Asian Nations' Green Bond Standards, will encourage more investors to use such bonds to finance green investments.

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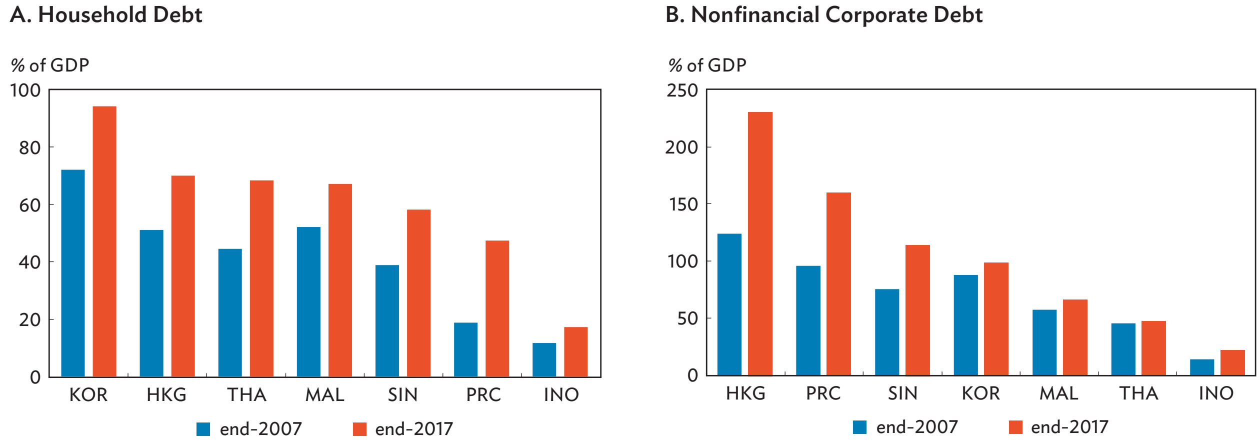
a generalized, risk-aversion sell-off of emerging market assets would not spare emerging East Asia, the region is relatively well positioned to withstand the adverse effects of the strong dollar on its financial stability.

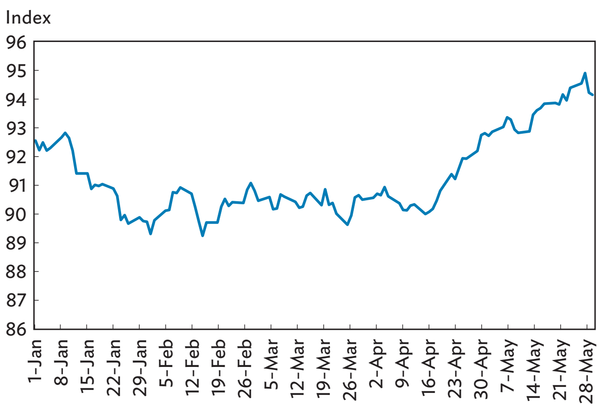
Finally, global trade tensions represent an indirect and less immediate risk to the region's financial stability, but are nevertheless a risk. If trade tensions escalate and result in protectionist measures that significantly affect trade, global growth momentum would be adversely affected. Close supply chain linkages among emerging East Asian economies would amplify the damage from trade disruptions. But perhaps the bigger damage from escalating trade tensions might be the potential erosion of business and consumer confidence, which was evident in the fall of regional and global equity markets on 23 March, in the aftermath of a major US announcement on import tariffs (**Figure K**). A further escalation of trade tensions, especially between the PRC and the US, could adversely affect global economic outlook and financial stability.

**Figure I: Selected Developing Asian Economies, Household Debt, and Nonfinancial Corporate Debt, 2007 versus 2017**



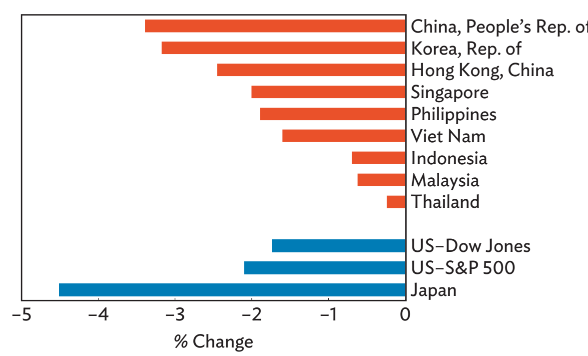

GDP = gross domestic product; HKG = Hong, Kong China; INO = Indonesia; KOR = Republic of Korea; MAL = Malaysia; PRC = People's Republic of China; SIN = Singapore; THA = Thailand.
Source: International Institute of Finance. Global Debt Monitor Database, April 2018.

**Figure J: United States Dollar Currency Index, 1 January–31 May 2018**




Notes: An increase in the index denotes the strengthening or appreciation of the US dollar. The US Dollar Currency Index is a basket of leading global currencies versus the US dollar, representing both developed and emerging market currencies with the most liquidity in currency markets and biggest trade flows with the US. The latest rebalanced basket consists of the euro (31.52%), Japanese yen (18.04%), Canadian dollar (11.42%), pound sterling (10.49%), Mexican peso (10.05%), Australian dollar (5.09%), Swiss franc (4.51%), Korean won (3.73), Chinese renminbi (3.00%), and Indian rupee (2.14%).
Source: Bloomberg LP.

**Figure K: Stock Market Index, 23 March 2018**




S&P = Standard & Poor's, US = United States.
Source: Bloomberg LP.

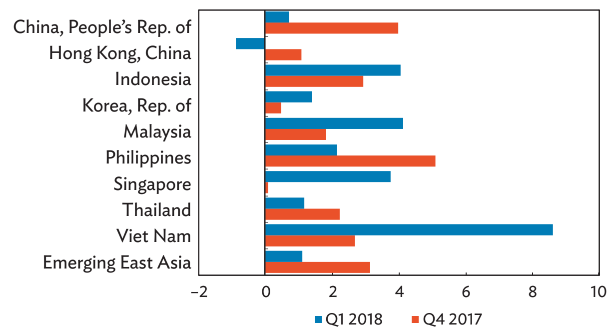
# Bond Market Developments in the First Quarter of 2018

## Size and Composition

### Emerging East Asia's local currency bond market registered marginal growth of 1.1% quarter-on-quarter in the first quarter of 2018 to reach a size of USD12.8 trillion at the end of March.

The total outstanding amount of local currency (LCY) bonds in emerging East Asia inched up 1.1% quarter-to-quarter (q-o-q) to reach a size of USD12.8 trillion at the end of March.[6] At the same time, growth in the first quarter (Q1) of 2018 decelerated from 3.1% q-o-q in the fourth quarter (Q4) of 2017 on lower aggregate bond issuance. All LCY bond markets in the region posted positive q-o-q growth rates with the exception of Hong Kong, China, whose bonds outstanding declined in Q1 2018. Five out of the nine economies posted faster q-o-q expansions in Q1 2018 than in Q4 2017 (**Figure 1a**).

**Figure 1a: Growth of Local Currency Bond Markets in the Fourth Quarter of 2017 and First Quarter of 2018** (q-o-q, %)




q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth 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 31 March 2018 currency exchange rates and do not include currency effects.
4. For Singapore, corporate bonds outstanding are based on *AsianBondsOnline* estimates.

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

The People's Republic of China (PRC) drove the trend of slower regional growth as its LCY bond market posted a marginal increase of 0.7% q-o-q in Q1 2018 following a 4.0% q-o-q expansion in Q4 2017. Total LCY bonds outstanding in the PRC amounted to USD9.1 trillion at the end of March, comprising 71.5% of the region's aggregate bond stock. The PRC's government bond market was up 0.8% q-o-q to USD6.6 trillion at the end of Q1 2018. The subdued growth was primarily driven by low issuance volume for local government bonds, which has largely been the result of the winding down of the central government's debt-to-bond swap program as part of efforts to manage the PRC's debt levels. The amount of remaining local government debt to be swapped was small in Q1 2018 as the program neared completion. The outstanding amount of local government bonds inched up 1.5% q-o-q and the stock of policy bank bonds was up 1.1% q-o-q. Meanwhile, Treasury bonds fell 0.1% q-o-q due to the high volume of maturities relative to new issuance. The PRC's corporate bond market was barely changed in Q1 2018, expanding 0.4% q-o-q to reach USD2.5 trillion at the end of March on tepid issuance during the quarter.

In the Republic of Korea, the outstanding amount of LCY bonds rose 1.4% q-o-q in Q1 2018 to USD2.1 trillion, faster than the marginal growth of 0.5% q-o-q in Q4 2017. Growth was solely driven by the rise in the government bond market, which expanded 3.7% q-o-q, led by the higher stock of central government bonds. The Republic of Korea implemented a frontloading policy in 2018, which resulted in accelerated issuance in Q1 2018. The amount of Monetary Stabilization Bonds also rose in Q1 2018. Meanwhile, the Republic of Korea's LCY corporate bond market was mostly unchanged in Q1 2018, declining 0.1% q-o-q as the volume of maturities exceeded new bond issuance.

Hong Kong, China's LCY bond market fell 0.9% q-o-q to a size of USD241 billion at the end of March, following

[6] 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.

growth of 1.1% q-o-q in the previous quarter, as both the government and corporate segments posted q-o-q contractions. The outstanding amount of government bonds fell 0.4% q-o-q in Q1 2018, driven by the decline in the stock of Hong Kong Special Administrative Region bonds as the government issued fewer bonds relative to the amount of maturing bonds. The amount of central bank bills, particularly Exchange Fund Bills, was barely changed in Q1 2018. Meanwhile, corporate bonds fell 1.6% q-o-q on a high volume of maturing bonds that outpaced issuance for the quarter.

The aggregate LCY bond market size for the 10 member economies of the Association of Southeast Asian Nations (ASEAN) member economies reached USD1.3 trillion at the end of March, up 3.2% q-o-q. All economies for which data are available posted positive q-o-q growth rates in Q1 2018. Government bonds amounted to USD915 billion at the end of March, comprising 68% of total LCY bonds and rising 2.9% q-o-q. LCY corporate bonds in ASEAN markets rose 4.0% q-o-q to USD432 billion at the end of March.

Thailand continued to be the largest bond market among ASEAN economies, with outstanding bonds reaching USD366 billion at the end of March on 1.2% q-o-q growth, which was slower than the 2.2% q-o-q expansion posted in Q4 2017. Growth was largely driven by the 4.0% q-o-q growth in corporate bonds as firms issued more bonds in anticipation of rising interest rates. Meanwhile, the size of outstanding government bonds was barely changed as the rise in total government bonds and Treasury bills was capped by the decline in central bank bonds and state-owned enterprise bonds. The outstanding stock of central bank bonds continued to fall as redemptions of bonds exceeded new issuance for the quarter due to the Bank of Thailand implementing its policy of reducing the issuance of short-term bonds in order to manage speculation of the Thai baht.

Malaysia's LCY bond market posted robust growth of 4.1% q-o-q in Q1 2018, up from 1.8% q-o-q growth registered in Q4 2017. Total outstanding LCY bonds at the end of March amounted to USD347 billion. Government bonds rose 4.7% q-o-q in Q1 2018 due to the surge in issuance in government securities—particularly short-term securities, Treasury bills, and central bank bills—while the volume of maturing bonds was relatively low. In November, Bank Negara Malaysia (BNM) started issuing Bank Negara Interbank Bills to boost liquidity and short-selling in the market. Issuance of Malaysian Government Securities and Government Investment Issues also rose in Q1 2018 as demand remained strong due to the strengthening of the ringgit. Malaysia's corporate bond market expanded 3.5% q-o-q on a relatively low volume of maturating bonds and high issuance volume during quarter.

Malaysia continues to have the largest *sukuk* (Islamic bond) market in emerging East Asia, with aggregate *sukuk* outstanding reaching USD206 billion at the end of March, comprising about 59% of the total LCY bond market and registering 5.0% q-o-q growth. Malaysia's corporate bond market is dominated by *sukuk*, with a share of 75.6%; for the government bond market, the share of *sukuk* is less than half, or about 45%.

The LCY bond market in Singapore totaled USD287 billion at the end of March, based on *AsianBondsOnline* estimates, up 3.7% q-o-q following minimal growth of 0.1% q-o-q in Q4 2017. Robust growth was posted in both sectors. Government bonds expanded 3.7% q-o-q as a result of higher issuance of Singapore Government Securities. Corporate bonds rose 3.8% q-o-q in Q1 2018, driven by a jump in issuance of infrastructure bonds by state-owned companies as part of the government's program to fund infrastructure projects in 2018.

Indonesia's LCY bond market registered growth of 4.0% q-o-q in Q1 2018, exceeding the 2.9% q-o-q growth posted in the previous quarter, to reach a size of USD189 billion at the end of March. The growth was largely driven by the rise in the outstanding stock of central government bonds as the government's issuance of Treasury bonds in Q1 2018 was almost double that in Q4 2017. The Government of Indonesia continued to implement a frontloading policy in 2018. The stock of central bank bills also posted higher growth in Q1 2018 due to a low base in Q4 2017. Indonesia's corporate bond market remains small but continues to grow, posting a 3.4% q-o-q increase in Q1 2018.

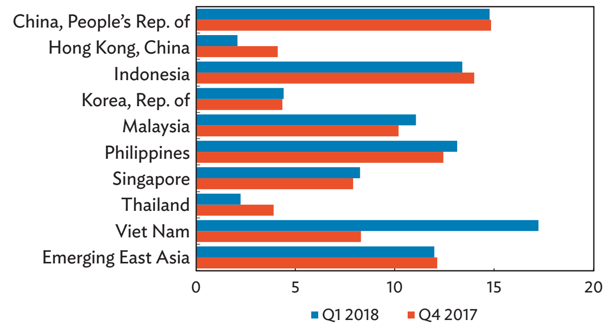
In the Philippines, growth of the LCY bond market slowed to 2.1% q-o-q in Q1 2018 from 5.1% q-o-q in Q4 2017. Total outstanding LCY bonds amounted to USD107 billion at the end of March. The slower growth was due to a high base in the previous quarter following the government's issuance of Retail Treasury Bonds. The corporate bond market led the growth with a 9.2% q-o-q expansion stemming from a surge in issuance. Companies issued more bonds in Q1 2018 as firms anticipated higher interest rates due to expectations of a rate hike by both the Bangko Sentral ng Pilipinas and United States (US) Federal Reserve. Meanwhile, the stock of government bonds posted minimal growth of 0.5% q-o-q. Most Treasury bond and bill auctions in the Philippines were only partially awarded in Q1 2018 as market players sought higher yields.

Viet Nam's LCY bond market reached a size of USD51 billion at the end of March while remaining the smallest market in the region. However, Viet Nam's market posted the region's fastest growth rate in Q1 2018 at 8.6% q-o-q, an acceleration from the 2.7% q-o-q increase posted in Q4 2017, mainly driven by the surge in issuance of central bank bonds that resulted in outstanding central bank bonds increasing more than threefold. The State Bank of Vietnam has been actively building up its foreign reserves over the last 2 years. One mechanism by which to do this is the purchase of foreign currencies in the market with Vietnamese dong. To manage the resulting excess liquidity from the additional Vietnamese dong released into circulation, the State Bank of Vietnam has been issuing central bank bills. Viet Nam's stock of Treasury bonds also rose during the quarter. Meanwhile, the stock of bonds issued by state-owned entities fell in Q1 2018 due to maturities. Corporate bonds registered growth of 4.1% q-o-q in Q1 2018.

On a year-on-year (y-o-y) basis, emerging East Asia's LCY bond market rose 12.0% at the end of March, slightly easing from growth of 12.1% at the end of December (**Figure 1b**). Four markets in the region posted lower annual growth rates in Q1 2018 compared with the previous quarter, while the other five posted faster growth rates. Viet Nam and the PRC posted the highest annual growth rates at 17.2% y-o-y and 14.8% y-o-y, respectively. Hong Kong, China and Thailand posted the slowest annual growth rates at 2.1% y-o-y and 2.2% y-o-y, respectively.

Emerging East Asia's LCY bond market remains dominated by government bonds, which comprised 66.9% of the regional aggregate stock at the end of March, almost at par with the government bond segment's share in Q4 2017 (**Table 1**). The region's government bond market expanded 1.3% q-o-q to reach USD8.5 trillion, decelerating from the 3.7% q-o-q growth posted in the previous quarter.

**Figure 1b: Growth of Local Currency Bond Markets in the Fourth Quarter of 2017 and First Quarter of 2018 (y-o-y, %)**




Q1 = first quarter, Q4 = fourth 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 31 March 2018 currency exchange rates and do not include currency effects.
4. For Singapore, corporate bonds outstanding are based on *AsianBondsOnline* estimates.

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

The PRC continues to have the largest government bond market in the region with a share of about 78% of the regional total at the end of March. The Republic of Korea is second with a market share of about 10%. The Philippines (USD86 billion) and Viet Nam (USD49 billion) remain the two smallest LCY government bond markets in the region. At the same time, the LCY bond market in Viet Nam registered the fastest growth rate in the region in Q1 2018 at 8.9% q-o-q, followed by Malaysia (4.7% q-o-q) and Indonesia (4.2% q-o-q). Only Hong, Kong, China's government bond market declined in Q1 2018.

The region's LCY corporate bond market posted minimal growth in Q1 2018, up only 0.5% q-o-q to USD4.2 trillion at the end of March, which was slower than the 2.0% q-o-q increase posted in Q4 2017. Bonds

**Table 1: Size and Composition of Local Currency Bond Markets**

| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Growth Rate (LCY-base %) | | | | Growth Rate (USD-base %) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Q1 2017 | | Q1 2018 | | Q1 2017 | | Q1 2018 | |
| | Amount (USD billion) | % share | Amount (USD billion) | % share | Amount (USD billion) | % share | q-o-q | y-o-y | q-o-q | y-o-y | q-o-q | y-o-y | q-o-q | y-o-y |
| **China, People's Rep. of** | | | | | | | | | | | | | | |
| **Total** | 7,245 | 100.0 | 8,739 | 100.0 | 9,126 | 100.0 | 0.8 | 17.2 | 0.7 | 14.8 | 1.6 | 9.8 | 4.4 | 26.0 |
| Government | 5,098 | 70.4 | 6,327 | 72.4 | 6,616 | 72.5 | 1.6 | 26.3 | 0.8 | 18.2 | 2.5 | 18.4 | 4.6 | 29.8 |
| Corporate | 2,146 | 29.6 | 2,413 | 27.6 | 2,511 | 27.5 | (1.2) | 0.03 | 0.4 | 6.6 | (0.4) | (6.3) | 4.1 | 17.0 |
| **Hong Kong, China** | | | | | | | | | | | | | | |
| **Total** | 238 | 100.0 | 244 | 100.0 | 241 | 100.0 | 1.1 | 12.5 | (0.9) | 2.1 | 0.9 | 12.3 | (1.3) | 1.1 |
| Government | 137 | 57.7 | 148 | 60.5 | 146 | 60.8 | 0.3 | 11.5 | (0.4) | 7.6 | 0.1 | 11.3 | (0.8) | 6.5 |
| Corporate | 101 | 42.3 | 96 | 39.5 | 94 | 39.2 | 2.2 | 13.9 | (1.6) | (5.5) | 2.0 | 13.7 | (2.1) | (6.4) |
| **Indonesia** | | | | | | | | | | | | | | |
| **Total** | 172 | 100.0 | 184 | 100.0 | 189 | 100.0 | 4.6 | 20.3 | 4.0 | 13.4 | 5.8 | 19.6 | 2.7 | 10.1 |
| Government | 148 | 86.0 | 156 | 84.5 | 160 | 84.6 | 4.9 | 19.4 | 4.2 | 11.5 | 6.1 | 18.7 | 2.8 | 8.2 |
| Corporate | 24 | 14.0 | 29 | 15.5 | 29 | 15.4 | 3.0 | 26.4 | 3.4 | 24.8 | 4.1 | 25.6 | 2.1 | 21.1 |
| **Korea, Rep. of** | | | | | | | | | | | | | | |
| **Total** | 1,873 | 100.0 | 2,020 | 100.0 | 2,056 | 100.0 | 1.4 | 2.5 | 1.4 | 4.4 | 9.3 | 4.8 | 1.8 | 9.8 |
| Government | 780 | 41.6 | 827 | 40.9 | 860 | 41.9 | 2.9 | 3.9 | 3.7 | 4.9 | 11.0 | 6.2 | 4.0 | 10.3 |
| Corporate | 1,093 | 58.4 | 1,193 | 59.1 | 1,195 | 58.1 | 0.3 | 1.5 | (0.1) | 4.0 | 8.1 | 3.8 | 0.2 | 9.3 |
| **Malaysia** | | | | | | | | | | | | | | |
| **Total** | 272 | 100.0 | 318 | 100.0 | 347 | 100.0 | 3.3 | 5.7 | 4.1 | 11.1 | 4.7 | (6.9) | 9.1 | 27.2 |
| Government | 147 | 54.0 | 166 | 52.3 | 182 | 52.6 | 2.7 | 3.5 | 4.7 | 8.3 | 4.1 | (8.8) | 9.7 | 24.1 |
| Corporate | 125 | 46.0 | 152 | 47.7 | 164 | 47.4 | 4.0 | 8.3 | 3.5 | 14.3 | 5.4 | (4.5) | 8.4 | 30.9 |
| **Philippines** | | | | | | | | | | | | | | |
| **Total** | 98 | 100.0 | 110 | 100.0 | 107 | 100.0 | 1.5 | 5.0 | 2.1 | 13.1 | 0.3 | (3.8) | (2.5) | 8.8 |
| Government | 80 | 81.1 | 89 | 81.4 | 86 | 80.1 | 0.8 | 3.0 | 0.5 | 11.7 | (0.4) | (5.7) | (4.0) | 7.4 |
| Corporate | 19 | 18.9 | 20 | 18.6 | 21 | 19.9 | 4.6 | 14.6 | 9.2 | 19.5 | 3.3 | 5.0 | 4.3 | 14.9 |
| **Singapore** | | | | | | | | | | | | | | |
| **Total** | 249 | 100.0 | 272 | 100.0 | 287 | 100.0 | 3.5 | 7.2 | 3.7 | 8.2 | 7.1 | 3.4 | 5.7 | 15.3 |
| Government | 147 | 58.9 | 166 | 61.1 | 175 | 61.1 | 6.1 | 11.5 | 3.7 | 12.2 | 9.9 | 7.7 | 5.6 | 19.6 |
| Corporate | 102 | 41.1 | 106 | 38.9 | 112 | 38.9 | (0.1) | 1.5 | 3.8 | 2.5 | 3.4 | (2.1) | 5.8 | 9.2 |
| **Thailand** | | | | | | | | | | | | | | |
| **Total** | 325 | 100.0 | 346 | 100.0 | 366 | 100.0 | 2.8 | 9.4 | 1.2 | 2.2 | 7.3 | 16.9 | 5.7 | 12.6 |
| Government | 240 | 73.9 | 252 | 72.7 | 263 | 71.9 | 3.9 | 8.4 | 0.1 | (0.6) | 8.4 | 15.4 | 4.6 | 9.6 |
| Corporate | 85 | 26.1 | 95 | 27.3 | 103 | 28.1 | (0.2) | 12.1 | 4.0 | 10.1 | 4.1 | 21.4 | 8.7 | 21.3 |
| **Viet Nam** | | | | | | | | | | | | | | |
| **Total** | 44 | 100.0 | 48 | 100.0 | 51 | 100.0 | 0.3 | 14.2 | 8.6 | 17.2 | 0.4 | 11.8 | 8.2 | 17.0 |
| Government | 42 | 95.2 | 45 | 94.2 | 49 | 94.5 | 0.3 | 13.4 | 8.9 | 16.3 | 0.3 | 11.1 | 8.4 | 16.1 |
| Corporate | 2 | 4.8 | 3 | 5.8 | 3 | 5.5 | 1.0 | 30.9 | 4.1 | 34.9 | 1.1 | 28.2 | 3.6 | 34.7 |
| **Emerging East Asia** | | | | | | | | | | | | | | |
| **Total** | 10,517 | 100.0 | 12,281 | 100.0 | 12,770 | 100.0 | 1.1 | 13.4 | 1.1 | 12.0 | 3.3 | 8.5 | 4.0 | 21.4 |
| Government | 6,819 | 64.8 | 8,175 | 66.6 | 8,538 | 66.9 | 2.0 | 21.0 | 1.3 | 15.3 | 3.8 | 15.3 | 4.4 | 25.2 |
| Corporate | 3,698 | 35.2 | 4,106 | 33.4 | 4,233 | 33.1 | (0.4) | 1.5 | 0.5 | 6.0 | 2.5 | (2.1) | 3.1 | 14.5 |
| **Japan** | | | | | | | | | | | | | | |
| **Total** | 10,165 | 100.0 | 10,215 | 100.0 | 10,854 | 100.0 | 0.5 | 2.3 | 0.2 | 1.9 | 5.5 | 3.3 | 6.3 | 6.8 |
| Government | 9,463 | 93.1 | 9,523 | 93.2 | 10,131 | 93.3 | 0.6 | 2.4 | 0.3 | 2.2 | 5.6 | 3.5 | 6.4 | 7.1 |
| Corporate | 703 | 6.9 | 692 | 6.8 | 723 | 6.7 | (0.2) | 0.3 | (1.5) | (1.8) | 4.7 | 1.4 | 4.4 | 2.9 |

( ) = negative, LCY = local currency, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, USD = United States dollar, y-o-y = year-on-year.

Notes:

1. For Singapore, corporate bonds outstanding are 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 are based on 31 March 2018 currency exchange rates and do not include currency effects.
5. Emerging East Asia comprises the People's Republic of China; Hong Kong, China; Indonesia; the Republic of Korea; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.

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

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

| | Q1 2017 | Q4 2017 | Q1 2018 |
|---|---|---|---|
| **China, People's Rep. of** | | | |
| Total | 65.4 | 68.8 | 67.7 |
| Government | 46.0 | 49.8 | 49.1 |
| Corporate | 19.4 | 19.0 | 18.6 |
| **Hong Kong, China** | | | |
| Total | 73.2 | 71.7 | 69.5 |
| Government | 42.2 | 43.3 | 42.3 |
| Corporate | 31.0 | 28.3 | 27.3 |
| **Indonesia** | | | |
| Total | 18.0 | 18.4 | 18.7 |
| Government | 15.5 | 15.5 | 15.8 |
| Corporate | 2.5 | 2.9 | 2.9 |
| **Korea, Rep. of** | | | |
| Total | 126.3 | 124.6 | 125.3 |
| Government | 52.6 | 51.0 | 52.4 |
| Corporate | 73.7 | 73.6 | 72.9 |
| **Malaysia** | | | |
| Total | 95.3 | 95.0 | 97.6 |
| Government | 51.5 | 49.7 | 51.4 |
| Corporate | 43.9 | 45.3 | 46.3 |
| **Philippines** | | | |
| Total | 33.4 | 34.6 | 34.6 |
| Government | 27.1 | 28.2 | 27.7 |
| Corporate | 6.3 | 6.5 | 6.9 |
| **Singapore** | | | |
| Total | 80.2 | 81.1 | 83.2 |
| Government | 47.2 | 49.6 | 50.9 |
| Corporate | 32.9 | 31.5 | 32.4 |
| **Thailand** | | | |
| Total | 75.6 | 73.0 | 72.8 |
| Government | 55.8 | 53.0 | 52.3 |
| Corporate | 19.7 | 20.0 | 20.5 |
| **Viet Nam** | | | |
| Total | 21.8 | 21.6 | 23.0 |
| Government | 20.8 | 20.3 | 21.7 |
| Corporate | 1.1 | 1.2 | 1.3 |
| **Emerging East Asia** | | | |
| Total | 68.5 | 70.8 | 70.1 |
| Government | 44.4 | 47.1 | 46.9 |
| Corporate | 24.1 | 23.7 | 23.2 |
| **Japan** | | | |
| Total | 209.9 | 210.8 | 210.5 |
| Government | 195.4 | 196.5 | 196.4 |
| Corporate | 14.5 | 14.3 | 14.0 |

GDP = gross domestic product, Q1 = first quarter, Q4 = fourth quarter.

Notes:

1. Data for GDP is from CEIC.
2. For Singapore, corporate bonds outstanding are based on *AsianBondsOnline* estimates.

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

issued by corporates comprise about one-third of the region's total LCY bond market. The PRC continues to dominate the region's LCY corporate bond market, accounting for about 59% of the total with bonds outstanding of USD2.5 trillion. The Republic of Korea comes in second at USD1.2 trillion and with a share of about 28%. Indonesia (USD29 billion), the Philippines (USD21 billion), and Viet Nam (USD3 billion) remain the smallest corporate bond markets in the region. Excluding Hong Kong, China (–1.6% q-o-q) and the Republic of Korea (–0.1% q-o-q), all corporate bond markets in the region posted q-o-q growth in Q1 2018. The Philippines' corporate bond market expanded the most, posting an increase of 9.2% q-o-q, followed by Viet Nam's at 4.1% q-o-q.

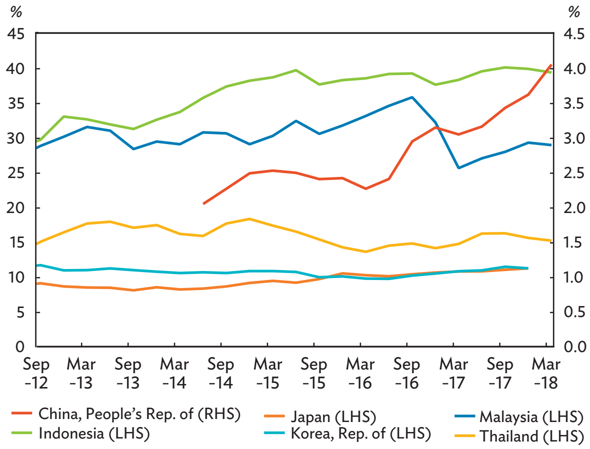
Given the minimal growth in emerging East Asia's bond market in Q1 2018, the ratio of its bond market relative to the region's gross domestic product (GDP) fell slightly to 70.1% from 70.8% in Q4 2017 as the latter rose at a faster pace (**Table 2**). The GDP shares of the region's government and corporate bond segments fell in Q1 2018 to 46.9% and 23.2% from 47.1% and 23.7%, respectively. In Q1 2018, Indonesia, Malaysia, Singapore, and Viet Nam saw increases in their respective ratios of outstanding bonds to GDP. The Republic of Korea and Malaysia continue to have the highest bonds-to-GDP ratios in the region.

## The share of foreign investor holdings in most emerging East Asian LCY government bond markets showed a slight downward trend in Q1 2018.

The share of foreign investor holdings in emerging East Asia showed a slight decrease between the end of December and the end of March as a result of ongoing monetary policy normalization in the US and improved global economic growth (**Figure 2**). These factors have pushed up LCY bond yields, leading investors to reduce their exposure to emerging East Asian LCY bonds.

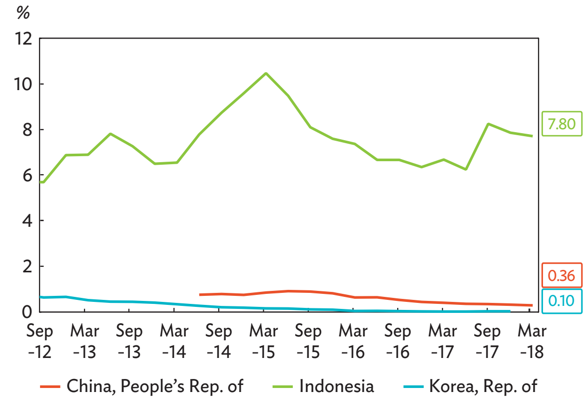
The exception was the PRC, which continued to experience a steady rise in the share of foreign investors in its government bond market, though this share remains at a low level. The share of foreign holdings in the PRC's government bond market rose to 4.0% at the end of March from 3.6% at the end of December. The PRC is also

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




LHS = left-hand side, RHS = right-hand side.
Note: Data as of 31 March 2018 except for Japan and the Republic of Korea (31 December 2017).
Source: *AsianBondsOnline*.

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




Note: Data as of 31 March 2018 except for the Republic of Korea (31 December 2017).
Sources: Based on data from *Wind*, Otoritas Jasa Keuangan, and The Bank of Korea.

the sole economy in the region whose yield curve shifted downward during the review period.

The largest decline in the foreign holdings' share in the LCY government bond market in Q1 2018 occurred in Indonesia, where the share fell from 39.8% at the end of December to 39.3% at the end of March. The decline reflects investor concerns about Indonesia's vulnerability to a stronger US dollar.

Thailand's foreign holdings' share in the LCY government bond market fell to 15.2% from 15.6% during the review period, while the foreign investor share in Malaysian government bonds fell from 29.2% to 28.9%. Malaysia saw fund outflows in February that were largely related to rising US yields.

The shares of foreign holdings in emerging East Asian LCY corporate bond markets for which data are available remained low relative to government bonds (**Figure 3**). Both Indonesia and the PRC saw declines in the share of foreign holdings in their respective corporate bond markets. In the PRC, concerns regarding a rise in corporate defaults and widening credit spreads among lower-rated corporates generated negative investor sentiment.

## Emerging East Asia's LCY bond markets attracted foreign funds in January, while net outflows were recorded toward the end of April.

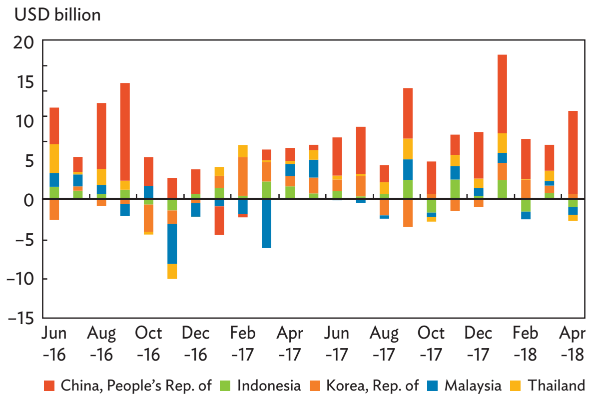
Significant bond inflows were noted in emerging East Asia at the beginning of 2018, with all markets with available data recording inflows due to positive investor sentiment. However, as the US continued its policy normalization in Q1 2018, emerging East Asia currencies depreciated, which led foreign investors to reduce their exposure to the region (**Figure 4**).

In Q1 2018, net bond flows were recorded in all markets, but this was largely driven by the strong inflows in January. In particular, both Indonesia and Malaysia noted strong outflows in February.

In Indonesia, investors are concerned about the continued depreciation of the rupiah, which has worsened Indonesia's current account deficit. The weakening rupiah led Bank Indonesia to raise its policy rate twice in May to help stabilize the domestic currency.

The Republic of Korea sustained positive bond inflows from January through April, largely on improved investor sentiment as geopolitical concerns abated.

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




USD = United States dollar.

Notes:

1. The Republic of Korea and Thailand provided data on bond flows. For the People's Republic of China, Indonesia, and Malaysia, month-on-month changes in foreign holdings of local currency government bonds were used as a proxy for bond flows.
2. Data provided as of April 2018.
3. Figures were computed based on 30 April 2018 exchange rates to avoid currency effects.

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

The Republic of Korea and the PRC were the only two markets to experience net bond inflows in April. Net outflows were recorded in most markets in April due to the release of the Federal Reserve's March meeting minutes, which hinted that policy rate hikes may be accelerated due to a better growth outlook in the US.

From January to April, Malaysia was the only regional economy to record net outflows, which summed to USD0.12 billion. In addition to rising US yields, which drove outflows throughout the review period, outflows in April were also related to political uncertainty ahead of the general election in May.

## Total LCY bond issuance in emerging East Asia declined for the second consecutive quarter in Q1 2018, with the PRC continuing to act as a drag on issuance.

Total LCY bond issuance in emerging East Asia in Q1 2018 amounted to USD1.0 trillion, reflecting a 10.7% q-o-q decline (**Table 3**). The region's bond issuance saw a decline for the second consecutive quarter as both the government and corporate segments contracted. The q-o-q decline logged in Q1 2018 was slower compared with Q4 2017. Among the region's markets, only the PRC and the Philippines saw q-o-q declines in total issuance, with a sizable drag coming from the PRC as its issuance comprised nearly half of the regional total. On an annual basis, issuance grew 10.6% y-o-y in Q1 2018, faster than the 8.8% y-o-y growth registered in Q4 2017, even as more markets experienced a y-o-y decline in issuance in Q1 2018 than in Q4 2017.

Emerging East Asia's total LCY government bond issuance fell 12.6% q-o-q to USD646 billion in Q1 2018, moderating from a dip of 27.1% q-o-q in Q4 2017. The drop was driven by a continued decline in the PRC's government bond issuance in line with its deleveraging efforts at the same time the local government debt swap program is set to end.[7] The PRC bond market comprised 40% of total LCY government bond issuance in the region in Q1 2018. Government bond issuance in the Philippines; Hong Kong, China; and Singapore also fell in Q1 2018, although declines in the latter two markets were minimal. Compared with a year earlier, total government bond sales in Q1 2018 were practically unchanged. Issuance of central bank bonds increased 4.5% q-o-q during the quarter.[8] Positive growth in Indonesia, the Republic of Korea, Malaysia, Thailand, and Viet Nam offset the modest declines in Hong Kong, China and Singapore, which are the two largest central bank issuers in the region.

Issuance of LCY corporate bonds continued to decline in Q1 2018, albeit at a slower pace than in the preceding quarter and when compared with the decline in government bonds. Corporate bonds sales amounted to USD363 billion, reflecting a drop of 7.2% q-o-q. Contractions in large corporate bonds markets, particularly in the PRC and the Republic of Korea, pulled down the regional total, though it was partly cushioned by increases in Hong Kong, China; the Philippines; Singapore; and Thailand. The PRC and the Republic of Korea together accounted for 87% of corporate bond issuances in Q1 2018. The weakened issuance activity in emerging East Asian corporates can be attributed to concerns about higher funding costs. On a y-o-y basis, corporate debt issuance in Q1 2018 was up 31.5%.

[7] Debt raised via bank loans and other nongovernment bonds.
[8] Central bank bonds are included as a component of total government bonds.

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

| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Growth Rate (LCY-base %) | | Growth Rate (USD-base %) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Q1 2018 | | Q1 2018 | |
| | 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** | 391 | 100.0 | 605 | 100.0 | 477 | 100.0 | (23.9) | 11.2 | (21.0) | 22.1 |
| Government | 257 | 65.8 | 374 | 61.8 | 260 | 54.4 | (33.0) | (8.1) | (30.5) | 0.9 |
| Central Bank | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | – | – | – | – |
| Treasury and Other Govt. | 257 | 65.8 | 374 | 61.8 | 260 | 54.4 | (33.0) | (8.1) | (30.5) | 0.9 |
| Corporate | 134 | 34.2 | 231 | 38.2 | 218 | 45.6 | (9.0) | 48.4 | (5.7) | 62.8 |
| **Hong Kong, China** | | | | | | | | | | |
| **Total** | 103 | 100.0 | 113 | 100.0 | 115 | 100.0 | 2.0 | 12.6 | 1.5 | 11.5 |
| Government | 92 | 88.8 | 104 | 91.9 | 101 | 88.0 | (2.4) | 11.5 | (2.8) | 10.4 |
| Central Bank | 91 | 88.6 | 103 | 91.2 | 101 | 87.8 | (1.8) | 11.6 | (2.3) | 10.5 |
| Treasury and Other Govt. | 0.2 | 0.2 | 0.8 | 0.7 | 0.2 | 0.2 | (72.3) | 0.0 | (72.4) | (1.0) |
| Corporate | 12 | 11.2 | 9 | 8.1 | 14 | 12.0 | 51.7 | 21.1 | 51.0 | 19.9 |
| **Indonesia** | | | | | | | | | | |
| **Total** | 15 | 100.0 | 13 | 100.0 | 18 | 100.0 | 45.0 | 22.1 | 43.2 | 18.5 |
| Government | 14 | 88.9 | 9 | 70.1 | 16 | 90.5 | 87.1 | 24.2 | 84.7 | 20.5 |
| Central Bank | 0.3 | 1.7 | 0.1 | 1.1 | 0.3 | 1.7 | 123.1 | 22.7 | 120.3 | 19.1 |
| Treasury and Other Govt. | 13 | 87.2 | 9 | 69.0 | 16 | 88.7 | 86.5 | 24.2 | 84.1 | 20.6 |
| Corporate | 2 | 11.1 | 4 | 29.9 | 2 | 9.5 | (53.7) | 5.5 | (54.3) | 2.3 |
| **Korea, Rep. of** | | | | | | | | | | |
| **Total** | 165 | 100.0 | 171 | 100.0 | 180 | 100.0 | 5.3 | 4.1 | 5.7 | 9.5 |
| Government | 79 | 48.1 | 66 | 38.5 | 82 | 45.7 | 24.9 | (1.0) | 25.3 | 4.2 |
| Central Bank | 39 | 23.8 | 33 | 19.6 | 38 | 21.1 | 13.0 | (7.8) | 13.4 | (3.1) |
| Treasury and Other Govt. | 40 | 24.3 | 32 | 18.9 | 44 | 24.7 | 37.2 | 5.8 | 37.7 | 11.2 |
| Corporate | 85 | 51.9 | 105 | 61.5 | 98 | 54.3 | (7.0) | 8.8 | (6.7) | 14.4 |
| **Malaysia** | | | | | | | | | | |
| **Total** | 17 | 100.0 | 23 | 100.0 | 26 | 100.0 | 7.8 | 30.2 | 12.9 | 49.1 |
| Government | 9 | 50.5 | 9 | 38.7 | 15 | 57.5 | 60.4 | 48.3 | 68.0 | 69.8 |
| Central Bank | 0.2 | 1.1 | 1 | 6.5 | 4 | 16.9 | 181.7 | 1888.2 | 195.0 | 2177.5 |
| Treasury and Other Govt. | 9 | 49.4 | 7 | 32.2 | 11 | 40.6 | 36.0 | 7.1 | 42.5 | 22.7 |
| Corporate | 9 | 49.5 | 14 | 61.3 | 11 | 42.5 | (25.4) | 11.7 | (21.9) | 28.0 |
| **Philippines** | | | | | | | | | | |
| **Total** | 6 | 100.0 | 9 | 100.0 | 6 | 100.0 | (37.2) | (7.4) | (40.0) | (10.9) |
| Government | 5 | 83.6 | 9 | 93.6 | 4 | 78.7 | (47.2) | (12.9) | (49.6) | (16.2) |
| Central Bank | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | – | – | – | – |
| Treasury and Other Govt. | 5 | 83.6 | 9 | 93.6 | 4 | 78.7 | (47.2) | (12.9) | (49.6) | (16.2) |
| Corporate | 1 | 16.4 | 0.6 | 6.4 | 1 | 21.3 | 108.7 | 20.8 | 99.3 | 16.2 |
| **Singapore** | | | | | | | | | | |
| **Total** | 72 | 100.0 | 90 | 100.0 | 93 | 100.0 | 1.2 | 20.8 | 3.1 | 28.7 |
| Government | 69 | 95.9 | 87 | 96.7 | 89 | 95.5 | (0.1) | 20.4 | 1.8 | 28.2 |
| Central Bank | 64 | 89.1 | 83 | 91.8 | 83 | 89.7 | (1.2) | 21.6 | 0.7 | 29.5 |
| Treasury and Other Govt. | 5 | 6.7 | 4 | 4.9 | 5 | 5.8 | 20.3 | 4.4 | 22.6 | 11.2 |
| Corporate | 3 | 4.1 | 3 | 3.3 | 4 | 4.5 | 38.2 | 32.1 | 40.8 | 40.8 |
| **Thailand** | | | | | | | | | | |
| **Total** | 76 | 100.0 | 64 | 100.0 | 72 | 100.0 | 8.4 | (14.1) | 13.2 | (5.3) |
| Government | 66 | 86.0 | 50 | 78.4 | 57 | 79.5 | 9.9 | (20.6) | 14.8 | (12.5) |
| Central Bank | 53 | 70.0 | 43 | 67.1 | 47 | 64.4 | 4.1 | (20.9) | 8.7 | (12.9) |
| Treasury and Other Govt. | 12 | 16.0 | 7 | 11.3 | 11 | 15.1 | 44.4 | (19.0) | 50.9 | (10.8) |
| Corporate | 11 | 14.0 | 14 | 21.6 | 15 | 20.5 | 3.0 | 25.9 | 7.6 | 38.7 |

*continued on next page*

**Table 3** *continued*

| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Growth Rate (LCY-base %) | | Growth Rate (USD-base %) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Q1 2018 | | Q1 2018 | |
| | 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** | 6 | 100.0 | 15 | 100.0 | 21 | 100.0 | 40.8 | 254.6 | 40.2 | 254.0 |
| Government | 6 | 99.6 | 15 | 96.4 | 21 | 99.6 | 45.4 | 254.3 | 44.8 | 253.7 |
| Central Bank | 3 | 49.9 | 13 | 83.6 | 19 | 89.4 | 50.5 | 535.1 | 49.9 | 534.1 |
| Treasury and Other Govt. | 3 | 49.7 | 2 | 12.8 | 2 | 10.2 | 11.7 | (27.5) | 11.2 | (27.7) |
| Corporate | 0.02 | 0.4 | 0.5 | 3.6 | 0.09 | 0.4 | (83.0) | 320.0 | (83.0) | 319.3 |
| **Emerging East Asia** | | | | | | | | | | |
| **Total** | 852 | 100.0 | 1,103 | 100.0 | 1,009 | 100.0 | (10.7) | 10.6 | (8.5) | 18.4 |
| Government | 596 | 70.0 | 722 | 65.5 | 646 | 64.1 | (12.6) | 1.5 | (10.5) | 8.3 |
| Central Bank | 252 | 29.5 | 277 | 25.1 | 293 | 29.0 | 4.5 | 11.4 | 5.7 | 16.2 |
| Treasury and Other Govt. | 345 | 40.4 | 445 | 40.4 | 354 | 35.1 | (23.0) | (5.5) | (20.6) | 2.6 |
| Corporate | 256 | 30.0 | 381 | 34.5 | 363 | 35.9 | (7.2) | 31.5 | (4.8) | 41.7 |
| **Japan** | | | | | | | | | | |
| **Total** | 439 | 100.0 | 406 | 100.0 | 415 | 100.0 | (3.7) | (9.8) | 2.2 | (5.5) |
| Government | 406 | 92.5 | 378 | 93.0 | 396 | 95.5 | (1.1) | (7.0) | 4.9 | (2.5) |
| Central Bank | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | – | – | – | – |
| Treasury and Other Govt. | 406 | 92.5 | 378 | 93.0 | 396 | 95.5 | (1.1) | (7.0) | 4.9 | (2.5) |
| Corporate | 33 | 7.5 | 28 | 7.0 | 19 | 4.5 | (37.7) | (45.5) | (34.0) | (42.9) |

( ) = negative, – = not applicable, LCY = local currency, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Corporate bonds include issues by financial institutions.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. For LCY-base, emerging East Asia growth figures are based on 31 March 2018 currency exchange rates and do not include currency effects.
Sources: People's Republic of China (*ChinaBond* and *Wind Information*); Hong Kong, China (Hong Kong Monetary Authority); Indonesia (Bank Indonesia; Directorate General of Budget Financing and Risk Management, Ministry of Finance; and Indonesia Stock Exchange); Republic of Korea (*EDAILY Bondweb* and The Bank of Korea); Malaysia (Bank Negara Malaysia); Philippines (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).

The PRC's total debt issuance in Q1 2018 dropped 23.9% q-o-q but increased 11.2% y-o-y to USD477 billion. With a share of about 47% of the issuance in emerging East Asia, the PRC remained the largest issuer in the region. Onshore bond market conditions are tight amid higher interest rates, and the authorities are taking regulatory measures to contain risks by scaling down local government and corporate debt levels. Another key reason for the PRC's soft issuance during the quarter is that the remaining volume of local government debt for conversion to bonds has become quite small as the debt-for-bond swap program approaches its conclusion. While arrangements for new bond issuance from local governments have yet to be made, local government debt sales are projected to substantially accelerate in the second quarter of 2018. The q-o-q slump in Q1 2018, however, was slower compared with the decline in Q4 2017. The moderation may have received some respite from the People's Bank of China's (PBOC) cut in bank reserve requirements in January by 100 basis points (bps). While the move does not constitute monetary policy tightening, it shows the authorities are adjusting some easing policies to balance economic growth conditions and the containment of risks. Issuance from the government declined 33.0% q-o-q in Q1 2018 to USD260 billion, while corporate issuance dropped 9.0% q-o-q to USD218 billion.

Hong Kong, China's bond issuance slightly climbed in Q1 2018 to USD115 billion from USD113 billion in Q4 2017. The 2.0% q-o-q increase was underpinned by higher growth in issuance from the corporate sector as issuance from the government fell. Exchange Fund Bills and Exchange Fund Notes from the central bank, as well as Hong Kong Special Administrative Region bonds, all saw lower issuance during the quarter. Corporate issuance grew more than 50% in Q1 2018, but still only comprised 12% of total new issuance in Hong Kong, China.

Bond issuance in Indonesia totaled USD18 billion in Q1 2018, reflecting a 45.0% q-o-q increase. The government and corporate segments saw movements in the opposite direction during the quarter as issuance from the government posted an increase while that of the corporate sector posted a decrease. The government issued a total of USD16 billion, up 87.1% q-o-q. The implementation of a frontloading policy, in which the government borrows most of its funding needs earlier in the year, generated significant issuance during Q1 2018. The government also accepted more bids than its targeted amount in all auctions except for a single *sukuk* auction. The low issuance base in Q4 2017, given that the government met most of its funding requirements earlier in 2017, also contributed to the high q-o-q growth rate. On the other hand, corporate issuances dropped 53.7% q-o-q in Q1 2018, following a 17.6% q-o-q increase in Q4 2017; there were no corporate issuances in January.

The Republic of Korea's total bond issuance was up 5.3% q-o-q in Q1 2018 to USD180 billion, reversing the decline the preceding quarter. Government bond issuance increased 24.9% q-o-q to USD82 billion in contrast to a drop in Q4 2017. The increase can be traced to the government's frontloading of its budget in Q1 2018 on the back of higher spending geared to maintain economic growth by funding rising welfare costs and creating more jobs. On the other hand, issuance from the corporate sector was down 7.0% q-o-q.

In Malaysia, local bond issuance climbed to USD26 billion in Q1 2018 on increased issuance of government bonds, as corporate issuance fell during the quarter, reflecting overall growth of 7.8% q-o-q and 30.2% y-o-y. However, growth was slower on both a q-o-q and y-o-y basis compared with Q4 2017. Government issuance surged 60.4% q-o-q to USD15 billion during the quarter through higher sales of Malaysian Government Securities (USD4.8 billion) and Government Investment Issues (USD3.6 billion) amid fairly strong support from both local investors and foreign investors on the back of a firm Malaysian ringgit. Issuance of government Treasury bills and BNM securities also quickened during the quarter, amounting to USD2.1 billion and USD4.4 billion, respectively. The large volume of BNM debt can be traced to an issuance of BNM Interbank Bills, which amounted to USD4.1 billion. In November 2017, the central bank introduced BNM Interbank Bills as part of its initiative to improve the financial market by enhancing short-selling and liquidity operations in the bond market. Less issuance activity in the corporate sector was seen in Q1 2018, translating into a 25.4% q-o-q drop on the back of rising pressure on funding costs as a result of BNM's rate hike and the expectation of faster monetary policy normalization in the US and other developed countries.

The Philippines total bond issuance shrank 37.2% q-o-q and 7.4% y-o-y, settling at USD6.0 billion in Q1 2018. The negative q-o-q growth was the largest among emerging East Asian markets during the quarter and reversed the recorded surge in Q4 2017. The large drop can essentially be traced to government issuance, which declined 47.2% q-o-q, due to a high base effect from Q4 2017 when the Bureau of the Treasury sold USD5 billion worth of Retail Treasury Bonds. Corporate bond issuance moved in the opposite direction, more than doubling in Q1 2018 and also recording the fastest growth in the region. However, it comprised a small portion of the local and regional issuance market, thus the increase was not substantial in real terms.

In Singapore, local bond issuance was up slightly, reaching USD93 billion on rising corporate issuance. Government issuance was marginally changed at USD89 billion as issuance of Monetary Authority Singapore bills slightly decreased and issuance of Treasury bonds increased. Issuance from the corporate sector was up 38.2% q-o-q to USD4 billion, boosted by a large volume of issuance from government-owned companies. In Q1 2018, Singapore embarked on an outsized bond issuance program with the issuance of infrastructure bonds. The new debt program is expected to raise more than SGD20 billion. Singapore had the third-fastest growth of corporate debt sales in the region in Q1 2018.

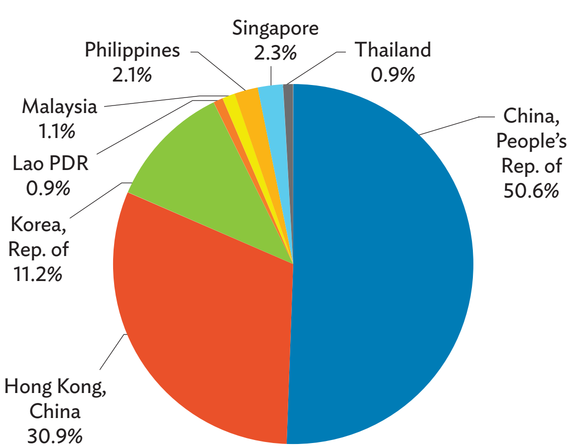
Total issuance in Thailand increased 8.4% q-o-q to USD72 billion and was supported by both the government and corporate segments. Thailand was the sole market in the region that saw positive growth in both government and corporate debt sales. Issuance from the government grew 9.9% q-o-q on increases in Bank of Thailand securities and central government bonds. Debt sales from firms grew 3.0% q-o-q, which was much slower compared with the 31.5% q-o-q growth logged in Q4 2017. The increase can be attributed to Thailand's relatively low interest rate environment amid low inflationary pressures, which makes it conducive for the government and firms to raise funds from the bond market.

Viet Nam's bond issuance surged 40.8% q-o-q in Q1 2018, second in growth in emerging East Asia next to Indonesia. Its total issuance of USD21 billion was supported by the government and corporates. Increased government bond issuance was largely driven by the issuance of State Bank of Vietnam bills to withdraw local money from the banking system in order to minimize inflationary risks. Issuance activity in the corporate segment was subdued in Q1 2018 compared with Q4 2017, with total debt sales falling 83.0% q-o-q to VND2.1 trillion. On an annual basis, government and corporate issuances increased about fourfold.

## Cross-border bond issuance in emerging East Asia reached USD11.1 billion in Q1 2018.

Emerging East Asia's total cross-border bond issuance almost doubled on a q-o-q basis from USD5.6 billion in Q4 2017 to USD11.1 billion in Q1 2018, and surged on a y-o-y basis from only USD0.7 billion in Q1 2017. The PRC had the largest amount of cross-border issuance in Q1 2018 at USD5.6 billion, representing 50.6% of all intra-regional issuance during the quarter (**Figure 5**). This was followed by Hong Kong, China with USD3.4 billion (30.9%). The Lao People's Democratic Republic (Lao PDR) and Thailand had the smallest contribution of USD0.1 billion each, representing a combined share of only 1.8%.

**Figure 5: Origin Economy of Intra-Emerging East Asian Bond Issuance in the First Quarter of 2018**




Lao PDR = Lao People's Democratic Republic.
Note: Data as of 31 March 2018.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

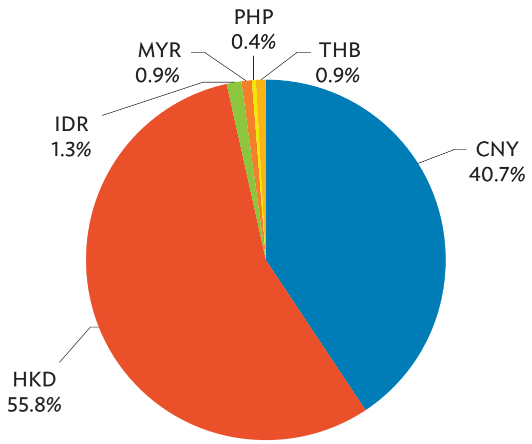
Eight firms in the PRC issued a total of HKD44.1 billion (USD5.6 billion), with tenors ranging from 1 year to 5 years. The largest cross-border issuance was made by China Evergrande Group in order to refinance its debts. The Chinese property developer issued an HKD18 billion 5-year convertible bond with a 4.25% coupon. The PRC also issued a MYR0.5 billion bond with a 2-year tenor and a 2.00% coupon rate. In Hong Kong, China, all intra-regional bond issuances were in Chinese renminbi, totaling CNY21.6 billion. The issuances had tenors from 6 months to 9 years. The largest issuance was a 3-year debt offered by China Resources Land amounting to CNY6 billion with a coupon rate of 5.38%.

Cross-border issuances in the Republic of Korea were denominated in Chinese renminbi, Hong Kong dollars, and Indonesian rupiah, amounting to CNY4.3 billion (USD0.7 billion), HKD3.6 billion (USD0.5 billion), and IDR1,363 billion (USD0.1 billion), respectively. The tenors of the issuance ranged from 1 year to 10 years, with the largest issuance coming from the Export–Import Bank of Korea, which offered a 3-year CNY1.5 billion bond. The Korean bank also issued three HKD-denominated and two IDR-denominated debt securities.

To fund its infrastructure projects, the Government of the Philippines issued 3-year panda bonds amounting to CNY1.46 billion. Singapore issued intra-regional bonds in Chinese renminbi, Indonesian rupiah, and Philippine pesos, with the largest issuance coming from International Offshore Equipment, which offered CNY1 billion worth of 3-year bonds with a coupon rate of 7.50%. In Malaysia, Malayan Banking Berhad issued two HKD-denominated bonds with 3-year and 5-year maturities that totaled to HKD1 billion. Thailand and the Lao PDR issued one cross-border bond each. CIMB Thai Bank issued MYR390 million (USD101 million) worth of 10-year bonds with a coupon rate of 5.20%, while the Lao PDR's Nam Ngum 2 Power Company offered a THB3 billion (USD96 million) 12-year bond with a coupon rate of 3.98%.

Cross-border issuance in emerging East Asia in Q1 2018 were denominated in Hong Kong dollars, Chinese renminbi, Indonesia rupiah, Malaysian ringgit, Thai baht, and Philippine pesos (**Figure 6**). The majority (55.8%) of these cross-border issuances, totaling USD6.2 billion,

**Figure 6: Currency Share of Intra-Emerging East Asian Bond Issuance in the First Quarter of 2018**




CNY = Chinese renminbi, HKD = Hong Kong dollar, IDR = Indonesian rupiah, PHP = Philippine peso, SGD = Singapore dollar, THB = Thai baht.
Note: Data as of 31 March 2018.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

were denominated in Hong Kong dollars. The economies of origin for these HKD-denominated issues included the PRC, the Republic of Korea, and Malaysia.

Bonds denominated in Chinese renminbi amounted to USD4.5 billion and comprised a 40.7% share of the region's cross-border issuance in Q1 2018. Hong Kong, China; the Republic of Korea; the Philippines; and Singapore all issued CNY-denominated bonds.

Issuance in Indonesian rupiah amounted to USD0.1 billion, accounting for 1.3% of all intra-regional issuance, and were observed in the Republic of Korea and Singapore.

The PRC and Thailand issued USD0.1 billion worth of MYR-denominated bonds, comprising 0.9% of all cross-border issuance.

Finally, the Lao PDR issued THB-denominated bonds worth USD0.1 billion, representing a 0.9% share of all cross-border issuance, while Singapore was the lone economy to issue cross-border bonds denominated in Philippine pesos, amounting to USD0.04 billion and representing just 0.4% of all issuances.

## G3 currency bond issuance in emerging East Asia reached USD117 billion in January–April.

Emerging East Asia's issuance of G3 currency bonds reached USD117.0 billion in the first 4 months of the year, representing more than one-third of the full-year 2017 issuance volume (**Table 4**).[9] Compared with the same 4-month period a year earlier, the region's G3 bond issuance climbed 11.9%. Government and corporate issuers from emerging East Asia rushed to lock in low borrowing costs before the Federal Reserve undertakes further policy rate hikes this year. Improving economic prospects in the US signaled the continuation of its monetary policy normalization, while other advanced economies are winding down their stimulus measures. Despite tightening liquidity conditions and rising rates globally, emerging East Asia's G3 issuance managed to expand in the first 4 months of the year.

Bonds denominated in US dollars continued to dominate the region's G3 issuance, accounting for 90.5% of the aggregate issuance volume during the January–April period. This was followed by EUR-denominated bonds with an 8.7% share, while the remaining 0.8% share comprised JPY-denominated bonds. The currency breakdown was broadly comparable with that of the same 4-month period in the prior year.

In the first 4 months of 2018, G3 bond issuance rose on a y-o-y basis in all markets except for the Republic of Korea and Malaysia. The PRC remained the largest source of G3 bonds in emerging East Asia at USD67.4 billion, which was equivalent to 57.6% of the region's total G3 issuance during the review period. It was followed by Hong Kong, China at USD18.4 billion, representing a share of 15.7% of the region's G3 bond issuance total, and Indonesia at USD8.7 billion, or a 7.4% share.

The PRC's total G3 bond issuance, while still the largest in the region, rose only 1.5% y-o-y during the review period. PRC-based companies turned to the offshore market as onshore borrowing has become increasingly difficult amid the government's ongoing deleveraging push and defaults by some corporate borrowers. Although quite a number of PRC corporate issuances

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

### Table 4: G3 Currency Bond Issuance

| 2017 | | |
|---|---|---|
| **Issuer** | **Amount (USD billion)** | **Issue Date** |
| **China, People's Rep. of** | **225.4** | |
| Postal Savings Bank of China 4.50% Perpetual | 7.3 | 27-Sep-17 |
| China Evergrande Group 8.75% 2025 | 4.7 | 28-Jun-17 |
| Alibaba Group Holding 3.40% 2027 | 2.6 | 06-Dec-17 |
| State Grid Overseas Investment Ltd 3.50% 2027 | 2.4 | 04-May-17 |
| China Zheshang Bank 5.45% 2050 | 2.2 | 29-Mar-17 |
| Kaisa Group Holdings Ltd 9.38% 2024 | 2.1 | 30-Jun-17 |
| CNAC (HK) Synbridge Company Ltd 5.00% 2020 | 2.0 | 05-May-17 |
| CNAC (HK) Finbridge Company Ltd 3.85% 2020 | 2.0 | 22-Dec-17 |
| Others | 200.3 | |
| **Hong Kong, China** | **36.7** | |
| Radiant Access Limited 4.60% Perpetual | 1.5 | 18-May-17 |
| China Cinda Finance 3.65% 2022 | 1.3 | 9-Mar-17 |
| Others | 33.9 | |
| **Indonesia** | **26.7** | |
| Perusahaan Penerbit SBSN *Sukuk* 4.15% 2027 | 2.0 | 29-Mar-17 |
| Indonesia (Sovereign) 4.35% 2048 | 1.8 | 11-Dec-17 |
| Perusahaan Listrik Negara 4.13% 2027 | 1.5 | 15-May-17 |
| Indonesia (Sovereign) 3.5% 2028 | 1.3 | 11-Dec-17 |
| Indonesia (Sovereign) 2.15% 2024 | 1.2 | 18-Jul-17 |
| Others | 19.0 | |
| **Korea, Rep. of** | **29.8** | |
| Republic of Korea (Sovereign) 2.75% 2027 | 1.0 | 19-Jan-17 |
| Export–Import Bank of Korea 3.00% 2022 | 1.0 | 1-Nov-17 |
| Export–Import Bank of Korea 0.50% 2022 | 0.9 | 30-May-17 |
| Others | 26.9 | |
| **Lao People's Democratic Rep.** | **0.03** | |
| **Malaysia** | **4.4** | |
| Genting Overseas Holdings Limited Capital 4.25% 2027 | 1.0 | 24-Jan-17 |
| CIMB Bank 1.93% 2020 | 0.6 | 15-Mar-17 |
| CIMB Bank 3.26% 2022 | 0.5 | 15-Mar-17 |
| Others | 2.3 | |
| **Philippines** | **4.0** | |
| Republic of the Philippines (Sovereign) 3.7% 2042 | 2.0 | 2-Feb-17 |
| Others | 2.0 | |
| **Singapore** | **12.5** | |
| DBS Bank 0.38% 2024 | 0.9 | 23-Jan-17 |
| DBS Group Holdings Ltd 1.71% 2020 | 0.8 | 8-Jun-17 |
| Others | 10.9 | |
| **Thailand** | **2.2** | |
| PTTEP Treasury Center Company 4.60% Perpetual | 0.5 | 17-Jul-17 |
| Others | 1.7 | |
| **Viet Nam** | **0.0** | |
| **Emerging East Asia Total** | **341.6** | |
| **Memo Items:** | | |
| **India** | **15.1** | |
| Vedanta Resources PLC 6.375% 2022 | 1.0 | 30-Jan-17 |
| Others | 14.1 | |
| **Sri Lanka** | **3.7** | |

| January to April 2018 | | |
|---|---|---|
| **Issuer** | **Amount (USD billion)** | **Issue Date** |
| **China, People's Rep. of** | **67.4** | |
| Tencent Holdings 3.595% 2028 | 2.5 | 19-Jan-18 |
| CNAC (HK) Finbridge 5.125% 2028 | 1.8 | 14-Mar-18 |
| CNAC (HK) Finbridge 1.75% 2022 | 1.4 | 14-Mar-18 |
| CNAC (HK) Finbridge 4.625% 2023 | 1.3 | 14-Mar-18 |
| Tsinghua Uniq 4.75% 2021 | 1.1 | 31-Jan-18 |
| Baidu 3.875% 2023 | 1.0 | 29-Mar-18 |
| Bank of China 2.89728% 2023 | 1.0 | 08-Mar-18 |
| Bank of China 2.79728% 2021 | 1.0 | 8-Mar-18 |
| Others | 56.3 | |
| **Hong Kong, China** | **18.4** | |
| CHMT Peaceful Dev't Asia Property 7.50% 2019 | 3.3 | 25-Apr-18 |
| ICBC Asia 4.90% Perpetual | 2.5 | 21-Mar-18 |
| Others | 12.5 | |
| **Indonesia** | **8.7** | |
| Perusahaan Penerbit SBSN *Sukuk* 4.40% 2028 | 1.8 | 1-Mar-18 |
| Perusahaan Penerbit SBSN *Sukuk* 3.75% 2023 | 1.3 | 1-Mar-18 |
| Indonesia (Sovereign) 1.75% 2025 | 1.2 | 24-Apr-18 |
| Indonesia (Sovereign) 4.10% 2028 | 1.0 | 24-Apr-18 |
| Star Enegery Geothermal Wayang Windu 6.75% 2033 | 0.6 | 24-Apr-18 |
| Others | 2.9 | |
| **Korea, Rep. of** | **8.4** | |
| Hanwha Life Insurance 4.70% 2048 | 1.0 | 23-Apr-18 |
| Hyundai Capital Services 3.75% 2023 | 0.5 | 5-Mar-18 |
| Korea Development Bank 3.375% 2023 | 0.5 | 12-Mar-18 |
| Others | 6.4 | |
| **Lao People's Democratic Rep.** | **0.0** | |
| **Malaysia** | **0.7** | |
| Cindai Capital 0.00% 2023 | 0.3 | 08-Feb-18 |
| Malayan Banking 0.00% 2048 | 0.2 | 29-Mar-18 |
| Malayan Banking 3.08903% 2023 | 0.1 | 12-Jan-18 |
| Others | 0.1 | |
| **Philippines** | **3.9** | |
| Republic of the Philippines (Sovereign) 3.0% 2028 | 2.0 | 1-Feb-18 |
| Others | 1.9 | |
| **Singapore** | **7.9** | |
| Puma International Finance 5.00% 2026 | 0.8 | 24-Jan-18 |
| DBS Group Holdings 1.50% 2028 | 0.7 | 11-Apr-18 |
| Others | 6.4 | |
| **Thailand** | **1.5** | |
| Kasikornbank 3.256% 2023 | 0.4 | 12-Jan-18 |
| Others | 1.1 | |
| **Viet Nam** | **0.2** | |
| **Emerging East Asia Total** | **117.0** | |
| **Memo Items:** | | |
| **India** | **4.0** | |
| Abja Investment 5.45% 2028 | **1.0** | **24-Jan-18** |
| Others | 3.0 | |
| **Sri Lanka** | **3.1** | |

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

remain in the pipeline, offshore market conditions have tightened as investors seeking higher yields are wary of buying the bonds of riskier, small, or noninvestment grade firms.

Leading the list of G3 bond issuers from the PRC was CNAC HK Finbridge, which sold USD6.4 billion worth of bonds in euros and via a multitranche US dollar sale in March. It was followed by Tencent Holdings (USD5.0 billion) and Bank of China (HK) (USD2.3 billion) with multitranche issuances of USD-denominated bonds. For the January–April period, a total of 179 new G3 bonds were issued by PRC-based issuers, the bulk of which were denominated in US dollars. The largest G3 bond issued in the PRC was Tencent Holdings' USD2.5 billion 10-year bond with a coupon rate of 3.595% in January.

G3 bond issuance in Hong Kong, China largely contributed to regional growth in the first 4 months of the year. Issuance rose 52.7% y-o-y over the same period in 2018. The largest issuer in January–April 2018 was CHMT Peaceful Development Asia Property, which issued a dual-tranche bond in April valued at USD4.1 billion. Next were Industrial and Commercial Bank of China Asia and China Cinda Finance 2017 with bonds valued at USD2.5 billion each. Out of 69 new G3 bonds issued during the review period, 44 were denominated in US dollars while 23 were issued in Japanese yen. The largest issuance from Hong Kong, China was the 1.5-year bond of CHMT Peaceful Development Asia Property valued at USD3.3 billion.

For the January–April period, G3 currency bond issuance in the Republic of Korea contracted 16.1% y-o-y to USD8.4 billion. More than one-third of G3 bond issuances in the Republic of Korea were from government agencies. In terms of size, state-owned Korea Development Bank was the largest issuer, with aggregate bond sales of USD1.5 billion. It was followed by Hanwha Life Insurance (USD1.0 billion) and Export–Import Bank of Korea (USD0.8 billion). Out of the 45 bonds issued during the review period, only one was denominated in euros and the next was in US dollars. There was no issuance in Japanese yen. The largest bond issue was the 30-year bond of Hanwha Life Insurance worth USD1.0 billion issued in April.

G3 bond issuance among the six largest economies of ASEAN, which are collectively known as ASEAN-6, climbed to USD22.8 billion in the first 4 months of 2018 from USD16.6 billion a year earlier.[10] ASEAN-6 G3 issuance accounted for nearly 20% of the total issuance of emerging East Asia during the review period. Taking the lead was Indonesia, whose G3 issuance of USD8.7 billion was the largest among all ASEAN-6 markets.

About 75% of Indonesia's aggregate G3 issuance came from the government as it issued global US dollar *sukuk* and conventional EUR- and USD-denominated bonds during the review period. Such G3 issuance is part of the Government of Indonesia's annual financing plan to complement its onshore issuance. In addition, the central bank also sells foreign exchange bills on a regular basis. The largest issue in January–April was the 10-year global *sukuk* valued at USD1.8 billion from the government. In March, the government also sold USD1.3 billion worth of global green bonds structured as *sukuk*, the first issuance of such bonds in Asia.

New G3 bonds from Singaporean issuers rose to USD7.9 billion in the first 4 months of the year, up 72.4% y-o-y from the same period a year earlier. The largest G3 bond issuer was United Overseas Bank with total issuance amounting to USD2.0 billion. Oversea-Chinese Banking Corporation was in the second spot with aggregate issuance of USD1.3 billion. Both banks issued in US dollars and euros. A total of 33 new G3 bonds were issued by Singaporean corporates. At the top of the list was Puma International Finance, an oil refining company, which issued an USD0.8 billion 8-year bond in January.

Philippine G3 bond issuers raised a total of USD3.9 billion in the first 4 months of the year, almost doubling their G3 issuance volume in the same 4-month period in 2017. The Government of the Philippines was the top issuer of G3 bonds with USD2.0 billion worth of 10-year bonds in February. The bonds carried a coupon rate of 3.0%, which was lower than the global *sukuk* of the same maturity issued by the Government of Indonesia in March with a coupon rate of 4.4%. Both sovereigns are rated investment grade by all three global rating agencies (Standard & Poor's, Fitch Ratings, and Moody's Investors Service). All G3 bond issues in the

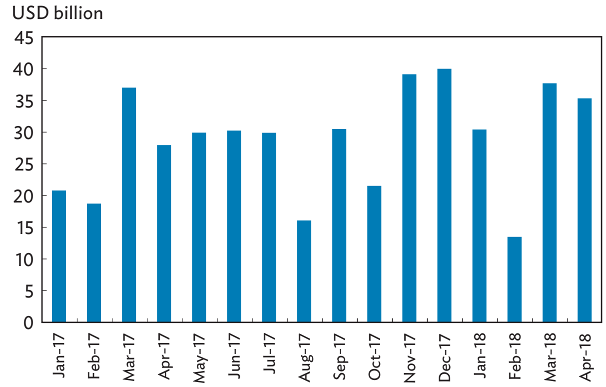
[10] ASEAN 6 comprises Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam.

Philippines during the review period were denominated in US dollars.

Issuance of G3 bonds by Thai corporates tallied USD1.5billion in January–April, climbing more than twofold from a year earlier. All issuances from Thailand were denominated in US dollars. The largest issuer was ThaiOil Treasury Center with a dual-tranche issue totaling to USD0.6 billion. Of the five new G3 bonds issued during the review period, the largest in terms of size was Kasikornbank's 5-year bond worth USD0.4 billion.

Among ASEAN-6, the only market to post a decline in G3 bond issuance during the review period was Malaysia's. Its total G3 bond issuance stood at USD0.7 billion in January–April, falling 72.3% y-o-y. All G3 bonds issued by Malaysia were from corporates and denominated in US dollars. Only three issuers tapped the G3 bond market, led by Malayan Banking Berhad, which had multiple issuances worth USD0.4 billion during the review period. The largest G3 bond issue from Malaysia was Cindai Capital's 5-year bond worth USD0.3 billion.

**Figure 7: G3 Currency Bond Issuance in Emerging East Asia**




USD = United States dollar.

Notes:

1. Emerging East Asia comprises the People's Republic of China; Hong Kong, China; Indonesia; the Republic of Korea; the Lao People's Democratic Republic; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.
2. G3 currency bonds are bonds denominated in either euros, Japanese yen, or US dollars.
3. Figures were computed based on 30 April 2018 currency exchange rates and do not include currency effects.

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

For the first time since 2014, a sole issuer from Viet Nam tapped the G3 bond market in 2018. Real estate firm No Va Land Investment Group raised USD0.2 billion of 5-year bonds in April.

On a monthly basis, G3 currency bond issuance in emerging East Asia slowed from USD40.0 billion in December to USD30.4 billion in January, and further to USD13.5 billion in February (**Figure 7**). A pick-up in issuance in March and April pushed the G3 issuance volume total for January–April. The jump in G3 issuance came after the Federal Reserve raised the US policy rate and hinted at three more rate hikes for the rest of the year. As expectations of further tightening loomed, issuers took their cue by tapping the G3 market to secure funding while borrowing costs were still low.

## The government bond yield curves of emerging East Asia rose for nearly all markets as investors closely followed interest rate movements in the US and other developments in the global economy.

Investors in emerging East Asian markets have largely taken their cues from global economic developments as well as the continued monetary policy normalization in the US. Among advanced economies, the US stands out as the sole market normalizing its monetary policy. However, signs are emerging that global economic growth has bolstered the likelihood that other economies may begin scaling back their easing measures.

The Federal Reserve has largely met market expectations and its federal funds target range hike of 25 bps on 20 March was widely anticipated. While Q1 2018 GDP growth in the US slowed to 2.2% y-o-y from 2.9% y-o-y in the previous quarter, the Federal Reserve believes that that the slowdown is only temporary and reflects transient factors such as a delay in tax refunds. The US economic growth outlook remains positive, with the Consumer Confidence Index rising from 125.6 in April to 128.0 in May, one of the highest readings since 2000. The GDP forecast of the Federal Reserve in March showed an improved growth rate of 2.7% for full-year 2018, up from 2.5% in December's forecast. Nonfarm payrolls also added 223,000 jobs in May from a revised 159,000 in April.

On 1 May, the Federal Reserve left unchanged its policy rate target but noted that the US economy continues to grow at a moderate pace and the labor market continues to strengthen.

Other advanced economies experienced a temporary slowdown in economic growth in Q1 2018, but the overall outlook remains unchanged. GDP growth in the euro area fell to 2.5% y-o-y in Q1 2018 from 2.8% y-o-y in Q4 2017. In addition, the European Central Bank (ECB) maintained its current monetary policy stance during its 8 March and 16 April meetings. However, similar to the US, the euro area's economic outlook has not been affected by the slowdown in Q1 2018. The ECB recently upgraded its GDP estimate for full-year 2017 from 2.4% to 2.5%, and its 2018 forecast from 2.3% to 2.4%. More tellingly, in its March and April meeting notes, the ECB removed past language referring to its readiness to adjust asset purchases should the economic outlook turn negative, suggesting they are more confident in the economic outlook.

In Japan, GDP performance in Q1 2018 was negative, with the economy contracting at an annualized pace of 0.6% y-o-y following an expansion of 1.0% y-o-y in the previous quarter. However, the decline is largely viewed as being due to seasonality and the Bank of Japan continues to forecast expansion in full-year 2018, recently revising its outlook upward to an annualized growth rate of 1.6% from the previous forecast of 1.4% made in January.

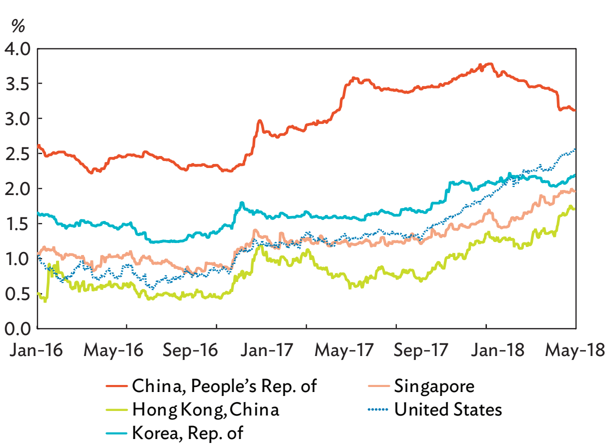
Emerging East Asia's markets and economies have been broadly in sync with that of advanced economies. Yields in emerging East Asia's bond markets have largely trended upward, tracking movements in US yields.

The sole exception has been the PRC where yields have largely fallen. Since the start of 2018, for example, there has been a steady decline in 2-year yields (**Figure 8a**). This is in contrast to the rise in yields in 2017 that was largely due to the PRC's deleveraging campaign. The fall in yields thus far in 2018 has been partially due to a shift in funds from the stock market to the bond market as investors expect the PRC's economic growth to moderate this year. Yields in the PRC were further pushed downward when the PBOC reduced the reserve requirement ratios of banks on 16 April.

Viet Nam has also experienced a decline in its 2-year yield since the start of the year (**Figure 8b**). The decline largely stemmed from increased financial liquidity after the State Bank of Vietnam reduced its open market operation rates by 25 bps on 17 January.

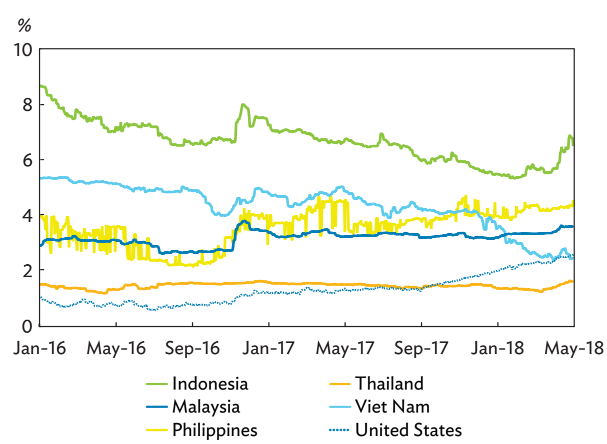
For 10-year yields, only in the PRC have yields trended downward since the start of the year (**Figure 9a**). Meanwhile, there was a noticeable rise in Hong Kong, China's and Singapore's 10-year yields, particularly after 15 April. This largely mirrored movements in the US 10-year yield, which showed a similar spike during the review period. Hong Kong, China's rise in yields also reflects domestic conditions as the Hong Kong Monetary Authority reduced liquidity following moves to strengthen the Hong Kong dollar after it hit the weak-side of its currency band.

**Figure 8a: 2-Year Local Currency Government Bond Yields**



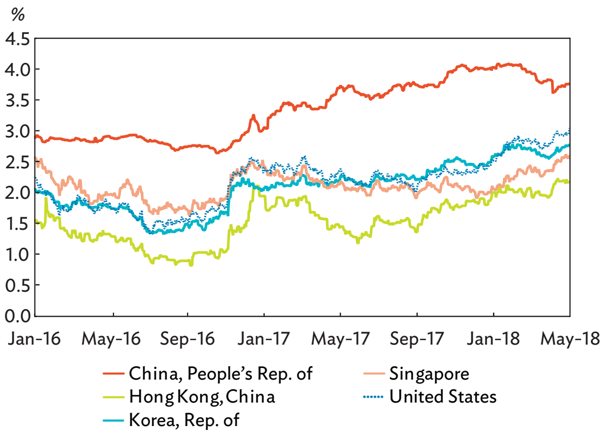

Note: Data as of 15 May 2018.
Source: Based on data from Bloomberg LP.

**Figure 8b: 2-Year Local Currency Government Bond Yields**



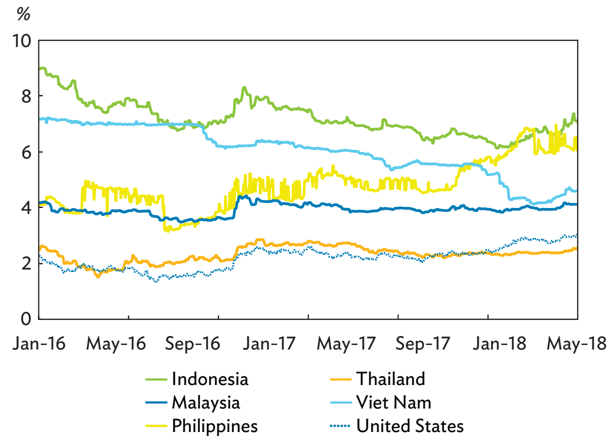

Note: Data as of 15 May 2018.
Source: Based on data from Bloomberg LP.

**Figure 9a: 10-Year Local Currency Government Bond Yields**




Note: Data as of 15 May 2018.
Source: Based on data from Bloomberg LP.

**Figure 9b: 10-Year Local Currency Government Bond Yields**




Note: Data as of 15 May 2018.
Source: Based on data from Bloomberg LP.

The spike observed in both Hong Kong, China and Singapore coincided with the release on 11 April of the Federal Reserve's March minutes, in which some participants noted that higher inflation forecasts might lead to the Federal Reserve accelerating its rate hikes.

In contrast to the 2-year yield movements, Viet Nam's 10-year yield has trended upward since the start of the year, largely mirroring the trend in other markets (**Figure 9b**).

Between 1 March and 15 May, the yield curves in emerging East Asia's bond markets largely shifted upward, following US yield movements, with the exception of the PRC, which saw its entire yield curve shift downward (**Figure 10**).

In emerging East Asia, markets continue to exhibit robust economic growth. Similar to advanced economies, some markets posted slower growth rates in Q1 2018 while others showed steady or slightly better economic growth.

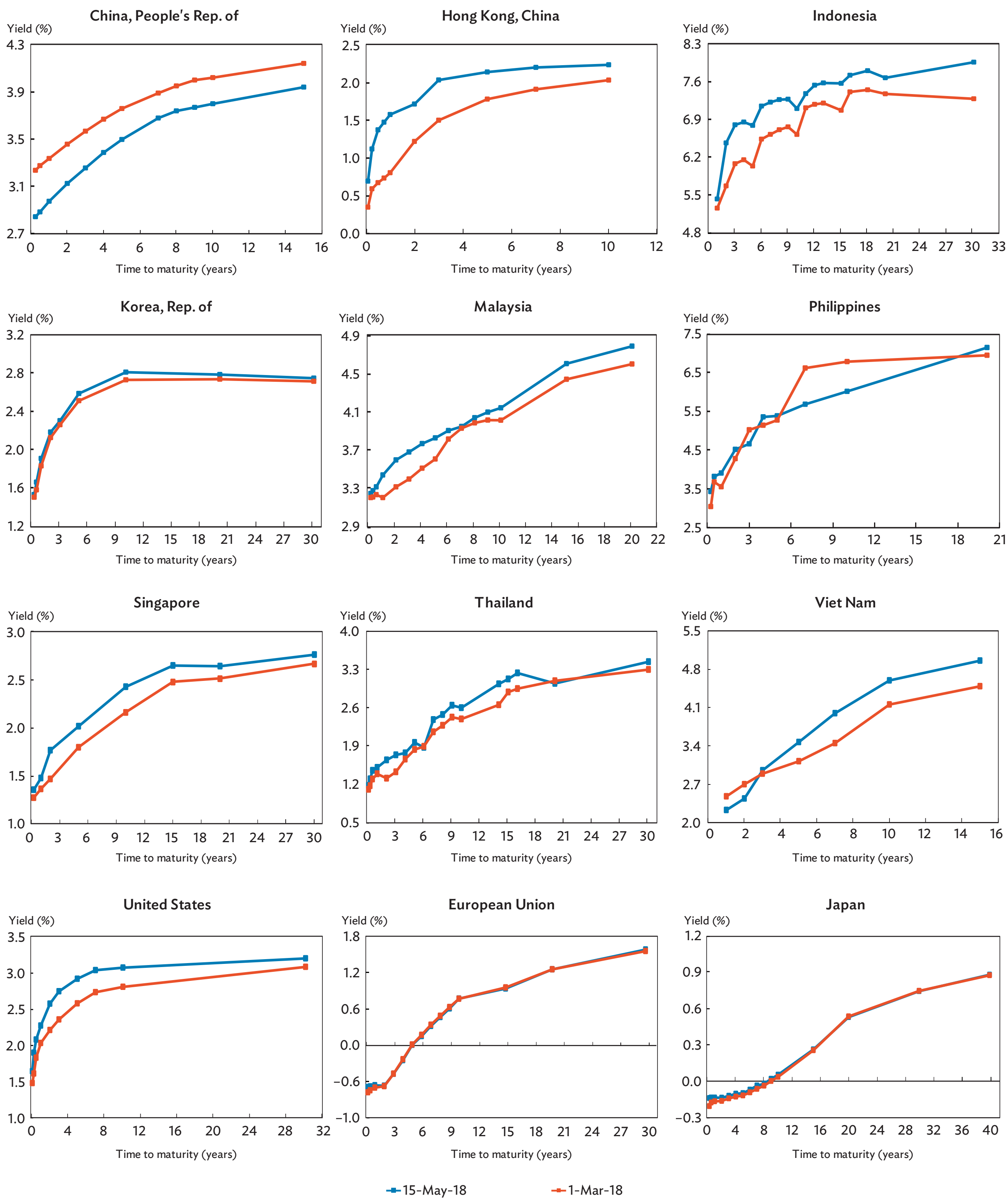
Economic growth was stable in the PRC in Q1 2018, with a GDP growth rate of 6.8% y-o-y for the second quarter in a row. The Republic of Korea's GDP was also 2.8% y-o-y in Q1 2018, the second quarter in a row. In Viet Nam, growth in Q1 2018 was at 7.4% y-o-y, up from 6.8% in full-year 2017. Hong Kong, China's GDP grew 4.7% y-o-y in Q1 2018, up from 3.4% y-o-y in Q4 2017, while the Philippines' economic growth picked up to 6.8% y-o-y from 6.5% y-o-y in the same period. In Singapore, the economy grew 4.4% y-o-y in Q1 2018, up from 3.6% y-o-y in Q4 2017, while Thailand's economy expanded 4.8% y-o-y following 4.0% y-o-y growth, respectively.

Malaysia and Indonesia had lower GDP growth rates in Q1 2018 than in Q4 2017. Malaysia's decline was the more significant, with growth falling to 5.4% y-o-y from 5.9% y-o-y. In Indonesia, GDP growth slowed marginally to 5.1% y-o-y from 5.2% y-o-y during the same period.

While economic growth in emerging East Asia was largely stable or accelerating in Q1 2018, consumer price inflation was mixed with some economies showing gains and others showing declines. In contrast, advanced economies' inflation rates were largely muted. In the Federal Reserve's March economic forecasts, its growth outlook was upgraded but expectations of inflation were largely unchanged. In the euro area, the ECB staff estimates in March showed the inflation outlook as largely unchanged, with a slight decrease in the projected inflation rate for 2019. The Bank of Japan also downgraded its inflation projection for 2018 in April.

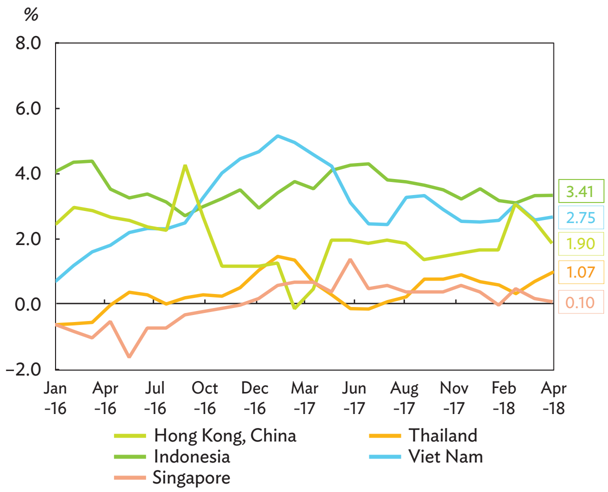
Among emerging East Asia economies, Singapore posted the lowest inflation rate in April at 0.1% y-o-y (**Figure 11a**). However, the Monetary Authority of Singapore expects inflation to edge upward and settle at the upper end of its forecasts for full-year 2018.

**Figure 10: Benchmark Yield Curves—Local Currency Government Bonds**



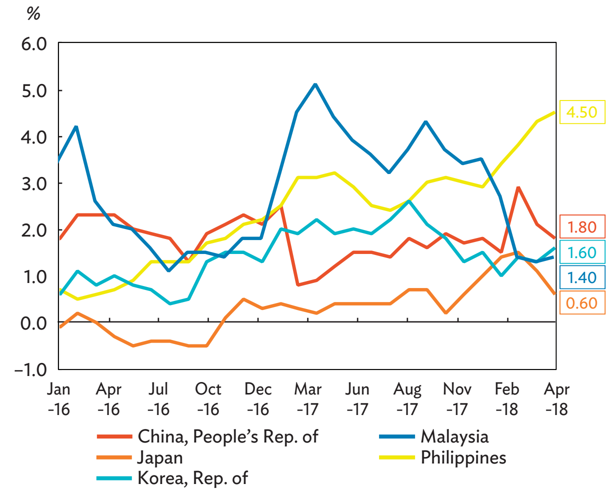

Sources: Based on data from Bloomberg LP and Thai Bond Market Association.

Figure 11a: Headline Inflation Rates




Note: Data as of April 2018.
Source: Based on data from Bloomberg LP.

Figure 11b: Headline Inflation Rates




Note: Data as of April 2018.
Source: Based on data from Bloomberg LP.

The largest rise in inflation was seen in the Philippines, where the inflation rate rose to 4.5% y-o-y in March from 4.3% y-o-y in the previous month (**Figure 11b**). The rise in inflation was largely attributed to the effects of the tax reform program that was implemented in December 2017.

Better global economic growth has provided the central banks of some emerging East Asian economies with more confidence to begin tightening monetary policy. The Bangko Sentral ng Pilipinas raised its policy rate target 25 bps on 10 May, largely in response to rising inflation (**Figure 12a**). Singapore adjusted the stance for its exchange rate to one of slight appreciation, reflecting its growing confidence in the economy's continued economic gains and expected increases in inflation.

The other markets that tightened monetary policy thus far in the second quarter of 2018 include Malaysia and Indonesia (**Figure 12b**). Malaysia raised its policy rate on 25 January. Indonesia raised policy rates twice on 17 May and 30 May. Elsewhere in Asia, other economies such as India also raised its benchmark rate in 6 June.

The exception to the regional trend was the PRC, which reduced the reserve requirement ratio imposed on financial institutions by 100 bps on 17 April. While the PBOC requires that funds released be used to repay loans from its Medium-Term Lending Facility and for lending to small and medium-sized enterprises, the market has largely taken it as a sign that the central bank may begin to ease up on its deleveraging campaign.

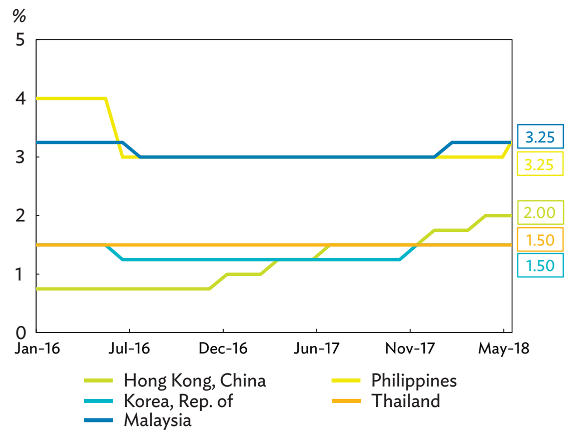
The 2-year versus 10-year yield spread fell in all markets except in the PRC and Viet Nam (**Figure 13**), and in the Republic of Korea, which was broadly unchanged.

## The AAA-rated corporate versus government yield spread fell in the PRC and Malaysia, but movements were mixed in the Republic of Korea.

While the regional economy has improved, uncertainties remain with investors making a distinction between investment grade and noninvestment grade bonds. In the PRC and Malaysia, credit spreads between AAA-rated corporates and government bonds fell between 1 March and 15 May, while movements were mixed in the Republic of Korea (**Figure 14a**).

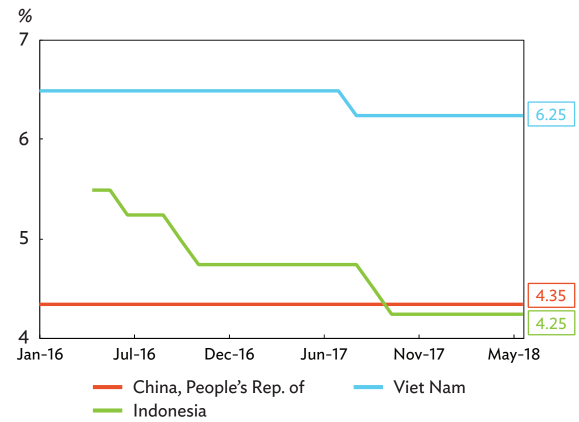
In contrast, the spread rose between AAA-rated corporate bonds and lower-rated bonds in the PRC and Malaysia between 1 March and 15 May, while falling in the Republic of Korea. In the case of the PRC, investors were concerned over a number of defaults, leading to higher risk aversion for more speculative bond investments (**Figure 14b**).

**Figure 12a: Policy Rates**



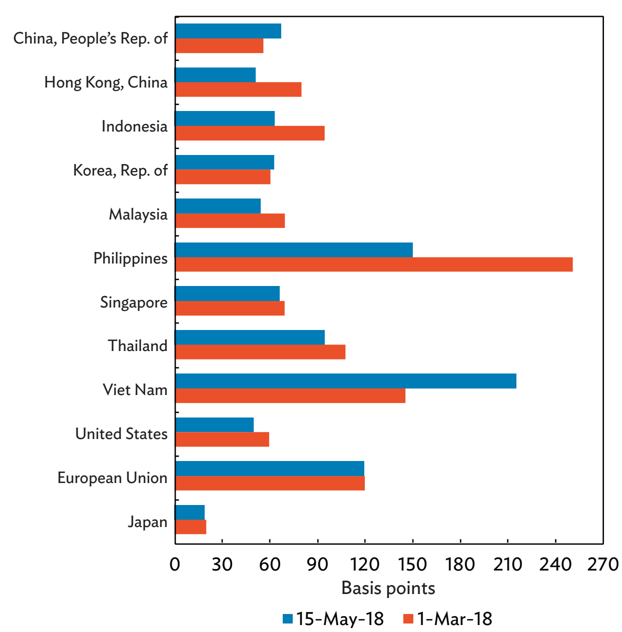

Notes:
1. Data as of 15 May 2018.
2. The policy rate of the Philippines was adjusted to 3.0% from 4.0% in June 2016 following the shift in the Bangko Sentral ng Pilipinas' monetary operations to an interest rate corridor system.
Source: Based on data from Bloomberg LP.

**Figure 12b: Policy Rates**



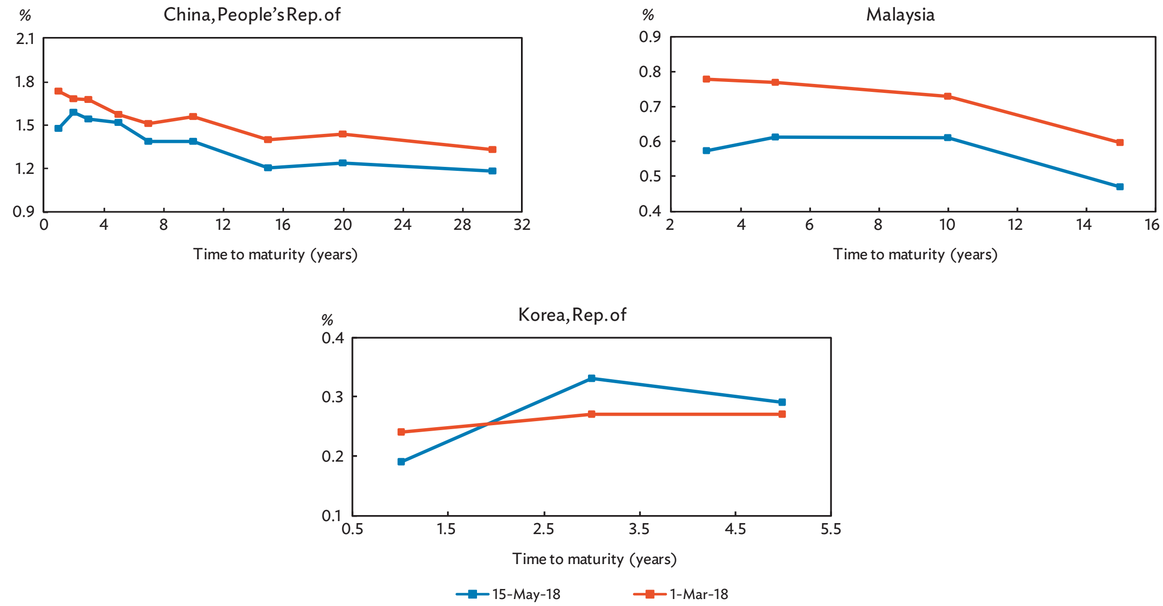

Notes:
1. Data as of 15 May 2018.
2. Bank Indonesia shifted its policy rate to the 7-day reverse repurchase rate effective 19 August 2016.
Source: Based on data from Bloomberg LP.

**Figure 13: Yield Spreads Between 2-Year and 10-Year Government Bonds**




Source: Based on data from Bloomberg LP.

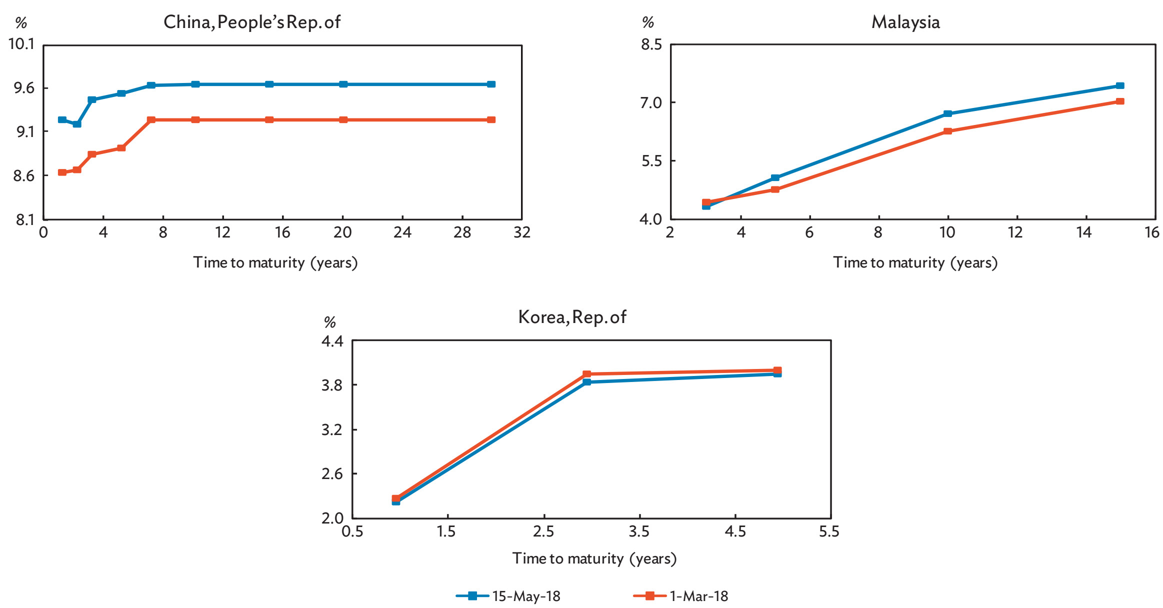
## Figure 14a: Credit Spreads—Local Currency Corporates Rated AAA vs. Government Bonds




Notes:
1. Credit spreads are obtained by subtracting government yields from corporate indicative yields.
2. For Malaysia, data on corporate bonds yields are as of 28 February and 14 May 2018.
3. For the Republic of Korea, data on government and corporate bond yields are as of 2 March 2018.

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

## Figure 14b: 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 28 February and 14 May 2018.
4. For the Republic of Korea, data on corporate bond yields are as of 2 March 2018.

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

# Policy and Regulatory Developments

## People's Republic of China

### PBOC Reduces Reserve Requirement Ratio

On 16 April, the People's Bank of China (PBOC) reduced the reserve requirement ratio of banks by 100 basis points, effective 25 April. The PBOC placed restrictions on the funds freed by the reduction, stipulating that they must be used to repay loans from the PBOC's Medium-Term Lending Facility. Leftover funds must be used for lending to small and micro enterprises.

### Government Issues New Rules on Local Government Bond Issuance

On 8 May, the People's Republic of China issued new rules governing the issuance of bonds by local governments. The new rules allow local governments to issue bonds with longer tenors, such as 15-year to 20-year bonds, and to allow bond issuances for the purpose of rolling over maturing obligations.

## Hong Kong, China

### HKMA Announces Details of the Pilot Bond Grant Scheme

On 10 May, the Hong Kong Monetary Authority (HKMA) issued a circular on the eligibility criteria for the 3-year Pilot Bond Grant Scheme (PBGS), which seeks to attract local, People's Republic of China-based, and overseas enterprises to issue bonds in Hong Kong, China. The PBGS is set to be launched upon the completion of the legislative process for the 2018/19 budget. Key eligibility criteria of the PBGS include the following:

(i) Eligible issuers are first-time issuers who have not issued bonds in Hong Kong, China in the 5-year period between 10 May 2013 and 9 May 2018, both days inclusive.

(ii) To be eligible, the bond must be issued in Hong Kong, China and have an issuance size of at least HKD1.5 billion (or the equivalent in foreign currency); it should be lodged with and cleared by the Central Moneymarkets Units or listed on the Hong Kong Stock Exchange, and should be issued to at least 10 persons (or fewer than 10 persons if none of them are an associate of the issuer).

(iii) The grant amount for each bond issue is equivalent to half of the eligible issuance expenses with a limit of HKD2.5 million if the bond, its issuer, or guarantors have received a credit rating from a rating agency recognized by the HKMA; or HKD1.25 million if none of the bond, its issuer, or guarantors have a credit rating. Each issuer can apply for a grant for two bond issuances at most.

### HKMA Supports Enhancements to the QDI Scheme

In a press release in May, the HKMA announced that it is working with the Government of the Special Administrative Region of Hong Kong, China on enhancements to the Qualifying Debt Instrument (QDI) Scheme. The enhancements include expanding the 100% profits tax exemption coverage from debt instruments with an original maturity of at least 7 years to instruments of any duration; and to allow debt instruments listed on the Hong Kong Stock Exchange to become eligible as a QDI in addition to those lodged and cleared by the Central Moneymarkets Unit.

## Indonesia

### Bank Indonesia to Increase Liquidity in the Banking System

In January, Bank Indonesia announced improvements to the average reserve requirement ratios. The central bank eased the daily minimum reserve requirement of conventional domestic banks to 4.5% of Indonesian rupiah deposits from 5.0%. The 2-week average reserve requirement was, however, raised to 2.0% from 1.5%. This new reserve requirement for domestic conventional banks will take effect on 16 July.

New reserve requirement regulations will also come into effect on 1 October for foreign exchange for conventional domestic banks and Islamic banks. For foreign exchange, the daily minimum reserve requirement for conventional bank was lowered to 6.0% from 8.0%. For Islamic banks, the daily minimum reserve requirement was reduced to 3.0% from 5.0%. In addition, a 2-week average reserve requirement of 2.0% will be implemented for foreign exchange for both conventional banks and Islamic banks.

### IDR-Denominated Bonds to Become Part of Bloomberg Barclay's Global Aggregate Index

In February, Bloomberg announced that it will include IDR-denominated bonds as part of Bloomberg Barclay's Global Aggregate Index, with effect in May. Some 50 series of IDR-denominated bonds will be added to the index, contributing to its returns by 1 June. This move is expected to boost interest in Indonesian bonds.

## Republic of Korea

### The Republic of Korea Plans KRW3.9 Trillion Supplementary Budget

In April, the Government of the Republic of Korea drafted a KRW3.9 trillion supplementary budget proposal to fund programs to support young adult employment and the promotion of local economies. Of the total, KRW2.9 trilllion has been set aside to focus on raising incomes of young adults by providing funding for their startup businesses and creating new jobs, among other projects. A budget of KRW1.0 trillion will be allotted for programs that will widen support for local enterprises. The government plans to finance the budget with KRW2.6 trillion from 2017 fiscal account surpluses and the remaining KRW1.3 trillion from public fund surpluses.

## Malaysia

### Bursa Malaysia Implements Intraday Short-Selling

Bursa Malaysia implemented the intraday short-selling (IDSS) framework on 16 April to boost liquidity in the local stock exchange. The measure is part of Bursa Malaysia's efforts to build a dynamic and vibrant capital market that will further improve flexibility for investors to refine their trading and risk management strategies. The list of approved stocks for IDSS comprises 280 securities and the list will be reviewed every 6 months. Compliance requirements and safeguards will also be put into place that include market controls for IDSS suspensions if a stock price falls more than 15% from the previous day's closing price or if the gross short-selling volume exceeds the daily maximum limit of 3% of outstanding shares per security.

## Philippines

### BSP Reduces Reserve Requirement Ratio

At its 24 May meeting, as part of its financial market reform agenda, the Monetary Board of the Bangko Sentral ng Pilipinas (BSP) made an operational adjustment by reducing the reserve requirement ratio for banks by 1 percentage point to 18.0%. The BSP had recently lowered the reserve requirement ratio to 19.0% from 20.0% in March. The gradual reduction is intended to make the BSP less reliant on reserve requirements in managing liquidity risk in the financial system. The reduction will be implemented starting 1 June 2018.

## Singapore

### MAS to Introduce Central Clearing for OTC Derivatives

On 2 May, the Monetary Authority of Singapore (MAS) announced new regulations, effective 1 October, that will require over-the-counter (OTC) derivatives to be cleared through central counterparties. The regulations are meant to mitigate the credit risk of nonstandard derivatives. The regulations will cover the widely traded Singapore and US dollar fixed-for-floating interest rate swaps, and will require banks with gross notional outstanding OTC derivative transactions exceeding USD20 billion to clear their trades with central counterparties regulated by the MAS.

### Singapore and Japan to Renew Swap Arrangement

On 4 May, the MAS and the Ministry of Finance of Japan expressed their intent to renew the existing Bilateral Swap Agreement that enables both countries to swap their respective local currencies in exchange for US dollars in times of need. The two countries are also in talks to include the Japanese yen as an additional swap currency of choice. The move to renew the arrangement is for the mutual benefit of Singapore and Japan in order to facilitate financial and economic stability and promote the use of local currency in the region. The bilateral swap arrangement will expire on 21 May.

## Thailand

### Bank of Thailand Increases Frequency of Issuance of 2-Year Bonds

In January, the Bank of Thailand raised the frequency of issuance of its 2-year bonds to monthly from the previous schedule of every even month. New issuance of 2-year Bank of Thailand bonds are scheduled for February, May, August, November, while reopenings are scheduled in the months between each new issuance. The maximum issue size for a 2-year bond was also reduced to a range of THB15 billion–THB40 billion due to the increased frequency of issuance. The revision to the issuance plan was made to help ease liquidity conditions. The Bank of Thailand issues bonds for the management of money market liquidity.

## Viet Nam

### State Securities Commission Issues New Margin Lending Policy

Viet Nam's State Securities Commission issued a draft regulation requiring the initial margin ratio to be at least 60%, effective 1 February. The margin ratio of 60:40 means that investors have to deposit 60% of the purchase price and are allowed to borrow the remaining 40% from the broker. The regulation aims to reduce potential risks in the stock market and restrain credit growth in the banking and financial sector. At the same time, a credit slowdown could affect the growth momentum of the stock market.

# The Role of Greenness Indicators in Green Bond Market Development: An Empirical Analysis

## Introduction

The green bond market has grown rapidly since the first Climate Awareness Bond was issued by the European Investment Bank in 2007. According to the Climate Bonds Initiative (CBI), total global green bond issuance reached USD155.5 billion in 2017. A key catalyst of green bond market development was the introduction in January 2014 of the Green Bond Principles (GBP), which helped define whether a bond is green or not, by the International Capital Market Association (ICMA).

Although the green bond market has expanded substantially, Ehlers and Packer (2017) show that the market for green bonds is nevertheless still very small compared to the wider global bond market, representing less than 1.6% of global debt issuance in 2016. One major cause of underdevelopment is the lack of a universally accepted definition for green bonds, as well as commonly recognized standards and regulations, which hampers the expansion of the nascent market. According to Ehlers and Packer (2017), although the GBP and the CBI's Climate Bonds Standard serve as general guidelines to distinguish between green bonds and conventional bonds, the green bond market lacks enforcement mechanisms and widely acknowledged consistent standards across markets to regulate green bonds. This leads to heterogeneity among green bonds and also causes doubts about the greenness of some green bonds in the market.

The lack of commonly recognized standards in the green bond market has limited the universe of institutional investors who are ethically mandated to invest in green bonds. According to a *Wall Street Journal* interview of green bond market practitioners, many investors face a relatively limited asset universe even though the green bond market is growing fast.[11] Some investors will just target labeled green bonds or the leading issuers of green bonds. Such a phenomenon underlines a vital missing component in the development of the green bond market: a commonly acknowledged greenness standard. Ethically mandated investors could more easily associate green bonds with bonds that finance investments with a positive effect on the environment. If the green bond market functions smoothly enough for investors to assess the greenness of a bond, demand from ethical investors would be more efficiently allocated to green projects and contribute to environmental benefits. If the market is efficient, more demand would be directed to greener projects, lowering financing costs for these issuers, which in turn would encourage more environmentally friendly investments.

The green premium is defined as the yield difference between a green bond and an equivalent conventional bond from the same issuer. The empirical evidence on the existence of a green premium is mixed. While Zerbib (2017), Barclays (2015), and Ehlers and Packer (2017) found a yield discount on green bonds, Östlund (2015) did not find any significant difference between green bonds and conventional bonds. Such mixed results partly reflect heterogeneity among green bonds due to the lack of a universally accepted greenness standard in the market. If the negative green premium is mainly driven by excess demand from investors herding into a small subgroup of green bonds, it may indicate that the green bond market still needs to further improve so as to efficiently direct and diversify green bond demand to a broader base of qualified green projects and foster more environmentally friendly economic activities.

Against this backdrop, this paper is the first empirical study that incorporates the greenness information of green bonds in the analysis of green bond pricing mechanisms. This study thereby contributes to the existing literature by extending our understanding of whether greenness is priced in the green bond market,

[11] G. Cowan. 2017. Investors Warm to 'Green Bonds'. *Wall Street Journal*. 9 April. https://www.wsj.com/articles/investors-warm-to-green-bonds-1491790201.

and if so, how greenness affects the pricing of green bonds. This paper also sheds lights on important policy dimensions such as how market arrangements, including external reviewers and green bond standards (labels or certificates), could foster investments in qualified green bonds and thus lower issuer financing costs.

This study employs a sample of 60 investment grade GBP-labeled green bonds and follows the matching procedure in Zerbib (2017) by pairing each green bond with a conventional bond. Each pair has identical characteristics—such as issuer, currency, credit rating, bond structure, and maturity—to control for common factors that affect bond yield. In the entire sample, we documented, on average, there is no significant premium on green bonds over the conventional bonds. Controlling for other pricing factors, we document that having an independent reviewer leads to a green discount of about 7 basis points (bps). In addition, a green premium of −9 bps was documented for the small group of bonds that obtain CBI certification.

Our results have several implications. First, adjusting for various pricing factors, green bonds, on average, are not traded at a premium compared with conventional bonds. This suggests that despite the market's relatively small size and low liquidity, the green bond market has had some success in drawing ethical investors, who are less yield-driven, to green issues. Second, since investors face information asymmetry in assessing the greenness of green bonds, a proper market mechanism such as an independent external reviewer or a commonly recognized green bond standard could mitigate their information costs and direct demand to environmentally friendly projects. Such a mechanism would help the green bond market function better. Third, and related to the second implication, continued development of the green bond market requires widely accepted green bond standards; a well-functioning external reviewer practice would also benefit the market. For example, the recent release of the Association of Southeast Asian Nations' Green Bond Standards in November 2017 highlighted efforts to foster development in the region's green bond market.[12]

This study is organized as follows. Section II is devoted to understanding the building blocks of the green bond market and outlines the market's underlying operational logic. Section III reviews current literature on the green bond premium. Section IV first describes the research method and sample construction. It then presents the empirical evidence that uncovers differences between green bonds and conventional bonds, and explores the possible determinants of the green bond premium. Section V discusses possible policy implications that relate to green bond market development.

## Attributes of the Green Bond Market

Green bonds are fixed income securities that exclusively fund green projects with environmental or climate-related benefits. They combine both financial and environmental risk into a financial product. Green bonds have been gaining more attention as an innovative financial instrument to mitigate the negative impacts of human economic activity on climate change. Specific criteria and requirements that underpin the concept of green bonds are best described in the GBP issued by the ICMA (ICMA 2017). The GBP are voluntary process guidelines that outline general criteria that most certification schemes follow. They were put together by major private financial institutions under the aegis of the ICMA. The GBP provide prospective issuers with guidance on the four key elements of green bond issuance: (i) use of proceeds, (ii) process for project evaluation and selection, (iii) management of proceeds, and (iv) reporting. Though external review is not a part of the four key elements of the GBP, it was recommended in the 2015 edition of the GBP that green bond issuers "use external assurance to confirm alignment with the key features of green bonds."[13]

Once green bonds are issued in accordance with the GBP, they are subject to reporting. If the proceeds from green bonds are not utilized in the green projects that are suggested in the pre-issuance reports within 24 months of issuance, then the bonds lose their green status (Petrova 2016). Since investors often do not have reliable data and analysis on the environmental impacts of green bonds, they may use their own criteria to ensure the greenness of their investment portfolios by referencing green bond labels or indexes. The green bond market

[12] Association of Southeast Asian Nations (ASEAN) Capital Markets Forum. 2017. *ASEAN Green Bond Standards*. http://www.theacmf.org/ACMF/upload/ASEAN_Green_Bond_Standards.

[13] This includes second opinions and verifications. From 2016, the GBP referred to "external reviews" rather than "external assurance," while the list of recommended external reviews was expanded to include those provided by rating agencies (ICMA 2017).

aims to channel a significant amount of funds into environmentally friendly projects. This section briefly reviews the attributes of the key building blocks of the green bond market.

## Issuers

Green bonds are broadly similar to conventional bonds, except for the fact that their proceeds are earmarked exclusively for investment in green projects with environmental benefits. One notable difference, however, is that green bonds are generally less liquid than conventional bonds. This is because most green bond investors are long-term ethical institutional investors with environmental and social mandates, and they are seeking incentives to protect themselves against inflation risk, default risk, and market volatility. Therefore, many green bonds offer various documents certifying greenness as well as tax privileges, guarantees, and letters of comfort in order to attract more investors (Veys 2010).

Green bond issuers also incur substantial costs to remain green. Specifically, issuers need to bear the cost of providing scheduled reports and recurring R&D expenditure to go green, which can be especially burdensome to small-sized green bond issuers. Due to growing concerns about environmental risks associated with corporate operations, reporting on greenhouse gas emissions is becoming a requirement rather than an option.[14]

When a green bond and a conventional bond are both issued by the same issuer, the risk profiles of a green bond are essentially identical to those of a conventional bond. While the proceeds from the issuance of a green bond are earmarked for environmentally friendly projects, green bonds can be serviced with cash flows generated from the entire operations of the issuer—not just the green project.

## Investors

Recent years have witnessed steadily growing demand for green assets. Green bonds are an important asset class for ethical investors whose portfolio objectives include environmental targets. For green bonds, ethical investors are usually institutional investors such as mutual funds, exchange-traded funds, insurance companies, pension funds, investment banks, international organizations, and governments. Many ethical investors have clear environment-related investment mandates and are less return-sensitive. These investors need to review the green reports provided by issuers to make appropriate green bond investment decisions.

Many investors in the green bond market tend to be long-term investors. It is costly for investors to identify suitable investment targets. This is because the limited universe of green bonds leaves fewer investment choices. There are not enough green bonds offered to meet the increasing demand for green bonds. The imbalance between supply and demand is evident in the widely observed oversubscriptions for green bonds. Due to robust and growing demand, green bonds are priced more tightly than conventional bonds (CBI and International Finance Corporation 2017). This stable and diversified investor base in the green bond market helps motivate corporate issuers to go green, despite the expenses associated with green bond issuance.

Although the empirical evidence on the existence of a green bond premium is mixed, it is intuitively plausible that ethical investors hold green bonds out of preference for the social or environmental benefits underlying green bonds. Given identical risk levels as conventional bonds, such a preference would lead to lower yields, which is a cost that ethical investors will bear in exchange for social or environmental value. Thus, the green bond market works by rewarding green issuers by lowering financial costs based on demand from ethical investors. Such a mechanism offers a channel by which financial markets can help monetize the social benefits of green projects and efficiently allocate resources.

However, due to the lack of a widely recognized standard on the quality of green projects, deadweight cost in the form of information asymmetry directs green bond investors to a limited group of leading green bonds or green bonds meeting certain standards. Such excess demand for a small group of bonds may not only substantially lower the yields and dent the return and portfolio diversification of ethical investors, but may also exclude many green projects with environmental benefits from the investment universe. Similar to accounting

[14] Standard & Poor's (2016) introduced the Carbon Disclosure Project (optional) on behalf of 827 institutional investors managing USD100 trillion in assets. In 2013, the Government of the United Kingdom required that all United Kingdom-listed companies report on their greenhouse gas emissions.

standards or credit ratings, a widely recognized standard and evaluation on greenness is essential for the development of the green bond market.

### Other Participants

For green bond issuance, there are four other institutions involved in addition to issuers and investors. They are the underwriters, external reviewers, index (label) providers, and market intermediaries. The underwriters are the financial institutions that deal with the public and private issuance and distribution of the bond. The terms, definitions, and obligations of the bond shall be specified by the underwriters. The role of the external reviewers is to verify the greenness of the underlying projects. The index (label) providers are not directly involved in the issuance and distribution of the bond. However, they create green bond indexes (or labels) according to certain standards. In practice, the inclusion of a green bond in a widely recognized index (or label) adds an extra layer of credibility for investors. Lastly, other market intermediaries help to facilitate trading since most green bonds are traded over the counter (Östlund 2015).

In the following section, a green bond premium relative to conventional bonds will be analyzed empirically. Characteristics of a green bond that may influence a green bond premium have implications for the pricing of green bonds and their attractiveness for investors. For instance, a yield discount at issuance over comparable bonds with a green label would indicate that a significant number of investors value the green label, which provides issuers with extra incentives to issue green bonds.

## Current Knowledge about a Green Bond Premium

Apart from the fact that green bonds need to comply with the GBP and meet the requirements suggested by the CBI, VanEck (2017) and Östlund (2015) argue that they are not much different from conventional bonds. This is especially true in primary markets where brokers have to sell green bonds to a large pool of investors buying both green bonds and conventional bonds. Standard & Poor's (2016) shows that the trading yields for conventional bonds and green bonds are similar. In secondary markets, the only way for investors to be assured that the bonds they are buying are truly green is to check the binding guidelines by which green bonds are issued and maintained. The green bond label is considered by investors as a key criterion for reducing information costs and selecting bonds. However, the existing empirical evidence on whether a green bond premium exists or not has been mixed.[15]

### The Green Bond Premium Exists

In order to investigate the existence of a green bond premium, Zerbib (2017) used a matching method, comparing each eligible green bond with two similar conventional bonds with identical conditions such as currency, rating, bond structure, seniority, collateral, and coupon type. He started out with 681 green bonds in compliance with the GBP on 30 December 2016. After removing outliers and incomplete data, only 135 investment-grade, senior, bullet, fixed-coupon bonds were selected for the analysis. Zerbib (2017) further identified the determinants of the green bond premium, finding that the average green bond premium was −8 bps against conventional bonds within the whole sample of investment-grade bonds, −5 bps among USD-denominated bonds, and −2 bps among EUR-denominated bonds. He attributed the negative green bond premium to the presence of excess demand for green bonds in the market.

Ehlers and Packer (2017) compare the credit premium at issuance of a cross-section of 21 green bonds issued during 2014–2017 to conventional bonds with the same issuers at the closest possible issuance date. They show that green bond issuers on average have borrowed at lower costs than they have through conventional bonds. Barclays (2015) conducted a cross-sectional analysis as of mid-2015 and found a green bond premium of −17 bps. His findings thus confirm the existence of a green discount (i.e., negative premium), as do the findings of Zerbib (2017) and Ehlers and Packer (2017).

### The Green Bond Premium Does Not Exist

Östlund (2015) used a data set of 28 matching pairs of bonds from Bloomberg on 17 March 2015 and investigated the existence of a green bond premium

[15] VanEck (2017) simply summarizes the discussion by saying that the existence of a green bond premium is not a black-or-white issue.

defined as the spread differentials between green bonds and conventional bonds by the same issuer. In testing the null hypothesis that there are no differences between green bonds and conventional bonds, he did not reject the null hypothesis and finds no evidence of either a positive or negative green bond premium.

Petrova (2016) conducted both panel-regression analysis and time-series analysis to evaluate and compare the performance of green bonds and conventional bonds during a sample period covering 2008–2016. After controlling for various possible factors such as default risk and term premium, and different time-series parameters, no statistically significant difference between green bond and conventional bond yields was documented.

## Empirical Analysis

In this section, we describe the data and methodology for our empirical analysis and the main empirical findings.

### Sample Construction

This study collected data on all green bonds issued from 2010 to 2017 from Bloomberg on 31 December 2017. Using the green bond function in Bloomberg ensures that all green bonds comply with the GBP. Bond pricing data such as bid and ask yields; bond basic information such as issuer, credit rating, issue amount, maturity time, issue date, denominated currency, and coupon type; and bond structure attributes such as seniority, option clause, and collateral were collected from Bloomberg.

In the first step, green bonds with a noninvestment grade, a zero coupon, a floating coupon, or option clauses were excluded. Then a matching process similar to Zerbib (2017) was adopted to identify the equivalent (or synthetic) conventional bond for the remaining green bonds. For each green bond, all conventional bonds issued by the same issuer were identified. They were then screened for the same currency, credit rating, and maturity as well as bond structures (e.g., coupon type, seniority rank, and collateral terms) as the green bond. Since issue date cannot be controlled, this study chose the screened conventional bond with the closest issue date as the green bond but limited the issue date difference between green bonds and screened conventional bonds to within a 6-year interval, following Zerbib (2017). Such a screening leaves a sample of 60 investment-grade, senior, bullet, fixed-coupon, green and conventional bond pairs that share roughly equivalent conditions. The sample thus consists of monthly bond yields and these 60 pairs of bonds, total of 1,365 bond-month observations.

Such a matching procedure serves as a useful model-free technique to analyze the specificity of a financial instrument by pairing a benchmark instrument with other controlling characteristics to highlight the effect of the variable of interest. In line with Zerbib (2017), the sample is constructed to evaluate the yield spread between a green bond and its equivalent conventional bond. For each pair, the green bond and its synthetic conventional bond share identical characteristics except for greenness and liquidity features.

**Table 1** compares the prices and issuance amounts of the 60 paired green bonds and conventional bonds in the sample. While the bid and ask yields do not show statistically significant differences between green bonds and their synthetic conventional bonds, green bonds have significantly lower coupon rates and smaller issuance amounts.

**Table 2** lists the average issuance amount, converted to United States (US) dollars, of green bonds and conventional bonds issued in various denominating currencies. It shows that the average issuance amounts of green bonds and conventional bonds vary across currency, which suggests that green bond market depth also varies across currencies. For example, while the average issuance amount for green bonds in US dollars is USD1.0 billion, that of conventional bonds is USD1.3 billion. As for pound sterling, while the average issuance amount for green bonds is USD2.0 billion, that of conventional bonds is USD5.5 billion. Therefore, when empirical models are specified to identify the determinants of a green bond premium, a bond's denominating currency should be considered.

**Table 3** shows the average ask yield of green and conventional bonds across credit ratings and currency denominations. While there is significant variation in yield levels across currencies, credit ratings are not necessarily monotonically related to bond yields. This may reflect different demand levels for various credit ratings.

**Table 1: Descriptive Statistics**

| Variable | N | Mean | Median | Standard Deviation | Minimum | Maximum | Mean Difference (p-value) |
|---|---|---|---|---|---|---|---|
| AskYLD (%) | 1,365 | 1.68 | 1.47 | 1.92 | −0.67 | 12.98 | 0.5559 |
| AskYLD_M (%) | 1,365 | 1.64 | 1.41 | 1.88 | −0.66 | 12.40 | |
| BidYLD (%) | 1,365 | 1.76 | 1.56 | 1.95 | −0.49 | 13.60 | 0.5702 |
| BidYLD_M (%) | 1,365 | 1.71 | 1.45 | 1.92 | −0.52 | 13.12 | |
| CPN (%) | 1,365 | 2.26 | 1.88 | 1.73 | 0.13 | 8.50 | <.0001 |
| CPN_M (%) | 1,365 | 3.43 | 3.13 | 1.74 | 0.63 | 10.50 | |
| AmtIssued (USD billion) | 1,365 | 1.10 | 0.60 | 1.12 | 0.07 | 6.00 | <.0001 |
| AmtIssued_M (USD billion) | 1,365 | 1.67 | 1.20 | 1.72 | 0.02 | 7.53 | |

USD = United States dollar.
Source: Authors' calculations.

**Table 2: Average Issue Amount by Currency**

| Currency | Average Issued Amounts in USD | |
|---|---|---|
| | Green Bond | Conventional Bond |
| AUD | 1,054,764,930 | 831,081,074 |
| CAD | 1,233,025,000 | 3,977,500,000 |
| CHF | 359,240,000 | 282,260,000 |
| EUR | 1,296,091,215 | 1,987,603,898 |
| GBP | 1,999,924,000 | 5,547,086,500 |
| INR | 243,350,000 | 233,930,000 |
| MXN | 106,890,000 | 269,770,000 |
| TRY | 72,407,500 | 22,380,500 |
| USD | 1,000,441,501 | 1,275,529,801 |
| Mean | 818,459,350 | 1,603,015,753 |
| Median | 1,000,441,501 | 831,081,074 |

AUD = Australian dollar, CAD = Canadian dollar, CHF = Swiss franc. EUR = euro, GBP = Pound sterling, INR = Indian rupee, MXN = Mexican peso, TRY = Turkish Lira, USD = United States dollar.
Source: Authors' calculations.

## Research Method

This study measures the green premium in line with Zerbib (2017). The first step is to obtain the yield spread between a green bond and its synthetic conventional bond. Since this study focuses on the investors' demand and the issuers' supply of green bonds, the yield spread is the difference between the ask yields of each bond for a particular pair. As implied in the above matching procedure, common risk factors such as default risk and term premium have been controlled, except for the fact that the conventional bond market is much larger and more liquid than the green bond market. Such a difference in liquidity between the two bond markets might produce a liquidity bias in the above yield spread. A substantial difference in liquidity can

**Table 3: Average Ask Yield by Currency and Rating**

| Variable | Average Ask Yield (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Green Bond Rating | | | | Conventional Bond Rating | | | |
| | AAA | AA | A | BBB | AAA | AA | A | BBB |
| AUD | 2.39 | 3.10 | | | 2.54 | 2.97 | | |
| CAD | | | 1.90 | | | | 1.75 | |
| CHF | 0.01 | | | | 0.02 | | | |
| EUR | 0.20 | 0.61 | 0.40 | 0.76 | 0.21 | 0.48 | 0.42 | 0.51 |
| GBP | 0.99 | | | | 0.82 | | | |
| INR | 5.73 | | | 6.76 | 5.57 | | | 6.79 |
| MXN | 5.20 | | | | 4.73 | | | |
| TRY | 10.29 | | | | 10.04 | | | |
| USD | 1.76 | 1.95 | 2.45 | 1.78 | 1.70 | 1.92 | 2.34 | 2.13 |

AUD = Australian dollar, CAD = Canadian dollar, CHF = Swiss franc. EUR = euro, GBP = Pound sterling, INR = Indian rupee, MXN = Mexican peso, TRY = Turkish Lira, USD = United States dollar.
Source: Authors' calculations.

have a considerable effect on the yield level and must therefore be controlled.

Thus, in the next step, this liquidity bias is eliminated from the yield spread. In doing so, the yield spread is regressed on the bid–ask spread, a proxy of liquidity. Following Zerbib (2017), the green bond premium is defined as the residual from this regression. This residual is a part of the yield spread that cannot be explained by different liquidity situations between green bonds and conventional bonds. After controlling for the liquidity difference between the conventional and green bond markets, the liquidity-adjusted green bond premium captures how the market prices greenness, which is now the difference between the two paired assets.

Following Zerbib (2017), **Table 4** shows that estimated results from both ordinary least squares and fixed-effects generalized least squares estimations. The bid–ask spread proxy, which is used to control for differences in market liquidity, is positive and statistically significant, which suggests that lower liquidity (higher bid–ask spread) is compensated in the market with a liquidity premium.

**Figure 15** shows the distribution of the green bond premium. It is seen that after controlling for liquidity, the green bond premium is concentrated around zero ranging from −0.91% to 0.87% using the ordinary least squares (OLS) estimation method and from−0.92% to 0.85% using the fixed-effects generalized least squares (FEGLS) estimation methods.[16] The mean of the liquidity-adjusted green bond premium is close to zero and its median is −0.4 bps. Thus, on average, there is no economically significant green discount documented among the sample bonds.

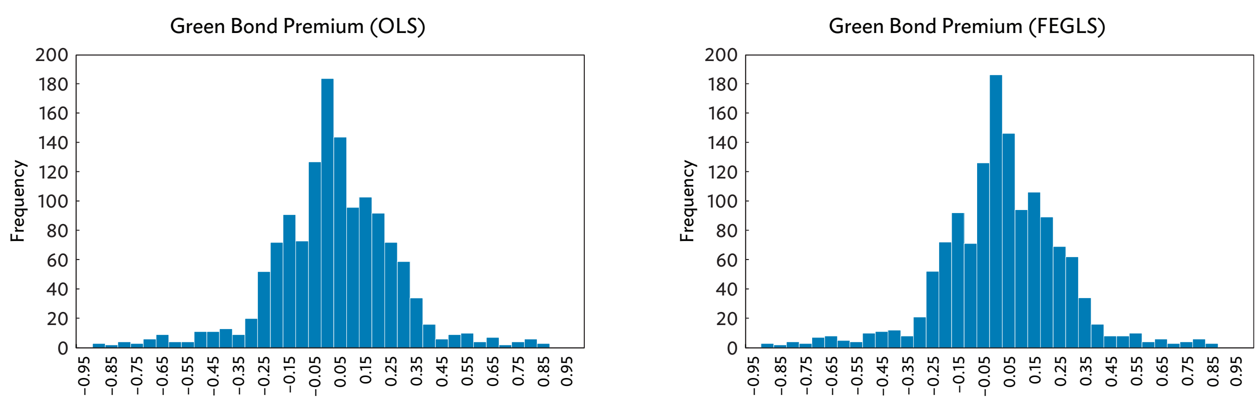
This study aims to empirically identify various factors that influence the estimated green bond premium. In particular, we are interested in whether greenness may contribute to a lower premium because it can enhance investor confidence and substantially lower the information costs of investors regarding the quality of green bonds. While there is no commonly acknowledged indicator of greenness, this analysis extends the existing literature by incorporating into the analysis two variables

**Table 4: Step 1 Regression—Obtaining the Green Bond Premium**

| Dependent Variable: Ask Yield Spread | | |
|---|---|---|
| | OLS | FEGLS |
| | (1) | (2) |
| Liquidity | 1.530*** | 1.380*** |
| | (14.537) | (19.562) |
| Intercept | 0.04*** | 0.04*** |
| | (6.363) | (23.203) |
| Observations | 1,365 | 1,365 |
| R-squared | 0.134 | |
| Adjusted R-squared | 0.134 | |
| Wald $\chi^2$ | | 382.70 |

FEGLS = fixed-effects generalized least squares, OLS = ordinary least squares.
Notes:
1. *** denotes significance at 1% level.
2. Robust t statistics in parenthesis.
Source: Authors' calculations.

**Figure 15: Distribution of Green Bond Premium**




FEGLS = fixed effects generalized least squares, OLS = ordinary least squares.
Source: Authors' calculations.

[16] The estimates generated by both OLS and FEGLS are very similar and highly correlated, with a correlation coefficient of 0.99.

that may contain information about the greenness of a bond.

The first greenness indicator is whether a green bond has an independent reviewer. Since all the sample green bonds are labeled as a green bond by Bloomberg, these bonds would have undergone review and research by Bloomberg New Energy Finance. Also, the issuer has provided the required term sheet or prospectus containing a "use of proceeds" disclosure that aligns with the market accepted categories set by Bloomberg New Energy Finance. While the GBP recommend that issuers seek an external (independent) reviewer to confirm alignment with green bond standards, not all issuers have had an independent reviewer for their bonds. Thus, those bonds with an independent reviewer would give more confidence to potential investors. Information on independent reviewers is collected from the CBI and a dummy variable (INDREV) is set to 1 if a green bond has had an independent review, or zero otherwise.

Our second greenness indicator is whether a green bond obtains a certification issued by the CBI. The CBI manages the Climate Bonds Standard and Certification, an international certification scheme for green bonds. The scheme includes robust frameworks for monitoring, reporting, and ensuring conformance with the Climate Bonds Standard. Its key features include full alignment with the GBP and certification by an independent Climate Bonds Standard Board, among others. The Climate Bonds Standard Board provides oversight to the development of the standard. The Climate Bonds Standard has pre-issuance and post-issuance requirements that need to be met by issuers seeking certification. In both stages, issuers are required to obtain independently approved Climate Bond Verifiers, who will assess whether a bond complies with the requirements of the Climate Bonds Standard. Empirically, a dummy variable (CBICTF) is constructed to indicate whether a green bond has obtained certification from the CBI. CBICTF is equal to 1 if a green bond has CBI certification, or zero otherwise. Since it is costly to obtain an independent reviewer and CBI certification, in a well-functioning green bond market it is intuitive to expect that these green bonds can be compensated with a lower financing cost, or a yield discount, for going green because these additional steps substantially lower ethical investors information costs and attract more demand.

To investigate whether green quality indicators such as an independent reviewer or CBI certification affect a green bond premium, this study controls for other risk factors that may affect the level of the premium. Specifically, control variables include issuance size, maturity, issuance currency, credit rating, and sector. The issuance amount is expressed in billions of US dollars as of 31 December 2017, and bond maturity is expressed in years. To reflect the possible nonlinear effects of issuance size and maturity, this study follows Zerbib (2017) by including a squared term of both issuance amount and maturity. To capture the effects of credit rating and issuance currency, as well as sector effects, a list of dummy variables are constructed, including four credit rating dummies for AAA, AA, A, and BBB ratings; three currency dummies for US dollars, euros, and non-US dollar and non-euro currencies; and three sector dummies for financial, utility, and other sectors.[17] Finally, since the green bond premium is a part of the ask yield, the ask yield is included to control for the yield level. **Table 5** lists the summary statistics of the key variables in the analysis. The model specification for empirical tests is listed below and estimated using a panel fixed effects regression:

$$GreenPrem_i = \alpha_0 + \alpha_1\, Greenness_i + \alpha_2\, Control_i + \eta_i \qquad (1)$$

## Empirical Results

The empirical results are reported in **Table 6** and **Table 7**. Most significantly, an independent review and CBI certification can significantly lower the green bond premium by 6.6 bps and 8.6 bps, respectively, for the OLS-estimated green premium, and by 6.7 bps and 8.7 bps, respectively, for the FEGLS-estimated green premium. This evidence indicates that a greenness indicator that enhances investor confidence and information quality can lower the issuer's financing costs. Given other conditions, investors will tolerate a relatively lower yield for greener projects.

The results for control variables are also interesting. There is consistent evidence that larger issues tend to have a lower green bond premium for better liquidity for a particular bond. The green bond spread is positively related to maturity, implying a positive term premium in the green bond market. However, this term premium grows more slowly as the maturity gets longer as the

[17] Level 1 Bloomberg classification (BICS level 1) is used for sector groups.

**Table 5: Summary Statistics of Key Variables**

| Variable | N | Minimum | Mean | Median | Maximum | Standard Deviation |
|---|---|---|---|---|---|---|
| Prem_ols (%) | 1365 | −0.91 | 0.00 | 0.00 | 0.87 | 0.24 |
| Prem_gls (%) | 1365 | −0.92 | 0.00 | 0.00 | 0.85 | 0.24 |
| INDREV | 1365 | 0.00 | 0.68 | 1.00 | 1.00 | 0.46 |
| CBICTF | 1365 | 0.00 | 0.06 | 0.00 | 1.00 | 0.24 |
| Maturity | 1365 | 2.04 | 6.49 | 5.50 | 15.53 | 2.76 |
| Maturity_SQ | 1365 | 4.17 | 49.76 | 30.27 | 241.06 | 44.52 |
| ASKYLD (%) | 1365 | −0.67 | 1.68 | 1.47 | 12.98 | 1.92 |
| EUR | 1365 | 0.00 | 0.39 | 0.00 | 1.00 | 0.49 |
| USD | 1365 | 0.00 | 0.33 | 0.00 | 1.00 | 0.47 |
| Financial | 1365 | 0.00 | 0.25 | 0.00 | 1.00 | 0.44 |
| Utilities | 1365 | 0.00 | 0.14 | 0.00 | 1.00 | 0.35 |
| ISSAMT | 1365 | 0.07 | 1.10 | 0.60 | 6.00 | 1.12 |
| ISSAMT_SQ | 1365 | 0.01 | 2.46 | 0.36 | 36.00 | 5.92 |
| RATING_AA | 1365 | 0.00 | 0.21 | 0.00 | 1.00 | 0.41 |
| RATING_A | 1365 | 0.00 | 0.22 | 0.00 | 1.00 | 0.42 |
| RATING_BBB | 1365 | 0.00 | 0.14 | 0.00 | 1.00 | 0.35 |

Note: Nonlinearities such as $Maturity_i^2$ (Maturity_SQ) and $Issued\ Amount_i^2$ (ISSAMT_SQ) are incorporated in the specification based on Zerbib (2017).
Source: Authors' calculations.

negative sign on maturity squared indicates, which justifies the nonlinearity of a term premium. As a part of asking yield, a higher asking yield is intuitively positively related to a green bond premium. In terms of currency, EUR-denominated green bonds tend to have a significantly lower green bond premium compared to green bonds in other currencies. There are differences across sectors as well. In particular, the utilities group shows a significant 10–15 bps green premium. In line with Table 3, credit rating is not monotonically related to the green premium. This may reflect the demand of investors toward certain green bond ratings.

Overall, there is no evidence of a significant green premium in our matched sample, the negative role of green proxy on green bond premium highlights the fact that demand pressures relative to the supply capacity are greater for certified green bonds than noncertified green bonds. These market phenomena result from excess demand in the market for certified green bonds due to lower information costs, greater investor confidence, and an insufficient volume of certified green bond supplies. In fact, the lower green bond premium for certified green bonds reveals benign financing conditions for these green bond issuers, relative to noncertified green bond issuers, due to improved information asymmetry.

Nevertheless, more work remains to be done to further develop the green bond market. First, the significant negative impact of a greenness indicator on a green premium reveals the insufficient supply of green projects and green bonds that are certified based on widely accepted standards or quality. Thus, only some green bonds are able to enjoy lower financing costs for going green. Second, herding into a relatively small group of qualified green targets may lead to a lower return on investing in green bonds, which might subdue the appetite of some investors. This may be the case for some traditional pension funds and insurance companies for which the investment committee has not set up a binding guideline for green assets in the strategic asset allocation.

## Summary and Discussion

Green bonds can make significant contributions to financing green investments that help tackle climate change and promote a cleaner environment. While the green bond market has grown substantially over the past decade, it remains very small compared to the conventional bond market. In this paper, the green bond premium is calculated as the difference in the ask yields between a green bond and an equivalent conventional bond after controlling for differences in liquidity between

**Table 6: Determinants of the Green Bond Premium I**

| Prem_OLS | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| CBICTF | | | | | | | | | −0.086*** |
| | | | | | | | | | (−6.12) |
| INDREV | | | | | | | | −0.066*** | |
| | | | | | | | | (−8.54) | |
| Maturity | | | | | | 0.131*** | 0.128*** | 0.132*** | 0.132*** |
| | | | | | | (10.04) | (13.11) | (13.56) | (13.02) |
| Maturity_SQ | | | | | | −0.007*** | −0.007*** | −0.00686*** | −0.00676*** |
| | | | | | | (−9.87) | (−12.79) | (−13.64) | (−12.80) |
| ASKYLD | | | | | 0.017*** | | 0.011** | 0.009** | 0.012*** |
| | | | | | (4.68) | | (2.62) | (2.20) | (2.73) |
| EUR | | | | −0.060*** | | | −0.025*** | −0.017** | −0.041*** |
| | | | | (−4.91) | | | (−3.24) | (−2.21) | (−5.82) |
| USD | | | | −0.117*** | | | 0.008 | −0.002 | −0.008 |
| | | | | (−4.93) | | | (0.60) | (−0.12) | (−0.56) |
| Financial | | | −0.115*** | | | | −0.033** | −0.032** | −0.001 |
| | | | (−5.85) | | | | (−2.18) | (−2.09) | (−0.05) |
| Utilities | | | 0.020 | | | | 0.123*** | 0.106*** | 0.151*** |
| | | | (1.34) | | | | (8.52) | (7.76) | (11.06) |
| ISSAMT | | 0.003 | | | | | −0.068*** | −0.076*** | −0.067*** |
| | | (0.30) | | | | | (−5.79) | (−6.46) | (−5.95) |
| ISSAMT_SQ | | −0.016*** | | | | | 0.002 | 0.002 | 0.002 |
| | | (−9.71) | | | | | (0.87) | (0.60) | (0.84) |
| RATING_AA | 0.025* | | | | | | 0.010 | 0.032** | 0.026** |
| | (1.71) | | | | | | (0.81) | (2.39) | (2.13) |
| RATING_A | −0.039*** | | | | | | −0.063*** | −0.062*** | −0.084*** |
| | (−3.17) | | | | | | (−5.77) | (−5.82) | (−6.44) |
| RATING_BBB | −0.139*** | | | | | | −0.088*** | −0.073*** | −0.104*** |
| | (−4.41) | | | | | | (−5.56) | (−4.64) | (−5.72) |
| Constant | 0.022** | 0.035*** | 0.026*** | 0.062*** | −0.029*** | −0.527*** | −0.437*** | −0.386*** | −0.443*** |
| | (2.40) | (6.15) | (3.80) | (5.03) | (−4.80) | (−10.14) | (−14.14) | (−11.45) | (−13.75) |
| Time Fixed Effects | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Observations | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 |
| Adj R-squared | 0.043 | 0.140 | 0.043 | 0.033 | 0.017 | 0.171 | 0.308 | 0.318 | 0.310 |
| F | 37.48 | 301.30 | 61.91 | 12.97 | 21.91 | 52.35 | 152.40 | 152.70 | 140.30 |

Notes:
1. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.
2. Robust t statistics in parenthesis.
Source: Authors' calculations.

the two types of bonds. The main objective of the paper is to calculate the green bond premium and to identify the major determinants of this premium.

We find that, on average, there is no significant premium for green bonds relative to conventional bonds. However, the green premium can be significantly reduced if a green bond has an independent reviewer or CBI certification. This implies the importance of a widely recognized and accepted standard in the green bond market in lowering the information costs of investors.

In addition, the evidence indicates that green indicators such as an external reviewer and green bond certification can boost investor confidence. Unlike conventional bonds, green bonds are not standardized instruments. Therefore, certain factors like greenness operate in the pricing dynamics and match the needs of issuers and investors. The issued amount is negatively related to the green bond premium, while a longer maturity leads to a positive term spread. In addition, EUR-denominated bonds show a lower premium compared with other currencies.

**Table 7: Determinants of the Green Bond Premium II**

| Prem_GLS | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|---|---|---|---|---|---|---|---|---|---|
| CBICTF | | | | | | | | | −0.087*** |
| | | | | | | | | | (−6.26) |
| INDREV | | | | | | | | −0.067*** | |
| | | | | | | | | (−8.56) | |
| Maturity | | | | | | 0.131*** | 0.129*** | 0.132*** | 0.133*** |
| | | | | | | (10.10) | (13.12) | (13.58) | (13.04) |
| Maturity_SQ | | | | | | −0.007*** | −0.007*** | −0.007*** | −0.007*** |
| | | | | | | (−9.94) | (−12.84) | (−13.69) | (−12.86) |
| ASKYLD | | | | | 0.017*** | | 0.012*** | 0.010** | 0.012*** |
| | | | | | (4.92) | | (2.86) | (2.43) | (2.98) |
| EUR | | | | −0.061*** | | | −0.023*** | −0.016* | −0.039*** |
| | | | | (−5.00) | | | (−3.04) | (−2.00) | (−5.61) |
| USD | | | | −0.118*** | | | 0.007 | −0.002 | −0.008 |
| | | | | (−5.02) | | | (0.57) | (−0.16) | (−0.61) |
| Financial | | | −0.116*** | | | | −0.033** | −0.033** | −0.001 |
| | | | (−5.89) | | | | (−2.22) | (−2.13) | (−0.05) |
| Utilities | | | 0.019 | | | | 0.121*** | 0.105*** | 0.150*** |
| | | | (1.33) | | | | (8.53) | (7.75) | (11.08) |
| ISSAMT | | 0.002 | | | | | −0.067*** | −0.076*** | −0.067*** |
| | | (0.30) | | | | | (−5.72) | (−6.39) | (−5.87) |
| ISSAMT_SQ | | −0.016*** | | | | | 0.002 | 0.001 | 0.002 |
| | | (−9.81) | | | | | (0.81) | (0.54) | (0.78) |
| RATING_AA | 0.025* | | | | | | 0.011 | 0.033** | 0.026** |
| | (1.71) | | | | | | (0.84) | (2.44) | (2.17) |
| RATING_A | −0.039*** | | | | | | −0.063*** | −0.061*** | −0.084*** |
| | (−3.20) | | | | | | (−5.72) | (−5.76) | (−6.41) |
| RATING_BBB | −0.140*** | | | | | | −0.088*** | −0.073*** | −0.104*** |
| | (−4.46) | | | | | | (−5.55) | (−4.62) | (−5.73) |
| Constant | 0.023** | 0.036*** | 0.026*** | 0.063*** | −0.030*** | −0.529*** | −0.440*** | −0.388*** | −0.446*** |
| | (2.47) | (6.32) | (3.89) | (5.15) | (−4.98) | (−10.18) | (−14.27) | (−11.54) | (−13.87) |
| Time Fixed Effects | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Observations | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 | 1,365 |
| Adj R-squared | 0.043 | 0.141 | 0.043 | 0.034 | 0.018 | 0.172 | 0.31 | 0.321 | 0.312 |
| F | 37.78 | 307.20 | 61.54 | 13.47 | 24.16 | 52.54 | 154.00 | 153.60 | 141.90 |

Notes:
1. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.
2. Robust t statistics in parenthesis.
Source: Authors' calculations.

Sufficiently large, committed demand from institutional investors would lower the cost of capital for green projects. There is a good opportunity for issuers to expand their funding capacity for green projects thanks to ethical investors who are willing to sacrifice some yield to participate in environmentally friendly projects. The urgent need to finance a low-carbon and environmentally sustainable economy makes green bonds attractive and compelling. More green bonds would help economies meet the huge green investment needs required to cope with climate change and mitigation.

However, going green does not necessarily mean sacrificing yield, and institutional investors may not necessarily suffer a green discount forever. The current negative premium has been partly driven by excess demand. To make green bonds more attractive to investors, externalities like the environmental benefits generated from green projects should be monetized.

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# Market Summaries

## People's Republic of China

### Yield Movements

The entire government bond yield curve of the People's Republic of China (PRC) shifted downward between 1 March and 15 May (**Figure 1**). The yield curve fell an average of 28 basis points (bps), with the largest declines at the shorter-end. Yields fell from 31 bps to 39 bps for tenors of 3 years or less, while falling from 20 bps to 28 bps for the remaining tenors.

Yields for the PRC's government bonds followed a general downward trend beginning in March, stemming largely from expectations that the domestic economy would slow down this year. While the PRC reported a gross domestic product (GDP) growth rate of 6.8% year-on-year (y-o-y) for the first quarter (Q1) of 2018, the same rate as in the fourth quarter (Q4) of 2017, it was lower than full-year 2017's GDP growth.

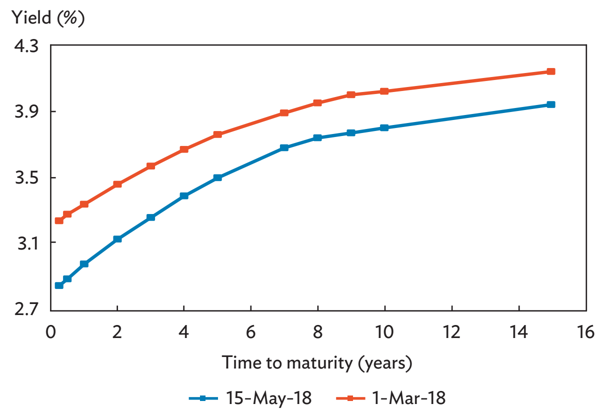
The International Monetary Fund in January forecast the PRC's full-year 2018 GDP growth rate at 6.6%; in March, the PRC set a target of 6.5%.

In addition to expectations of moderating GDP growth, inflation has shown signs of trending downward. In February, consumer prices rose 2.9% y-o-y. This slowed to 2.1% in March and declined further to 1.8% y-o-y in April.

The weaker economic data has also led to increased risk aversion, with the PRC's stock market contracting 3.5% year-to-date through 15 May. In addition, there have been a number of corporate bond defaults. On 14 May, it was reported that more than 10 companies had defaulted on bond payments in 2018 with a total value of CNY12.8 billion. The increased risk aversion has led investors to favor government bonds and AAA-rated bonds.

The People's Bank of China (PBOC) on 17 April reduced by 100 bps the reserve requirement ratio of banks. Funds released by the reserve requirement ratio cut were required to be used by banks to pay outstanding Medium-Term Lending Facility obligations and to support small and micro enterprises. The market interpreted the move by the PBOC as a slight easing from the deleveraging campaign that is being conducted. The move caused a significant 1-day drop in yields, with the PRC's 10-year yield falling 20 bps by the end of the following day.

**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

The PRC's local currency (LCY) bonds outstanding rose 0.7% quarter-on-quarter (q-o-q) and 14.8% y-o-y in Q1 2018 to reach CNY57.3 trillion (USD9.1 trillion) at the end of March (**Table 1**). The PRC bond market's q-o-q growth slowed from 4.0% in the previous quarter. The slower rate was due to declines in the growth rates of both government and corporate bonds.

**Government bonds.** The PRC's government bond market grew 0.8% q-o-q in Q1 2018, down from 4.4% q-o-q in the previous quarter. The slowdown was driven by the 0.1% q-o-q contraction in the PRC's outstanding Treasury bonds and only 1.5% q-o-q growth in outstanding local government bonds. In the previous quarter, local government bonds grew 5.9% q-o-q. The slowdown in

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

| | Outstanding Amount (billion) | | | | | | Growth Rates (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Q1 2017 | | Q1 2018 | |
| | CNY | USD | CNY | USD | CNY | USD | q-o-q | y-o-y | q-o-q | y-o-y |
| **Total** | **49,895** | **7,245** | **56,866** | **8,739** | **57,272** | **9,126** | **0.8** | **17.2** | **0.7** | **14.8** |
| Government | 35,113 | 5,098 | 41,167 | 6,327 | 41,516 | 6,616 | 1.6 | 26.3 | 0.8 | 18.2 |
| Treasury Bonds and Local Government Bonds | 22,510 | 3,268 | 27,712 | 4,259 | 27,916 | 4,448 | 1.7 | 42.0 | 0.7 | 24.0 |
| Central Bank Bonds | 0 | 0 | 0 | 0 | 0 | 0 | (100.0) | (100.0) | 0.0 | 0.0 |
| Policy Bank Bonds | 12,604 | 1,830 | 13,454 | 2,068 | 13,600 | 2,167 | 1.7 | 9.5 | 1.1 | 7.9 |
| Corporate | 14,782 | 2,146 | 15,700 | 2,413 | 15,756 | 2,511 | (1.2) | 0.03 | 0.4 | 6.6 |
| Policy Bank Bonds | | | | | | | | | | |
| China Development Bank | 7,185 | 1,043 | 7,540 | 1,159 | 7,571 | 1,206 | 1.5 | 5.4 | 0.4 | 5.4 |
| Export–Import Bank of China | 2,190 | 318 | 2,296 | 353 | 2,329 | 371 | 2.7 | 14.5 | 1.4 | 6.4 |
| Agricultural Devt. Bank of China | 3,229 | 469 | 3,617 | 556 | 3,700 | 590 | 1.4 | 16.2 | 2.3 | 14.6 |

( ) = negative, CNY = Chinese yuan, LCY = local currency, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Treasury bonds include savings bonds and local government bonds.
3. Bloomberg LP end-of-period LCY–USD rates are used.
4. Growth rates are calculated from an LCY base and do not include currency effects.
Sources: *ChinaBond, Wind Information*, and Bloomberg LP.

Q1 2018 reflected the approaching end of the PRC's local government debt swap program and other efforts to limit the debt risk of local governments.

The PRC's local government debt swap program is set to end in August 2018. For full-year 2018, the Government of the PRC set a ceiling for local governments of CNY21.0 trillion worth of debt, up from the previous limit of CNY18.8 trillion in 2017. Local government bond issuance is expected to increase in the remaining months of the debt swap program as an estimated CNY1.9 trillion worth of local government debt remains to be swapped under the ceiling.

There were no central bank bonds outstanding in Q1 2018 as the PBOC no longer issues such bonds.

**Corporate bonds.** The PRC's corporate bonds outstanding grew 0.4% q-o-q in Q1 2018 after rising 2.9% q-o-q in Q4 2017. With the exception of medium-term notes, all other major categories of corporate bonds showed q-o-q declines (**Table 2**). State-owned enterprise bonds, local corporate bonds, and commercial papers all registered y-o-y declines in Q1 2018.

The weaker corporate bond growth was largely a result of increased risk aversion due to the PRC's deleveraging campaign, which led to corporates being reluctant to issue more debt. A string of defaults in January–May also led investors to prefer government bonds and investment grade corporates. These factors contributed to a 9.0% q-o-q contraction in corporate bond issuance in Q1 2018 to CNY1.4 trillion. Other than medium-term notes, all major categories of corporate bonds had lower issuance levels in Q1 2018 than in the previous quarter (**Figure 2**).

The PRC's corporate bond market continues to be dominated by a few big issuers (**Table 3**). At the end of Q1 2018, the top 30 corporate bond issuers accounted for CNY6.5 trillion worth of corporate bonds outstanding, or about 41.3% of the total market. Of the top 30, the 10 largest issuers accounted for CNY4.1 trillion. China Railway, the top issuer, has more than three times the outstanding amount of bonds as Industrial and Commercial Bank, the second-largest issuer. The top 30 issuer includes 14 banks, which continue to dominate the list as they generate funding in order to beef up their capital bases and liquidity, and lengthen their maturity profiles.

**Table 4** lists the largest corporate bond issuances in Q1 2018.

## Investor Profile

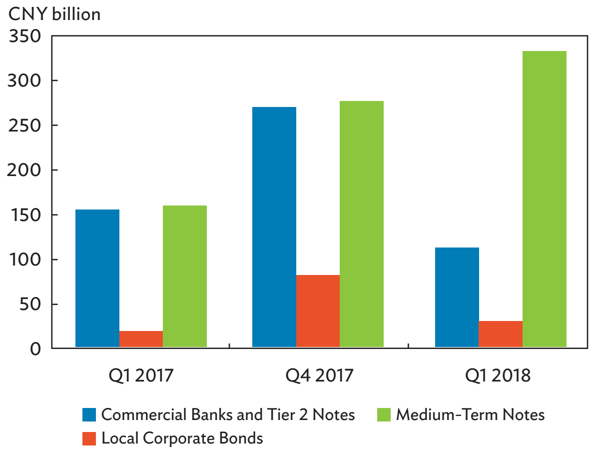
**Treasury bonds and policy bank bonds**. Banks were the single-largest holder of Treasury bonds and policy bank bonds at the end of March, though their share declined to 66.0% from 67.9% a year earlier (**Figure 3**). In contrast,

**Table 2: Corporate Bonds Outstanding in Key Categories**

| | Amount (CNY billion) | | | Growth Rate (%) | | | |
|---|---|---|---|---|---|---|---|
| | | | | Q1 2017 | | Q1 2018 | |
| | Q1 2017 | Q4 2017 | Q1 2018 | q-o-q | y-o-y | q-o-q | y-o-y |
| Commercial Bank Bonds and Tier 2 Notes | 2,534 | 3,143 | 3,125 | 1.0 | 15.4 | (0.6) | 23.3 |
| SOE Bonds | 542 | 485 | 465 | 1.0 | (7.0) | (4.2) | (14.3) |
| Local Corporate Bonds | 2,912 | 3,005 | 2,911 | 1.0 | 8.3 | (3.2) | (0.1) |
| Commercial Papers | 1,912 | 1,536 | 1,477 | 0.9 | (32.7) | (3.9) | (22.8) |
| Medium-Term Notes | 4,701 | 4,905 | 5,049 | 1.0 | 2.8 | 2.9 | 7.4 |

( ) = negative, CNY = Chinese yuan, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, SOE = state-owned enterprise, y-o-y = year-on-year.
Sources: *ChinaBond* and *Wind Information*.

**Figure 2: Corporate Bond Issuance in Key Sectors**




CNY = Chinese yuan, Q1 = first quarter, Q4 = fourth quarter.
Sources: *ChinaBond* and *Wind Information*.

the share held by funds institutions rose to 16.1% from 13.6% in the same period.

**Corporate bonds**. Funds institutions were the largest holders of corporate bonds at the end of March with a share of 48.0% of outstanding corporate bonds, up from 47.5% at the end of March 2017 (**Figure 4**). The share held by banks declined to 15.8% from 15.9% during the review period.

**Figure 5** presents investor profiles across different corporate bond categories at the end of March. Funds institutions are the dominant buyers of local corporate bonds while banks are the dominant holders of commercial bank bonds.

## Liquidity

The volume of interest rate swaps rose 2.5% q-o-q in Q1 2018. The 7-day repurchase rate remained the most used interest rate swap, comprising an 84.2% share of the total interest rate swap volume during the quarter (**Table 5**).

Government bond turnover ratios fell in Q1 2018 despite lower interest rates due to some investors adopting a wait-and-see attitude (**Figure 6**).

## Policy, Institutional, and Regulatory Developments

### PBOC Reduces Reserve Requirement Ratio

On 16 April, the PBOC reduced the reserve requirement ratio of banks by 100 basis points, effective 25 April. The PBOC placed restrictions on the funds freed by the reduction, stipulating that they must be used to repay loans from the PBOC's Medium-Term Lending Facility. Leftover funds must be used for lending to small and micro enterprises.

### Government Issues New Rules on Local Government Bond Issuance

On 8 May, the PRC issued new rules governing the issuance of bonds by local governments. The new rules allow local governments to issue bonds with longer tenors, such as 15-year to 20-year bonds, and to allow bond issuances for the purpose of rolling over maturing obligations.

### 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 | 1575.5 | 251.06 | Yes | No | Transportation |
| 2. | Industrial and Commercial Bank of China | 356.0 | 56.73 | Yes | Yes | Banking |
| 3. | State Grid Corporation of China | 326.8 | 52.08 | Yes | No | Public Utilities |
| 4. | China National Petroleum | 325.0 | 51.79 | Yes | No | Energy |
| 5. | Bank of China | 318.9 | 50.81 | Yes | Yes | Banking |
| 6. | Agricultural Bank of China | 318.0 | 50.67 | Yes | Yes | Banking |
| 7. | China Construction Bank | 272.0 | 43.34 | Yes | Yes | Banking |
| 8. | Bank of Communications | 265.0 | 42.23 | No | Yes | Banking |
| 9. | Shanghai Pudong Development Bank | 198.6 | 31.65 | No | Yes | Banking |
| 10. | China CITIC Bank | 192.5 | 30.67 | No | Yes | Banking |
| 11. | China Everbright Bank | 188.9 | 30.10 | Yes | Yes | Banking |
| 12. | China Minsheng Banking | 185.1 | 29.50 | No | Yes | Banking |
| 13. | Industrial Bank | 155.0 | 24.70 | No | Yes | Banking |
| 14. | Central Huijin Investment | 154.0 | 24.54 | Yes | No | Asset Management |
| 15. | State Power Investment | 135.8 | 21.65 | Yes | No | Energy |
| 16. | Bank of Beijing | 130.4 | 20.78 | Yes | Yes | Banking |
| 17. | Huaxia Bank | 128.8 | 20.52 | Yes | No | Banking |
| 18. | Tianjin Infrastructure Construction and Investment Group | 122.9 | 19.58 | Yes | No | Industrial |
| 19. | CITIC Securities | 117.5 | 18.72 | Yes | Yes | Brokerage |
| 20. | China Cinda Asset Management | 112.0 | 17.85 | Yes | Yes | Asset Management |
| 21. | PetroChina | 105.0 | 16.73 | Yes | Yes | Energy |
| 22. | China Datang | 97.2 | 15.49 | Yes | Yes | Energy |
| 23. | China Huarong Asset Management | 96.0 | 15.30 | Yes | Yes | Asset Management |
| 24. | China Three Gorges | 95.0 | 15.14 | Yes | No | Public Utilities |
| 25. | Haitong Securities | 93.6 | 14.91 | Yes | Yes | Brokerage |
| 26. | Dalian Wanda Commercial Properties | 93.0 | 14.82 | No | Yes | Real Estate |
| 27. | Guotai Junan Securities | 89.8 | 14.31 | Yes | Yes | Brokerage |
| 28. | China Merchants Bank | 89.0 | 14.18 | Yes | Yes | Banking |
| 29. | China Guangfa Bank | 86.5 | 13.78 | No | Yes | Banking |
| 30. | Huatai Securities | 85.9 | 13.69 | Yes | No | Energy |
| **Total Top 30 LCY Corporate Issuers** | | **6,509.70** | **1,037.32** | | | |
| **Total LCY Corporate Bonds** | | **15,756.08** | **2,510.73** | | | |
| **Top 30 as % of Total LCY Corporate Bonds** | | **41.3%** | **41.3%** | | | |

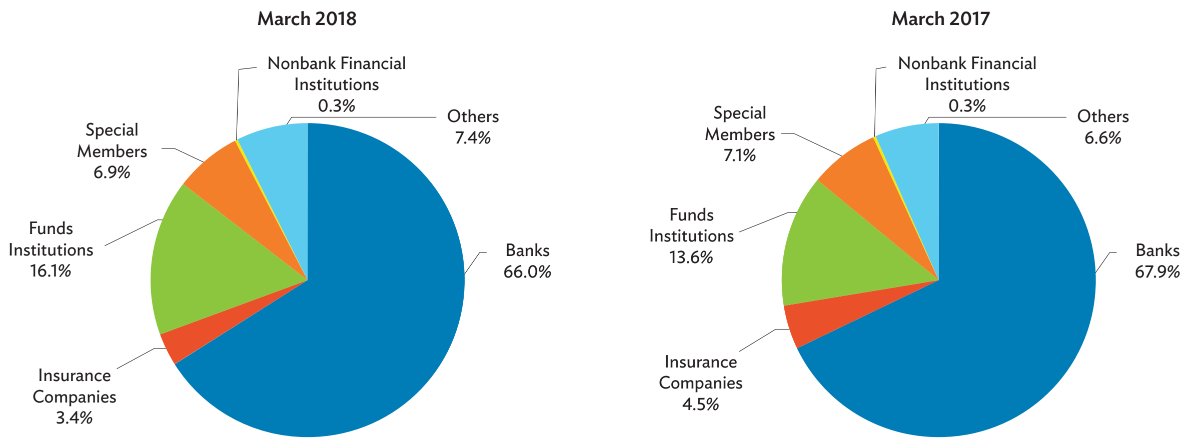
CNY = Chinese yuan, LCY = local currency, USD = United States dollar.
Notes:
1. Data as of 31 March 2018.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

### Table 4: Notable Local Currency Corporate Bond Issuance in the First Quarter of 2018

| Corporate Issuers | Coupon Rate (%) | Issued Amount (CNY billion) |
|---|---|---|
| China Railway Corp | | |
| 5-year bond | 4.91 | 15 |
| 5-year bond | 5.03 | 15 |
| 5-year bond | 5.03 | 15 |
| 5-year bond | 4.80 | 13 |
| 10-year bond | 4.93 | 7 |
| 10-year bond | 5.10 | 5 |
| 10-year bond | 4.91 | 5 |
| 10-year bond | 5.09 | 5 |
| Central Huijin Investment | | |
| 1-year bond | 4.80 | 5 |
| 1-year bond | 4.90 | 5 |
| 3-year bond | 5.00 | 10 |
| 3-year bond | 5.15 | 10 |
| China Cinda Asset Management | | |
| 10-year bond | 5.50 | 15 |
| 10-year bond | 5.50 | 10 |
| China National Petroleum | | |
| 5-year bond | 1.40 | 20 |
| Tianjin Infrastructure Construction and Investment (Group) | | |
| 3-year bond | 5.64 | 3 |
| 3-year bond | 5.47 | 3 |
| 3-year bond | 5.46 | 2 |
| 3-year bond | 5.70 | 2 |
| 3-year bond | 5.48 | 2 |
| 3-year bond | 5.68 | 2 |
| 3-year bond | 5.68 | 2 |

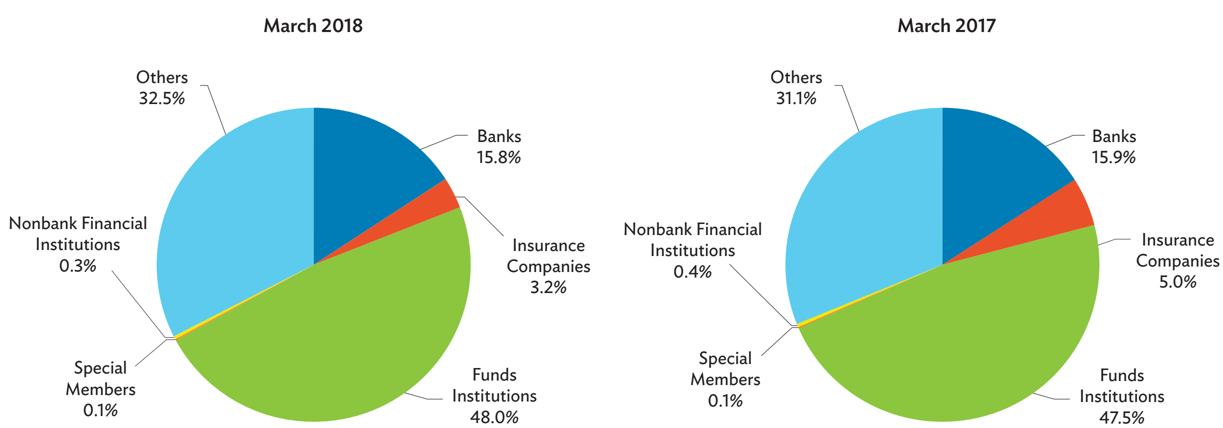
CNY = Chinese yuan.
Source: Based on data from Bloomberg LP.

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



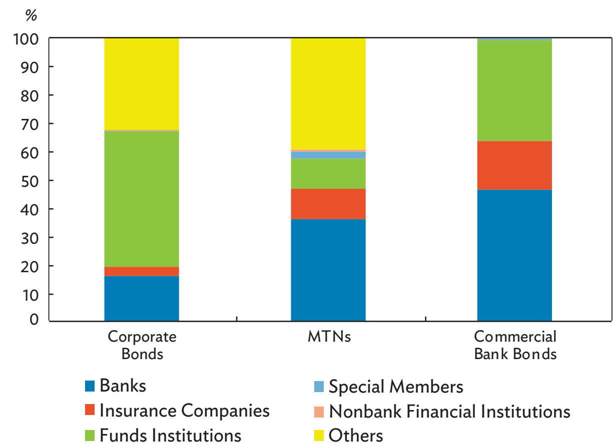

Source: *ChinaBond*.

### Figure 4: Local Currency Corporate Bonds Investor Profile



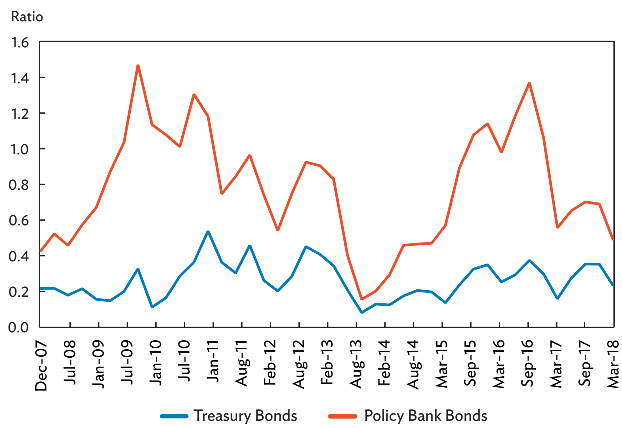

Source: *ChinaBond*.

## Figure 5: Investor Profile across Bond Categories




MTNs = medium-term notes.
Note: Data as of end-March 2018.
Source: *ChinaBond*.

## Figure 6: Turnover Ratios for Government Bonds




Source: *ChinaBond*.

## Table 5: Notional Values of the People's Republic of China's Interest Rate Swap Market in the First Quarter of 2018

| Interest Rate Swap Benchmarks | Notional Amount (CNY billion) | Share of Total Notional Amount (%) | Growth Rate (%) |
|---|---|---|---|
| | Q1 2018 | | q-o-q |
| 7-Day Repo Rate | 4,455.2 | 84.22 | 19.28 |
| Overnight SHIBOR | 16.1 | 0.30 | 1.20 |
| 3-Month SHIBOR | 783.1 | 14.80 | (42.65) |
| 1-Year Term Deposit Rate | 1.0 | 0.02 | – |
| LIBOR | | – | n.a. |
| 1-Year Lending Rate | 0.0 | – | (100.00) |
| LPR1Y | 0.0 | – | (100.00) |
| 3-Year Lending Rate | 1.5 | 0.03 | 919.33 |
| 5-Year Lending Rate | 0.8 | 0.02 | n.a. |
| Depository Institution 7-Day Repo Rate | 2.1 | 0.04 | (16.33) |
| 10-Year Bond Yield | 18.5 | 0.35 | (29.69) |
| 10-Year Treasury yield | 9.4 | 0.18 | 16.77 |
| 3-Year AAA Short-Term Notes/ Government Debt | 0.2 | 0.00 | (69.23) |
| 10-Year Bond Yield/10-Year Government Bond Yield | 0.8 | 0.02 | 90.48 |
| Loan Interest Rate—1 Year * 1.10 | 0.7 | 0.01 | n.a. |
| Loan Interest Rate—1 Year * 1.05 | 0.5 | 0.01 | n.a. |
| **Total** | **5,289.7** | **100.00** | **2.51** |

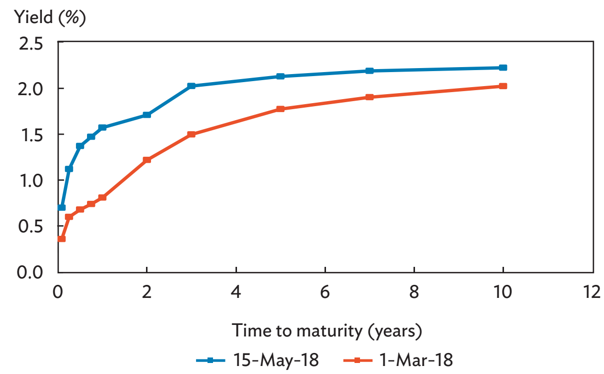
( ) = negative, CNY = Chinese yuan, LIBOR = London Interbank Offered Rate, LPR1Y = 1-Year Loan Prime Rate, n.a. = not available, q-o-q = quarter-on-quarter, Q1 = first quarter, Repo = repurchase, SHIBOR = Shanghai Interbank Offered Rate.
Note: Growth rate computed based on notional amounts.
Sources: *AsianBondsOnline* and *ChinaMoney*.

# Hong Kong, China

## Yield Movements

Hong Kong, China's local currency (LCY) government bond yield curve shifted upward for all tenors between 1 March and 15 May due to tightening domestic liquidity (**Figure 1**). Excluding the 1-month tenor, yields for maturities of 1-year or less rose an average of 68 basis points (bps). Yields with maturities of 2 years or more (excluding the 15-year tenor) rose an average of 37 bps. This resulted in the curve climbing more steeply at the short-end and flattening at the long-end of the curve. Consequently, the yield spread between 2-year and 10-year bonds narrowed to 51 bps during the review period.

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




Source: Based on data from Bloomberg LP.

Hong Kong, China's government bond yields closely track United States (US) Treasury yields. During the review period, the US yield curve shifted upward, with an average gain of 31 bps for all tenors except 1-month and 30-year tenors, which rose 16 bps and 12 bps, respectively. The benchmark 10-year US Treasury yield rose to a 4-year high, reaching 3.1% on 15 May. The rise in US yields was due to the interest rate increase of 25 bps in March as the US Federal Reserve gradually moves toward normalization and away from an accommodative monetary policy that was implemented to mitigate the effects of the global financial crisis.

In the absence of an independent monetary policy, Hong Kong, China follows the Federal Reserve's monetary policy, with the Hong Kong dollar pegged to the US dollar. Hong Kong, China likewise raised its base rate by 25 bps in March to 2.0% alongside the US interest rate hike. In April, the Hong Kong Monetary Authority (HKMA) started buying Hong Kong dollars when the domestic currency fell to the weak-end of its trading band at HKD7.85 against the US dollar. It initially bought HKD816 million to reduce the aggregate balance of liquidity in the market to HKD179 billion. In a series of interventions that followed, the HKMA has mopped up a total of HKD51.3 billion from the market. The move to buy Hong Kong dollars is intended to further reduce the aggregate balance of liquidity and, in turn, raise local interest rates. Within a week of intervention, interest rates rose to their highest level since 2008.

Alongside the rise in yields, Hong Kong, China's gross domestic product expanded 4.7% year-on-year (y-o-y) in the first quarter (Q1) of 2018, up from 3.4% y-o-y growth in the fourth quarter of 2017. It was the fastest pace of growth since the second quarter of 2011, surpassing the high-end of the growth forecast of 4.0% for full-year 2018. The robust growth was driven by gains in exports of goods, which accelerated to 5.2% y-o-y in Q1 2018 from 3.4% y-o-y in the fourth quarter of 2017, and the resilient growth of domestic demand, which expanded 8.6% y-o-y versus 6.3% y-o-y over the same period.

Consumer prices rose 1.9% y-o-y in April, slower than the 2.6% y-o-y inflation rate in March, mainly due to smaller increases in package tour charges since the Easter holiday arrived in the earlier month. The government noted that inflationary pressures remained largely moderate in April. Inflation for the first 4 months of 2018 stood at 2.3% y-o-y.

## Size and Composition

Hong Kong, China's LCY bonds outstanding reached HKD1,890 billion at the end of March , down 0.9% quarter-on-quarter (q-o-q), but up 2.1% y-o-y (**Table 1**). The q-o-q decline was due to contractions in both government and corporate bonds. On a y-o-y basis, the contraction in corporate bonds dampened the

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

| | Outstanding Amount (billion) | | | | | | Growth Rate (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Q1 2017 | | Q1 2018 | |
| | HKD | USD | HKD | USD | HKD | USD | q-o-q | y-o-y | q-o-q | y-o-y |
| **Total** | **1,852** | **238** | **1,907** | **244** | **1,890** | **241** | **1.1** | **12.5** | **(0.9)** | **2.1** |
| Government | 1,068 | 137 | 1,153 | 148 | 1,149 | 146 | 0.3 | 11.5 | (0.4) | 7.6 |
| Exchange Fund Bills | 919 | 118 | 1,011 | 129 | 1,014 | 129 | 0.4 | 14.8 | 0.3 | 10.4 |
| Exchange Fund Notes | 46 | 6 | 38 | 5 | 37 | 5 | (4.6) | (18.4) | (2.6) | (20.0) |
| HKSAR Bonds | 103 | 13 | 105 | 13 | 98 | 13 | 1.8 | 2.6 | (6.3) | (4.7) |
| Corporate | 784 | 101 | 754 | 96 | 741 | 94 | 2.2 | 13.9 | (1.6) | (5.5) |

( ) = negative, HKD = Hong Kong dollar, HKSAR = Hong Kong Special Administrative Region, LCY = local currency, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. Growth rates are calculated from an LCY base and do not include currency effects.
Sources: Hong Kong Monetary Authority.

expansion in government bonds. At the end of March, government bonds accounted for 61.0% of total LCY bonds outstanding.

**Government bonds.** LCY government bonds outstanding amounted to HKD1,149 billion at the end of March, down 0.4% q-o-q, but up 7.6% y-o-y. The q-o-q slowdown was driven by decreases in Hong Kong Special Administrative Region (HKSAR) bonds and Exchange Fund Notes (EFNs). The expansion was driven by Exchange Fund Bills (EFBs), which rose 0.3% q-o-q and 10.4% y-o-y to reach HKD1,104 billion at the end of March.

The amount of EFNs outstanding continued to decline in Q1 2018, down 2.6% q-o-q and 20.0% y-o-y, falling to HKD37 billion at the end of March due to a lack of issuance since EFNs became limited to a maturity of 2 years.

HKSAR bonds fell 6.3% q-o-q and 4.7% y-o-y in Q1 2018, totaling HKD98 billion at the end of March as total issuance in Q1 2018 reached HKD1.8 billion. In Q1 2018, the government issued two HKSAR bonds, one valued at HKD600 million with a 15-year tenor and the other valued at HKD1.2 billion with a 10-year tenor, under the Institutional Bond Issuance Programme.

**Corporate bonds.** The amount of LCY corporate bonds outstanding totaled HKD741 billion at the end of March, down 1.6% q-o-q and 5.5% y-o-y in Q1 2018. Hong Kong, China's top 30 nonbank corporate issuers had LCY outstanding bonds amounting to HKD186 billion at the end of March, accounting for 25.1% of total corporate bonds outstanding (**Table 2**). Real estate firms continued to dominate the corporate market, comprising one-third of the top 30. The Hong Kong Mortgage Corporation remained the top issuer with outstanding bonds of HKD31.7 billion at the end of March, followed by Sun Hung Kai Properties with HKD12.4 billion and MTR Corporation with HKD11.5 billion. Among the top 30, 4 were state-owned banks and 21 were listed on the Hong Kong Stock Exchange.

Among the top five nonbank corporate issuers in Q1 2018, the Hong Kong Mortgage Corporation still took the lead with 14 issuances, the largest of which was a HKD1.9 billion bond (**Table 3**). Haitong International Securities, a financing firm, was second. It was followed by two special purpose vehicles, Henderson Land Development and Wharf Real Estate Investment Company, and Huajin Holdings, an investment holdings firm.

## Policy, Institutional, and Regulatory Developments

### HKMA Announces Details of the Pilot Bond Grant Scheme

On 10 May, the HKMA issued a circular on the eligibility criteria for the 3-year Pilot Bond Grant Scheme (PBGS), which seeks to attract local, People's Republic of China-based, and overseas enterprises to issue bonds in Hong Kong, China. The PBGS is set to be launched upon the completion of the legislative process for the 2018/19

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

| | Issuers | Outstanding Amount | | State-Owned | Listed Company | Type of Industry |
|---|---|---|---|---|---|---|
| | | LCY Bonds (HKD billion) | LCY Bonds (USD billion) | | | |
| 1. | The Hong Kong Mortgage Corporation | 31.66 | 4.03 | Yes | No | Finance |
| 2. | Sun Hung Kai Properties (Capital Market) | 12.40 | 1.58 | No | Yes | Real Estate |
| 3. | MTR Corporation | 11.50 | 1.46 | Yes | Yes | Transportation |
| 4. | The Hong Kong and China Gas Company | 11.04 | 1.41 | No | Yes | Utilities |
| 5. | New World Development | 9.41 | 1.20 | No | Yes | Diversified |
| 6. | Swire Pacific | 8.67 | 1.10 | No | Yes | Diversified |
| 7. | Hong Kong Land | 8.59 | 1.09 | No | No | Real Estate |
| 8. | Link Holdings | 8.53 | 1.09 | No | No | Finance |
| 9. | CLP Power Hong Kong Financing | 7.81 | 0.99 | No | No | Finance |
| 10. | The Wharf (Holdings) | 7.62 | 0.97 | No | Yes | Finance |
| 11. | Haitong International Securities Group | 7.12 | 0.91 | No | Yes | Finance |
| 12. | Swire Properties | 5.93 | 0.76 | No | Yes | Real Estate |
| 13. | Hongkong Electric | 5.84 | 0.74 | No | No | Utilities |
| 14. | China Merchants Port Holdings | 5.70 | 0.73 | No | Yes | Transportation |
| 15. | Hang Lung Properties | 4.61 | 0.59 | No | Yes | Real Estate |
| 16. | CK Asset Holdings | 4.20 | 0.53 | No | Yes | Real Estate |
| 17. | Henderson Land Development | 4.15 | 0.53 | No | No | Real Estate |
| 18. | Kowloon-Canton Railway | 3.40 | 0.43 | Yes | No | Transportation |
| 19. | FDG Electric Vehicles | 2.89 | 0.37 | No | Yes | Energy |
| 20. | Urban Renewal Authority | 2.80 | 0.36 | Yes | No | Real Estate |
| 21. | Emperor International Holdings | 2.60 | 0.33 | No | Yes | Real Estate |
| 22. | CK Hutchison Holdings | 2.50 | 0.32 | No | Yes | Diversified |
| 23. | China Dynamics (Holdings) | 2.36 | 0.30 | No | Yes | Diversified |
| 24. | Hysan Development Company | 2.30 | 0.29 | No | Yes | Real Estate |
| 25. | ASM Pacific Technology | 2.25 | 0.29 | No | Yes | Technology |
| 26. | The 13 Holdings | 2.22 | 0.28 | No | Yes | Industrial |
| 27. | Green Leader Holdings Group | 2.18 | 0.28 | No | Yes | Diversified |
| 28. | Gluon Xima International | 2.00 | 0.25 | No | No | Real Estate |
| 29. | China Agri-Products Exchange | 1.99 | 0.25 | No | Yes | Consumer, non-cyclical |
| 30. | Cathay Pacific Airways | 1.98 | 0.25 | No | Yes | Transportation |
| **Total Top 30 Nonbank LCY Corporate Issuers** | | **186.21** | **23.72** | | | |
| **Total LCY Corporate Bonds** | | **741.28** | **94.45** | | | |
| **Top 30 as % of Total LCY Corporate Bonds** | | **25.1%** | **25.1%** | | | |

LCY = local currency.
Notes:
1. Data as of 31 March 2018.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

**Table 3: Notable Local Currency Corporate Bond Issuance in the First Quarter of 2018**

| Corporate Issuers | Coupon Rate (%) | Issued Amount (HKD billion) |
|---|---|---|
| The Hong Kong Mortgage Corporation | | |
| 3-month bond | 0.78 | 0.54 |
| 3-month bond | 0.78 | 0.42 |
| 3-month bond | 0.00 | 0.28 |
| 3-month bond | 0.00 | 0.23 |
| 3-month bond | 0.00 | 0.12 |
| 1-year bond | 1.60 | 1.00 |
| 1-year bond | 1.38 | 0.78 |
| 2-year bond | 1.74 | 1.00 |
| 2-year bond | 1.83 | 0.17 |
| 3-year bond | 1.26 | 1.90 |
| 3-year bond | 1.79 | 1.00 |
| 3-year bond | 2.05 | 0.54 |
| 4-year bond | 2.29 | 0.10 |
| 7-year bond | 2.59 | 0.30 |

| Corporate Issuers | Coupon Rate (%) | Issued Amount (HKD billion) |
|---|---|---|
| Haitong International Securities | | |
| 1-year bond | 0.00 | 1.30 |
| 1-year bond | 2.51 | 0.78 |
| 1-year bond | 2.80 | 0.54 |
| 1-year bond | 2.37 | 0.28 |
| 1-year bond | 2.65 | 0.20 |
| Henderson Land Development | | |
| 7-year bond | 3.09 | 0.48 |
| 10-year bond | 3.58 | 0.30 |
| 10-year bond | 3.63 | 0.29 |
| 10-year bond | 3.43 | 0.25 |
| 12-year bond | 3.62 | 0.20 |
| Wharf Real Estate Investment Company | | |
| 7-year bond | 2.95 | 0.50 |
| 7-year bond | 2.95 | 0.50 |
| 10-year bond | 3.07 | 0.50 |
| 10-year bond | 3.10 | 0.50 |
| Huajun Holdings | | |
| 4-year bond | 10.22 | 0.22 |

HKD = Hong Kong dollar.
Source: Bloomberg LP.

budget. Key eligibility criteria of the PBGS include the following:

(i) Eligible issuers are first-time issuers who have not issued bonds in Hong Kong, China in the 5-year period between 10 May 2013 and 9 May 2018, both days inclusive.

(ii) To be eligible, the bond must be issued in Hong Kong, China and have an issuance size of at least HKD1.5 billion (or the equivalent in foreign currency); it should be lodged with and cleared by the Central Moneymarkets Units or listed on the Hong Kong Stock Exchange, and should be issued to at least 10 persons (or fewer than 10 persons if none of them are an associate of the issuer).

(iii) The grant amount for each bond issue is equivalent to half of the eligible issuance expenses with a limit of HKD2.5 million if the bond, its issuer, or guarantors have received a credit rating from a rating agency recognized by the HKMA; or HKD1.25 million if none of the bond, its issuer, or guarantors have a credit rating. Each issuer can apply for a grant for two bond issuances at most.

## HKMA Supports Enhancements to the QDI Scheme

In a press release in May, the HKMA announced that it is working with the Government of the Special Administrative Region of Hong Kong, China on enhancements to the Qualifying Debt Instrument (QDI) Scheme. The enhancements include expanding the 100% profits tax exemption coverage from debt instruments with an original maturity of at least 7 years to instruments of any duration; and to allow debt instruments listed on the Hong Kong Stock Exchange to become eligible as a QDI in addition to those lodged and cleared by the Central Moneymarkets Unit.

## HKMA Pursuing a Green Bond Initiative

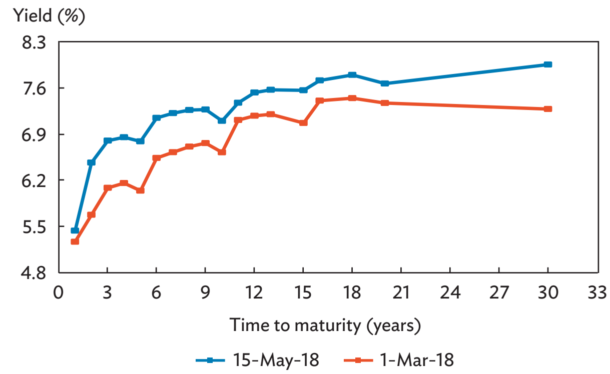
In the same press release, the HKMA also announced that it has appointed an advisor to study relevant issues and report its findings on green finance in Hong Kong, China and the government's first green bond issuance. The HKMA declared that it stands ready to assist the government by selecting arrangers to issue the inaugural green bond.

# Indonesia

## Yield Movements

Local currency (LCY) government bond yields in Indonesia rose for all tenors between 1 March and 15 May, leading the entire yield curve to shift upward (**Figure 1**). Bond yields gained the most at the short-end through the 9-year maturity, rising by an average of 65 basis points (bps), except for the 1-year tenor, which rose 17 bps. Yields for bonds with maturities from 10 years to 20 years climbed at a much slower average of 36 bps. This resulted in the narrowing of the spread between the 2-year and 10-year maturities to 63 bps on 15 May from 95 bps on 1 March.

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




Source: Based on data from Bloomberg LP.

The uptick in yields was largely driven by a market sell-off as investor appetite for Indonesian bonds waned amid rising yields for United States (US) Treasuries and the broad strengthening of the US dollar against other currencies. Foreign investors dumped Indonesian bonds as they rebalanced their portfolios, shifting their holdings away from emerging market assets. As a result, the foreign holdings' share in Indonesia's bond market declined from 41.3% at the end of January to 38.0% on 15 May. Capital outflows from the LCY government bond market were recorded in February and April. Net flows in January–April, however, remained positive at USD0.7 billion. Nonetheless, Indonesia remains vulnerable to the risk of capital outflows, given that foreign investors account for the largest investor group in its bond market.

Global market uncertainties weighed down the Indonesian rupiah as it weakened 2.1% against the US dollar between 1 March and 15 May, making it the worst-performing currency in emerging East Asia during the review period. Rising risks in global financial markets, as liquidity conditions tighten amid expectations of accelerated rate hikes by the US Federal Reserve and the normalization of monetary policies in other advanced economies, rising oil prices, trade rifts, and other geopolitical factors contributed to the overall weakness of the Indonesian rupiah. Bank Indonesia has intervened heavily to stabilize the currency and avert further sell-offs in its financial markets. Aside from external debt repayments, interventions by Bank Indonesia to stabilize the Indonesian rupiah led to the decline of foreign exchange reserves from USD132.0 billion at the end of January to USD124.9 billion at the end of April. Bank Indonesia, however, noted that while reserves declined in April, the reserve asset position is still deemed adequate.

The Board of Governors of Bank Indonesia raised policy rates twice in a period of 2 weeks in May to ensure economic and financial stability amid continued weakness in the Indonesian rupiah. Initially, the central bank raised the 7-day reverse repurchase rate 25 bps in its meeting on 16–17 May. Another 25 bps rate hike was subsequently announced on 30 May when an off-schedule monetary policy meeting was held. Corresponding adjustments were announced for the deposit facility rate to 4.0% and the lending facility rate to 5.5%. The most recent rate hike was a preemptive move by the central bank to stabilize the Indonesian rupiah amid expectations the Federal Reserve will raise its policy rate in its June meeting. Bank Indonesia noted in its statement that "it will make use of available room to raise policy rates in a measured way." Meanwhile, the central bank noted that inflation remains low and is expected to stay within its full-year 2018 target range of 2.5%–4.5%. Consumer price inflation rose 3.4% year-on-year (y-o-y) in April, broadly unchanged from March.

For full-year 2018, Bank Indonesia maintained its economic growth projection of between 5.1% and 5.5%. In the first quarter (Q1) of 2018, real gross domestic product growth dipped slightly to 5.1% y-o-y from a 5.2% y-o-y expansion in the fourth quarter (Q4) of 2017. Domestic consumption remained subdued, expanding less than

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

| | Outstanding Amount (billion) | | | | | | Growth Rate (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Q1 2017 | | Q1 2018 | |
| | IDR | USD | IDR | USD | IDR | USD | q-o-q | y-o-y | q-o-q | y-o-y |
| **Total** | **2,290,966** | **172** | **2,497,112** | **184** | **2,598,075** | **189** | **4.6** | **20.3** | **4.0** | **13.4** |
| Government | 1,970,089 | 148 | 2,109,783 | 156 | 2,197,585 | 160 | 4.9 | 19.4 | 4.2 | 11.5 |
| Central Govt. Bonds | 1,891,043 | 142 | 2,099,766 | 155 | 2,184,588 | 159 | 6.6 | 20.1 | 4.0 | 15.5 |
| of which: *Sukuk* | 274,492 | 21 | 342,989 | 25 | 329,204 | 24 | 11.7 | 34.4 | (4.0) | 19.9 |
| Central Bank Bills | 79,047 | 6 | 10,017 | 0.7 | 12,997 | 0.9 | (25.0) | 6.0 | 29.7 | (83.6) |
| of which: *Sukuk* | 12,273 | 0.9 | 10,017 | 0.7 | 12,997 | 0.9 | 13.8 | 74.4 | 29.7 | 5.9 |
| Corporate | 320,877 | 24 | 387,330 | 29 | 400,490 | 29 | 3.0 | 26.4 | 3.4 | 24.8 |
| of which: *Sukuk* | 11,834 | 0.9 | 15,387 | 1 | 16,449 | 1 | 2.2 | 28.4 | 6.9 | 39.0 |

( ) = negative, IDR = Indonesian rupiah, LCY = local currency, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. Growth rates are calculated from an LCY base and do not include currency effects.
4. The total stock of nontradable bonds as of end-March stood at IDR228.7 trillion.
Sources: Bank Indonesia; Directorate General of Budget Financing and Risk Management, Ministry of Finance; Indonesia Stock Exchange; and Bloomberg LP.

5.0% y-o-y in Q1 2018. Contributing to the slower gross domestic product growth in Q1 2018 was a smaller increase in government expenditures and a worsening trade performance.

## Size and Composition

Indonesia's LCY bond market reached a size of IDR2,598.1 trillion at the end of March, expanding at a faster pace of 4.0% quarter-on-quarter (q-o-q) in Q1 2018 versus 2.9% q-o-q in Q4 2017 (**Table 1**). Compared with the same period a year earlier, LCY bond market growth eased to 13.4% y-o-y from 14.0% y-o-y. The overall growth of the market was largely driven by the government bond segment.

The LCY bond market of Indonesia remains dominated by government bonds, which comprised 84.6% of the total LCY bond stock at the end of March. Corporate bonds accounted for the remaining 15.4% share. A larger share of Indonesia's bond market comprises conventional bonds, representing a share of 86.2%. The remaining 13.8% share is accounted for by bonds structured as *sukuk* (Islamic bonds).

**Government bonds**. The total government bond stock climbed to IDR2,197.6 trillion at the end of March, up 4.2% q-o-q and 11.5% y-o-y. Much of the growth came from increases in the stock of Treasury bills and bonds issued by the Ministry of Finance for budget financing. The outstanding size of central bank bills, or Sertifikat Bank Indonesia (SBI), also contributed to the growth, albeit to a lesser extent.

**Central government bonds**. The stock of central government bonds climbed to IDR2,184.6 trillion at the end of March, on hikes of 4.0% q-o-q and 15.5% y-o-y in Q1 2018. As in past years, the government adopted a strategy of frontloading its issuance in a bid to secure the bulk of its funding requirements within the first half of the year. The government also plans to pursue most of its issuance in domestic currency as part of efforts to lower the foreign currency-to-gross domestic product ratio.

In Q1 2018, gross issuance of Treasury bills and bonds reached IDR219.4 trillion, up 86.5% q-o-q and 24.2% y-o-y. The government conducted 13 auctions of conventional bonds and *sukuk*, with demand remaining strong for most auctions despite escalating global uncertainties. The government accepted bids exceeding its targeted amount in all auctions, except for one *sukuk* auction, in line with its frontloading strategy. Aside from the scheduled auctions, the government also raised IDR8.4 trillion from the sale of retail *sukuk* in March. According to the Ministry of Finance, bond issuance during the quarter (including foreign currency bond issuance) was equivalent to 27.8% of the net target in the 2018 state budget.

**Central bank bills**. The outstanding stock of SBI reached IDR13.0 trillion at the end of March, up 29.7% q-o-q in Q1 2018. On a y-o-y basis, however, central bank bills outstanding fell 83.6% from a high base as a number of conventional SBI remained outstanding in Q1 2017. Beginning in 2017, Bank Indonesia ceased issuance of conventional SBI and limited its issuance to sharia'h-compliant SBI. New issuance of sharia'h-compliant SBI climbed more than twofold to IDR4.3 trillion in Q1 2018 from IDR1.9 trillion in Q4 2017.

**Corporate bonds.** The outstanding size of corporate bonds stood at IDR400.5 trillion, gaining 3.4% q-o-q and 24.8% y-o-y. New issuance of corporate debt contracted 53.7% q-o-q but gained 5.5% y-o-y. Issuance of corporate bonds only resumed in February.

The corporate bond market in Indonesia comprises 115 corporate entities. The aggregate bonds outstanding of the 30 largest bond issuers amounted to IDR295.0 trillion at the end of March, accounting for 73.7% of the aggregate corporate bond stock during the review period (**Table 2**). Banking and financial institutions continued to dominate the top 30, accounting for more than two-thirds of the list. There were 14 state-owned corporations on the list, with six of them landing in the top 10.

The composition of the three largest corporate issuers in Q1 2018 was the same as in Q4 2017. At the top of the list was state-owned Indonesia Eximbank, whose outstanding bonds were IDR30.9 trillion at the end of March, which was lower than its end-December stock of IDR31.4 trillion as the volume of maturing bonds exceeded new issuance in Q1 2018. State-owned lender Bank Rakyat Indonesia was in the second spot with its outstanding bonds rising to IDR26.0 trillion at the end of March on issuance of IDR2.4 trillion during the quarter. In the third spot was Bank Tabungan Negara with bonds valued at IDR18.0 trillion.

A total of 11 corporate institutions issued bonds during the quarter. Most bond issuers had a quarterly aggregate issuance volume of more than IDR1.0 trillion, except for Bank BII (IDR646 billion) and Chandra Asri Petrochemicals (IDR500 billion). A total of 39 new corporate bond series were issued during the quarter, led by banking and financial institutions. Of this total, seven new corporate bond series were structured as *sukuk*.

The five largest corporate bond issuances in Q1 2018 are presented in **Table 3**, all of which were from state-owned firms. Perum Pegadaian, a state-owned pawnshop operator, had the largest aggregate issuance at IDR3.5 trillion. It was followed by building construction firm Waskita Karya with new issuance of IDR3.5 trillion and energy firm PLN with aggregate issuance of IDR3.2 trillion. Rounding out the list were state-owned lenders Indonesia Eximbank and Bank Rakyat Indonesia with issuance of about IDR2.5 trillion each.

**Foreign currency bonds.** In February, the Government of Indonesia raised USD1.25 billion from the sale of global green bonds, marking the first Asian issuance of this type of bond. The bond sale was structured as a *sukuk* with a 5-year maturity and a coupon of 3.75%. In addition, the government sold USD1.75 billion of 10-year global *sukuk*. The bonds carried a coupon of 4.4%.

## Investor Profiles

At the end of March, foreign investors remained the largest investor group in Indonesia's LCY government bond market, with their share of holdings rising to 39.3% of the total market from 38.2% a year earlier (**Figure 2**). In nominal terms, foreign investors held IDR858.8 trillion in March versus IDR723.2 trillion in the same period a year earlier. Foreign holdings, however, have steadily declined in 2018 on a monthly basis through mid-May. The decline has been due mainly to the sell-off in most emerging markets amid rising US Treasury rates and a strengthening US dollar.

A substantial portion of nonresident holdings are in longer-dated maturities (more than 10 years), representing 37.0% of their total bond holdings (**Figure 3**). Also, 35.6% of their holdings are invested in bonds with maturities of more than 5 years to 10 years. Only 5.9% of their holdings are in short-dated maturities (less than 1 year).

Banking institutions were the second-largest investor group in the LCY government bond market at the end of March. Bank holdings, however, slipped to a share of 25.9% at the end of March from 26.2% a year earlier. The bond holdings of insurance institutions also declined to 7.6% of the total from 13.2% during the review period.

All other domestic investors saw increases in their holdings of LCY government bonds, led by pension funds, whose holdings share gained significantly to 9.6% at the end of March from 4.6% a year earlier. Bank Indonesia's holdings of government bonds inched up to 4.3% of the

## 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 | 30,888 | 2.25 | Yes | No | Banking |
| 2. | Bank Rakyat Indonesia | 26,001 | 1.89 | Yes | Yes | Banking |
| 3. | Bank Tabungan Negara | 17,950 | 1.31 | Yes | Yes | Banking |
| 4. | PLN | 17,357 | 1.26 | Yes | No | Energy |
| 5. | Indosat | 16,519 | 1.20 | No | Yes | Telecommunications |
| 6. | Sarana Multi Infrastruktur | 12,900 | 0.94 | Yes | No | Finance |
| 7. | Federal International Finance | 12,562 | 0.92 | No | No | Finance |
| 8. | Bank Pan Indonesia | 12,525 | 0.91 | No | Yes | Banking |
| 9. | Waskita Karya | 12,509 | 0.91 | Yes | Yes | Building Construction |
| 10. | Adira Dinamika Multifinance | 11,749 | 0.86 | No | Yes | Finance |
| 11. | Perum Pegadaian | 11,140 | 0.81 | Yes | No | Finance |
| 12. | Bank Mandiri | 11,000 | 0.80 | Yes | Yes | Banking |
| 13. | Pupuk Indonesia | 9,076 | 0.66 | Yes | No | Chemical Manufacturing |
| 14. | Telekomunikasi Indonesia | 8,995 | 0.66 | Yes | Yes | Telecommunications |
| 15. | Bank Maybank Indonesia | 7,747 | 0.56 | No | Yes | Banking |
| 16. | Sarana Multigriya Finansial | 7,293 | 0.53 | Yes | No | Finance |
| 17. | Hutama Karya | 7,115 | 0.52 | Yes | No | Non-Building Construction |
| 18. | Bank CIMB Niaga | 7,018 | 0.51 | No | Yes | Banking |
| 19. | Astra Sedaya Finance | 6,280 | 0.46 | No | No | Finance |
| 20. | Bank Permata | 5,810 | 0.42 | No | Yes | Banking |
| 21. | Medco-Energi International | 5,000 | 0.36 | No | Yes | Petroleum and Natural Gas |
| 22. | Bank OCBC NISP | 4,924 | 0.36 | No | Yes | Banking |
| 23. | BFI Finance Indonesia | 4,801 | 0.35 | No | Yes | Finance |
| 24. | Maybank Indonesia Finance | 4,425 | 0.32 | No | No | Finance |
| 25. | Permodalan Nasional Madani | 4,246 | 0.31 | Yes | No | Finance |
| 26. | Toyota Astra Financial Services | 4,064 | 0.30 | No | No | Finance |
| 27. | Indofood Sukses Makmur | 4,000 | 0.29 | No | Yes | Food and Beverages |
| 28. | Adhi Karya | 3,747 | 0.27 | Yes | Yes | Building Construction |
| 29. | Mandiri Tunas Finance | 3,675 | 0.27 | No | No | Finance |
| 30. | Indomobil Finance | 3,650 | 0.27 | No | No | Finance |
| **Total Top 30 LCY Corporate Issuers** | | **294,964** | **21.49** | | | |
| **Total LCY Corporate Bonds** | | **400,490** | **29.17** | | | |
| **Top 30 as % of Total LCY Corporate Bonds** | | **73.7%** | **73.7%** | | | |

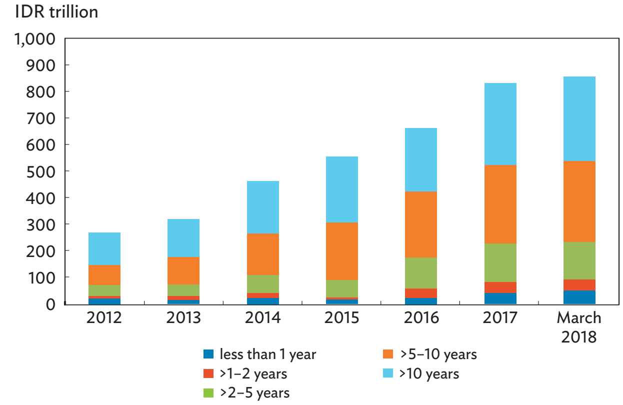
IDR = Indonesian rupiah, LCY = local currency, USD = United States dollar.
Notes:
1. Data as of 31March 2018.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Indonesia Stock Exchange data.

**Table 3: Notable Local Currency Corporate Bond Issuance in the First Quarter of 2018**

| Corporate Issuers | Coupon Rate (%) | Issued Amount (IDR billion) |
|---|---|---|
| Perum Pegadaian | | |
| 370-day bond | 6.00 | 450 |
| 3-year bond | 6.90 | 1,050 |
| 5-year bond | 7.10 | 2,000 |
| Waskita Karya | | |
| 3-year bond | 7.75 | 1,175 |
| 5-year bond | 8.25 | 2,277 |
| PLN | | |
| 5-year bond | 6.50 | 457 |
| 5-year *sukuk ijarah* | 6.50 | 104 |
| 7-year bond | 6.80 | 10 |
| 10-year bond | 7.25 | 341 |
| 10-year *sukuk ijarah* | 7.25 | 88 |
| 15-year bond | 8.20 | 362 |
| 15-year *sukuk ijarah* | 8.20 | 58 |
| 20-year bond | 8.75 | 1,365 |
| 20-year *sukuk ijarah* | 8.75 | 449 |
| Indonesia Eximbank | | |
| 3-year bond | 6.35 | 610 |
| 5-year bond | 6.70 | 1,650 |
| 7-year bond | 6.90 | 206 |
| Bank Rakyat Indonesia | | |
| 5-year bond | 6.65 | 1,837 |
| 7-year bond | 6.90 | 605 |

IDR = Indonesian rupiah.
Note: *Sukuk ijarah* are Islamic bonds backed by a lease agreement.
Source: Indonesia Stock Exchange.

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



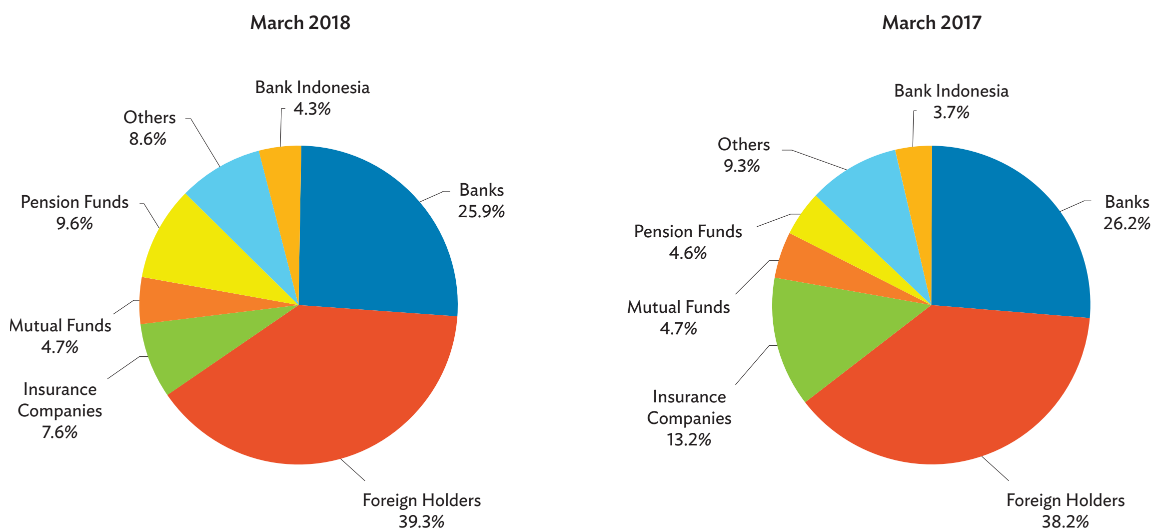

IDR = Indonesian rupiah.
Source: Directorate General of Budget Financing and Risk Management, Ministry of Finance.

total at the end of March as it engaged in bond purchases from the secondary market to help stabilize the foreign exchange market. By mid-May, bond holdings of the central bank had further climbed to a share of 6.8%.

## Ratings Update

On 8 February, Japan Credit Rating Agency (JCR) upgraded Indonesia's foreign currency long-term issuer

**Figure 2: Local Currency Central Government Bonds Investor Profile**




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

rating to BBB and LCY long-term issuer rating to BBB+. Both ratings were assigned a stable outlook by JCR. In its decision to raise the credit ratings one notch higher, JCR noted (i) the improving investment climate as a result of the slew of economic policy packages since September 2015, (ii) accelerating infrastructure development, and (iii) declining private sector debt due to new prudential regulations on external borrowings.

On 7 March, Rating and Investment Information upgraded Indonesia's sovereign credit rating to BBB with a stable outlook from BBB– and a positive outlook. In its decision to upgrade the rating, Rating and Investment Information took note of Indonesia's strengthening economic performance, improvements in the management of the fiscal deficit, and low government debt.

## Policy, Institutional, and Regulatory Developments

### Bank Indonesia to Increase Liquidity in the Banking System

In January, Bank Indonesia announced improvements to the average reserve requirement ratios. The central bank eased the daily minimum reserve requirement of conventional domestic banks to 4.5% of Indonesian rupiah deposits from 5.0%. The 2-week average reserve requirement was, however, raised to 2.0% from 1.5%. This new reserve requirement for domestic conventional banks will take effect on 16 July.

New reserve requirement regulations will also come into effect on 1 October for foreign exchange for conventional domestic banks and Islamic banks. For foreign exchange, the daily minimum reserve requirement for conventional bank was lowered to 6.0% from 8.0%. For Islamic banks, the daily minimum reserve requirement was reduced to 3.0% from 5.0%. In addition, a 2-week average reserve requirement of 2.0% will be implemented for foreign exchange for both conventional banks and Islamic banks.

### IDR-Denominated Bonds to Become Part of Bloomberg Barclay's Global Aggregate Index

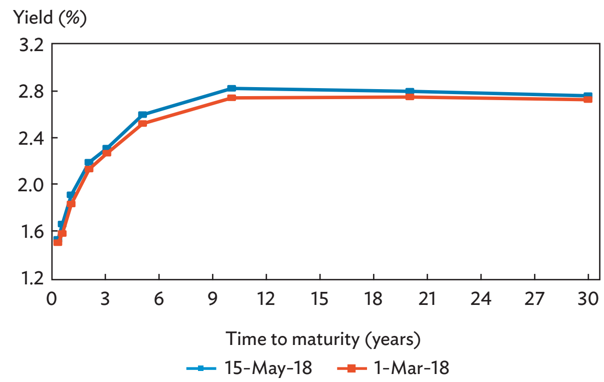
In February, Bloomberg announced that it will include IDR-denominated bonds as part of Bloomberg Barclay's Global Aggregate Index, with effect in May. Some 50 series of IDR-denominated bonds will be added to the index, contributing to its returns by 1 June. This move is expected to boost interest in Indonesian bonds.

# Republic of Korea

## Yield Movements

Between 1 March and 15 May, local currency (LCY) government bond yields in the Republic of Korea rose for all tenors, albeit marginally (**Figure 1**). The rise was most pronounced for tenors from 6 months to 10 years, which increased 7 basis points (bps) on average. Meanwhile, the yield for the 3-month tenor rose 3 bps, while those of the 20-year and 30-year tenors rose 5 bps and 3 bps, respectively. The spread between the 2-year and 10-year yields was barely changed from 60 bps on 1 March to 63 bps on 15 May.

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




Source: Based on data from Bloomberg LP.

Yields in the middle to longer-end of the curve showed a downward trend from 1 March through the middle of April as geopolitical tensions eased. The market expected the Bank of Korea to leave its policy rate unchanged in its 12 April monetary policy meeting on concerns of slowing growth and following a rate hike in its November meeting.

A gradual rise in yields was observed from the middle of April, reversing the earlier downward trend. Upward pressure on yields stemmed from the sustained rise in United States (US) interest rates, particularly after the release of the minutes of the March US Federal Reserve meeting that signaled the possibility of accelerated rate hikes in 2018. Moreover, uncertainty over the possibility and timing of a rate hike by the Bank of Korea remain. In its April monetary policy meeting, the central bank maintained its growth forecast but noted domestic and external risks. The central bank also lowered its inflation forecast from its January forecasts. Despite these developments, some market participants are still pricing in a rate hike this year that would narrow the interest rate differential as US interest rates have surpassed domestic yields.

In its monetary policy board meetings on 14 April and 24 May, the Bank of Korea left its key policy rate, the base rate, unchanged at 1.50%. The central bank stated that the domestic economy continued to post solid growth that is supported by consumption and improved exports. The growth is expected to be sustained as forecasts are still in line with projections made in April of 3.0% growth in full-year 2018. Inflation is also expected to remain benign, but will pick up and trend upward to the target level of 1.6% y-o-y in the second half of 2018. The Bank of Korea stated that it will maintain its accommodative monetary policy stance given benign demand-side inflationary pressures and solid economic growth. However, it will continue to monitor changes in monetary policies in (and trade relations with) advanced economies, rising household debt, and geopolitical risks.

The Republic of Korea's real gross domestic product grew 2.8% year-on-year (y-o-y) in the first quarter (Q1) of 2018, according to the preliminary estimates of the Bank of Korea, the same growth posted in the fourth quarter (Q4) of 2017. By type of expenditure, final consumption expenditure led the growth, rising 4.0% y-o-y in Q1 2018. Exports also improved in Q1 2018 reversing a decline in the previous quarter. Meanwhile, gross fixed capital formation posted a slower increase in Q1 2018. On a quarter-on-quarter (q-o-q) basis, the Republic of Korea's economy expanded 1.0% in Q1 2018, reversing the 0.2% q-o-q contraction posted in Q4 2017.

Consumer price inflation in the Republic of Korea remained subdued in Q1 2018 with a quarterly average of 1.2% y-o-y, down from an average of 1.5% y-o-y in

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

| | Outstanding Amount (billion) | | | | | | Growth Rate (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Q1 2017 | | Q1 2018 | |
| | KRW | USD | KRW | USD | KRW | USD | q-o-q | y-o-y | q-o-q | y-o-y |
| **Total** | **2,094,915** | **1,873** | **2,155,898** | **2,020** | **2,186,525** | **2,056** | **1.4** | **2.5** | **1.4** | **4.4** |
| Government | 872,215 | 780 | 882,781 | 827 | 915,090 | 860 | 2.9 | 3.9 | 3.7 | 4.9 |
| Central Government Bonds | 533,303 | 477 | 546,715 | 512 | 568,774 | 535 | 3.2 | 6.4 | 4.0 | 6.7 |
| Central Bank Bonds | 174,860 | 156 | 170,860 | 160 | 174,790 | 164 | 3.8 | (3.6) | 2.3 | (0.04) |
| Others | 164,052 | 147 | 165,205 | 155 | 171,526 | 161 | 1.1 | 4.5 | 3.8 | 4.6 |
| Corporate | 1,222,700 | 1,093 | 1,273,117 | 1,193 | 1,271,435 | 1,195 | 0.3 | 1.5 | (0.1) | 4.0 |

( ) = negative, KRW = Korean won, LCY = local currency, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. Growth rates are calculated from local currency (LCY) base and do not include currency effects.
4. "Others" comprise Korea Development Bank Bonds, National Housing Bonds, and Seoul Metro Bonds.
5. Corporate bonds include equity-linked securities and derivatives-linked securities.
Sources: The Bank of Korea and *EDAILY BondWeb*.

Q4 2017. Inflation slightly picked up in April to 1.6% y-o-y from 1.3% y-o-y in March due to higher food prices.

## Size and Composition

The Republic of Korea's LCY bond market grew 1.4% q-o-q in Q1 2018 to reach an outstanding size of KRW2,187 trillion (USD2,056 billion) at the end of March (**Table 1**). The quarterly growth was solely driven by the Republic of Korea's government bond market as the stock of corporate bonds fell.

**Government bonds.** The Republic of Korea's LCY government bond market posted robust growth of 3.7% q-o-q in Q1 2018 with outstanding bonds amounting to KRW915 trillion at the end of March. Positive growth rates were registered across all securities issued by government entities, led by the rise in the stock of central government bonds, which were up 4.0% q-o-q to KRW569 trillion as issuance of Korea Treasury Bonds rose during the quarter. The Republic of Korea again implemented a frontloading policy in 2018, resulting in relatively high issuance volume in Q1 2018. The stock of central bank bonds and other government bonds issued by government-related entities also rose in Q1 2018.

Issuance of government bonds surged 24.9% q-o-q to KRW88 trillion in Q1 2018, largely driven by the 37.2% q-o-q jump in issuance of central government bonds as a result of the aforementioned frontloading policy and a low base in Q4 2017. Issuance volume in Q4 2017 was tepid as the government had already met its annual funding requirement in previous quarters. Issuance of Monetary Stabilization Bonds by the Bank of Korea also posted a high growth rate of 13.0% q-o-q.

**Corporate bonds.** The outstanding amount of LCY corporate dipped slightly in Q1 2018, falling 0.1% q-o-q to KRW1,271 trillion at the end of March due to the higher volume of maturities relative to new issuance. **Table 2** lists the top 30 LCY corporate bond issuers in the Republic of Korea at the end of March. Their aggregate bonds of KRW811 trillion comprised 64% of the total LCY corporate bond market. Financial companies such as banks and securities and investment firms continued to dominate the top 30 list in the Republic of Korea. Korea Housing Finance Corporation, a government-related company that provides financial assistance for social housing, remained the largest issuer with outstanding bonds of KRW118 trillion.

Issuance of corporate bonds fell 7.0% q-o-q in Q1 2018 to KRW104 trillion as rising interest rates made it costly for companies to raise funds via the bond market. **Table 3** lists the notable corporate bond issuances in Q1 2018. LG Chemical led all issuers in Q1 2018 with a KRW1.0 trillion multitranche offer comprising KRW300 billion worth of 10-year bonds, KRW270 billion of 7-year bonds, KRW240 billion of 5-year bonds, and KRW190 billion of 3-year bonds. The proceeds are to be invested in the expansion of its production facilities and other financing requirements.

### 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 | 117,782 | 110.7 | Yes | No | No | Housing Finance |
| 2. | NH Investment & Securities | 65,549 | 61.6 | Yes | Yes | No | Securities |
| 3. | Mirae Asset Daewoo Co. | 64,064 | 60.2 | No | Yes | No | Securities |
| 4. | Korea Investment and Securities | 53,584 | 50.4 | No | No | No | Securities |
| 5. | Korea Land & Housing Corporation | 39,606 | 37.2 | Yes | No | No | Real Estate |
| 6. | Industrial Bank of Korea | 39,172 | 36.8 | Yes | Yes | No | Banking |
| 7. | KB Securities | 37,957 | 35.7 | No | No | No | Securities |
| 8. | Hana Financial Investment | 36,654 | 34.5 | No | No | No | Securities |
| 9. | Samsung Securities | 26,849 | 25.2 | No | Yes | No | Securities |
| 10. | Korea Electric Power Corporation | 23,680 | 22.3 | Yes | Yes | No | Electricity, Energy, and Power |
| 11. | Shinhan Bank | 22,312 | 21.0 | No | No | No | Banking |
| 12. | Kookmin Bank | 21,826 | 20.5 | No | No | No | Banking |
| 13. | Korea Expressway | 21,620 | 20.3 | Yes | No | No | Transport Infrastructure |
| 14. | Korea Deposit Insurance Corporation | 19,930 | 18.7 | Yes | No | No | Insurance |
| 15. | Woori Bank | 19,465 | 18.3 | Yes | Yes | No | Banking |
| 16. | Korea Rail Network Authority | 19,300 | 18.1 | Yes | No | No | Transport Infrastructure |
| 17. | Mirae Asset Securities | 16,506 | 15.5 | No | Yes | No | Securities |
| 18. | KEB Hana Bank | 16,380 | 15.4 | No | No | No | Banking |
| 19. | NongHyup Bank | 15,650 | 14.7 | Yes | No | No | Banking |
| 20. | The Export-Import Bank of Korea | 15,610 | 14.7 | Yes | No | No | Banking |
| 21. | Korea Gas Corporation | 13,459 | 12.7 | Yes | Yes | No | Gas Utility |
| 22. | Daishin Securities | 13,203 | 12.4 | No | Yes | No | Securities |
| 23. | Shinhan Card | 12,147 | 11.4 | No | No | No | Credit Card |
| 24. | Small & Medium Business Corporation | 12,143 | 11.4 | Yes | No | No | SME Development |
| 25. | Hyundai Capital Services | 11,839 | 11.1 | No | No | No | Consumer Finance |
| 26. | Shinyoung Securities | 11,479 | 10.8 | No | Yes | No | Securities |
| 27. | Korea Student Aid Foundation | 11,050 | 10.4 | Yes | No | No | Student Loan |
| 28. | KB Kookmin Bank Card | 10,841 | 10.2 | No | No | No | Consumer Finance |
| 29. | Standard Charted Bank Korea | 10,750 | 10.1 | No | No | No | Banking |
| 30. | Samsung Card Co. Ltd. | 10,668 | 10.0 | No | Yes | No | Consumer Finance |
| **Total Top 30 LCY Corporate Issuers** | | **811,075** | **763** | | | | |
| **Total LCY Corporate Bonds** | | **1,271,435** | **1,195** | | | | |
| **Top 30 as % of Total LCY Corporate Bonds** | | **63.8%** | **63.8%** | | | | |

KOSDAQ = Korean Securities Dealers Automated Quotations, KOSPI = Korea Composite Stock Price Index, KRW = Korean won, LCY = local currency, SME = small and medium-sized enterprise, USD = United States dollar.
Notes:
1. Data as of 31 March 2018.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
3. Corporate bonds include equity-linked securities and derivatives-linked securities.
Sources: *AsianBondsOnline* calculations based on Bloomberg LP and *EDAILY BondWeb* data.

**Table 3: Notable Local Currency Corporate Bond Issuance in the First Quarter of 2018**

| Corporate Issuers | Coupon Rate (%) | Issued Amount (KRW billion) |
|---|---|---|
| LG Chem | | |
| 10-year bond | 3.29 | 300 |
| 7-year bond | 3.07 | 270 |
| 5-year bond | 2.88 | 240 |
| 3-year bond | 2.56 | 190 |
| Industrial Bank of Korea | | |
| 2-year bond | 2.22 | 300 |
| 2-year bond | 2.30 | 300 |
| NH Investment Securities | | |
| 5-year bond | 2.97 | 350 |
| 3-year bond | 2.72 | 300 |
| National Agricultural Cooperative | | |
| 5-year bond | 2.75 | 290 |
| 5-year bond | 2.74 | 250 |
| 3-year bond | 2.46 | 100 |

| Corporate Issuers | Coupon Rate (%) | Issued Amount (KRW billion) |
|---|---|---|
| Kookmin Bank | | |
| 2-year bond | 2.22 | 300 |
| 2-year bond | 2.34 | 210 |
| 2-year bond | 2.30 | 110 |
| Hyundai Steel | | |
| 7-year bond | 3.18 | 100 |
| 5-year bond | 2.91 | 330 |
| 3-year bond | 2.53 | 170 |
| SK Hynix Inc | | |
| 5-year bond | 3.01 | 300 |
| KCC Corp | | |
| 3-year bond | 2.68 | 300 |
| Hana Financial Group | | |
| 10-year bond | 2.96 | 280 |

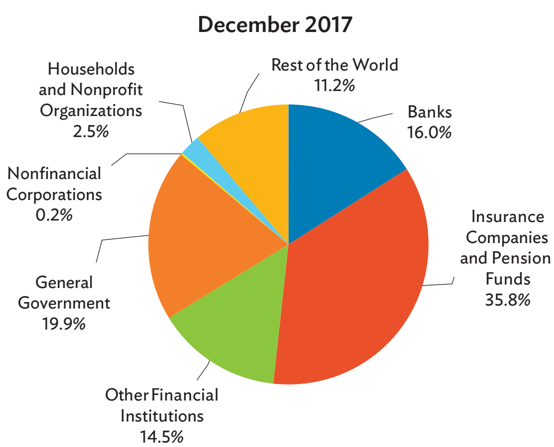
KRW = Korean won.
Source: Based on data from Bloomberg LP.

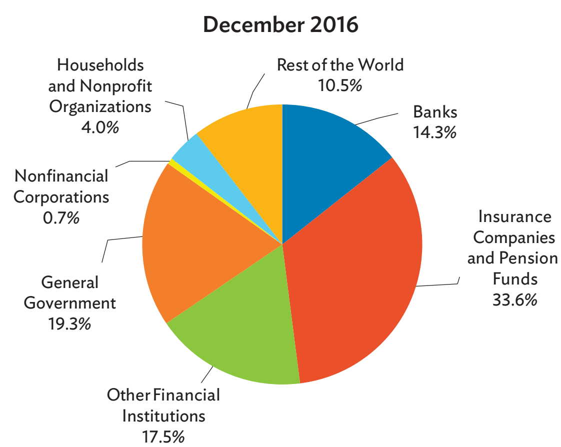
## Investor Profile

The holdings share of insurance companies and pension funds in the Republic of Korea's LCY government bond market rose to 35.8% in December 2017 from 33.6% in December 2016, making it the largest investor group in the LCY government bond market once again (**Figure 2**). The general government was the largest holder with a share of 19.9% in December 2017, up from 19.3% a year earlier. Banks also saw their share rise to 16.0%, while that of other financial institutions declined to 14.5%. Foreign holdings of LCY government bonds inched up to 11.2% from 10.5% during the review period.

The holdings share of insurance companies and pension funds in the Republic of Korea's LCY corporate bond market remained the largest among all investor groups in December 2017, rising to 37.8% from 36.5% in December 2016 (**Figure 3**). The shares of other financial institutions and the general government also rose to 33.7% and 12.8%

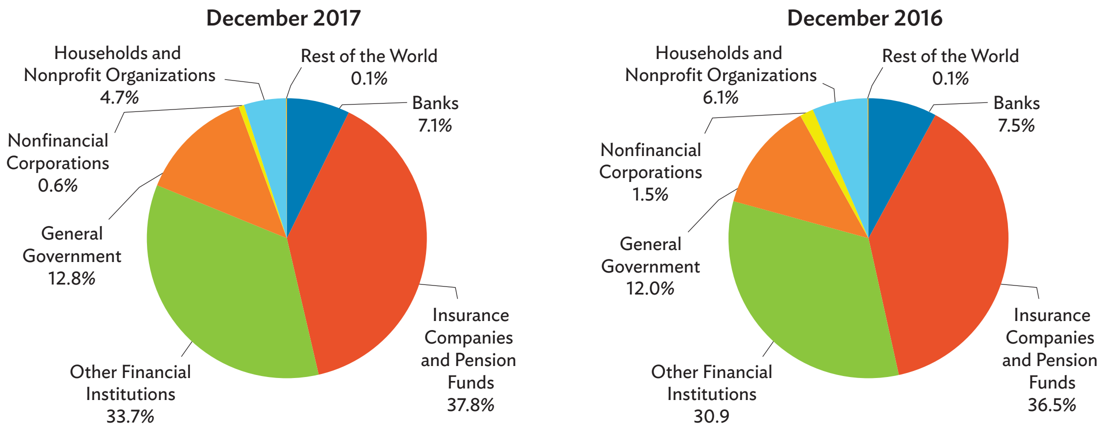
**Figure 2: Local Currency Government Bonds Investor Profile**



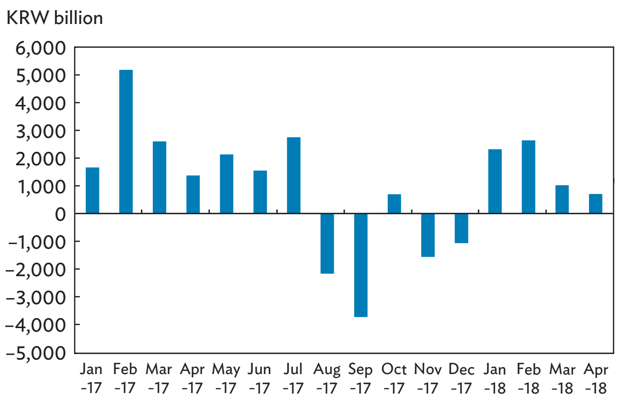

Sources: *AsianBondsOnline* and the Bank of Korea.

**Figure 3: Local Currency Corporate Bonds Investor Profile**



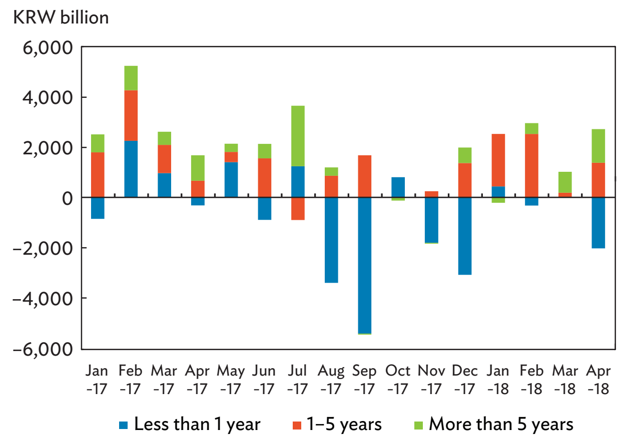

Sources: *AsianBondsOnline* and the Bank of Korea.

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




KRW = Korean won.
Source: Financial Supervisory Service.

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




KRW = Korean won.
Source: Financial Supervisory Service.

from 30.9% and 12.0%, respectively. The share of banks fell to 7.1% from 7.5%. Foreign holdings in the Republic of Korea's LCY corporate bond market remained negligible.

Net foreign inflows in the Republic of Korea's LCY bond market rebounded in 2018 following outflows in Q4 2017, particularly in November and December (**Figure 4**). The net inflows came amid easing geopolitical tensions and a stable currency relative to other economies in the region. January saw net foreign investment inflows of KRW2,322 billion as the large foreign institutional funds that sold their holdings in December, due to portfolio adjustments, reinvested in the market. Net foreign inflows rose further in February to KRW2,641 billion on easing geopolitical tensions as the potential for talks between the Republic of Korea and the Democratic People's Republic of Korea started.

Foreign inflows eased in March to KRW1,024 billion, partly due to the anticipated rate hike by the Federal Reserve, and were mostly concentrated in bonds with tenors of more than 5 years (**Figure 5**). April saw capital outflows from financial markets peaking in the region as US interest rates continued to rise and amid the sustained strength of the US dollar and the possibility of accelerated rate hikes by the Federal Reserve. However, the Republic of Korea was an exception, seeing net inflows in April, albeit at lower volumes than in previous months, given the relatively stable Korean won resulting from the Republic of Korea's positive economic fundamentals and current account surplus. Net foreign inflows into the Republic of Korea's LCY bond market amounted to KRW708 billion in April.

## Policy, Institutional, and Regulatory Developments

### The Republic of Korea Plans KRW3.9 Trillion Supplementary Budget

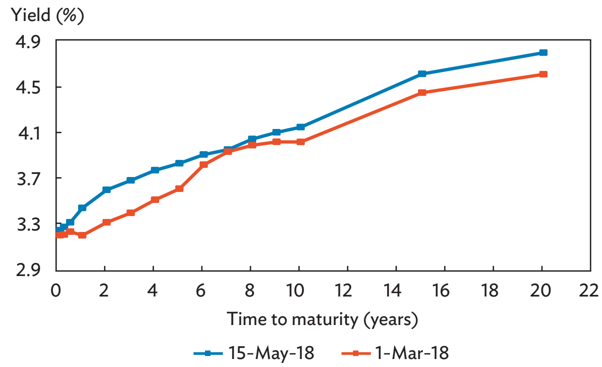
In April, the Government of the Republic of Korea drafted a KRW3.9 trillion supplementary budget proposal to fund programs to support young adult employment and the promotion of local economies. Of the total, KRW2.9 trilllion has been set aside to focus on raising incomes of young adults by providing funding for their startup businesses and creating new jobs, among other projects. A budget of KRW1.0 trillion will be allotted for programs that will widen support for local enterprises. The government plans to finance the budget with KRW2.6 trillion from 2017 fiscal account surpluses and the remaining KRW1.3 trillion from public fund surpluses.

# Malaysia

## Yield Movements

Malaysia's local currency (LCY) government bond yield curve shifted upward for all tenors between 1 March and 15 May (**Figure 1**). Large yield increases were seen in tenors from 1 year to 5 years, with an average gain of 26 basis points (bps). Yield for maturities of 10 years and above increased 16 bps on average. Treasury bills and Treasury bonds with maturities of 6–9 years saw small average increases in their yields of 6 bps each. The yield spread between 2-year and 10-year government bonds narrowed 15 bps during the review period.

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




Source: Based on data from Bloomberg LP.

The upward trend in Malaysia's local government bond yields during the review period was driven by a number of factors. First, the yield increases were in line with rising global yields, especially for United States (US) Treasuries. Expectations of faster monetary policy normalization in the US and other major economies are putting upward pressure on sovereign bond yields. Another factor was Bank Negara Malaysia's (BNM) interest rate hike in January. BNM raised its overnight policy rate by 25 bps to 3.25% as a preemptive move to prevent the buildup of risks from a low-interest-rate environment. Third, the unexpected outcome of the Malaysian general election has made investors cautious in setting their position on local bonds as they wait for more clarity from the new government on its policies. Uncertainties in the near- to medium-term will weigh on the sovereign debt performance, likely translating into higher yields. At the same time, Malaysia's sound macro backdrop may help moderate yield pressures.

BNM maintained its overnight policy rate at 3.25% during its monetary policy meeting on 10 May. Previously, BNM raised the overnight policy rate for the first time since 2014 by 25 bps on 25 January. Inflation is expected to remain manageable, owing to smaller effects from global cost factors. A stronger ringgit relative to 2017 will lessen import costs, despite some observed volatility related to the general election. Core inflation is also expected to remain moderate on the back of stable domestic demand. The Malaysian economy is expected to continue to expand, buoyed by vibrant private sector activity, while growth momentum in the global economy will fuel exports.

Malaysia logged an inflation rate of 1.4% year-on-year (y-o-y) in April, which was little changed from 1.3% y-o-y in March when consumer price inflation reached its lowest level since August 2016. Food and nonalcoholic beverages, which account for the largest share of the Consumer Price Index, have seen continued price moderation since the start of the year. Transportation costs moderated the most among all components of the Consumer Price Index, increasing only 0.4% y-o-y in April after registering double-digit growth in the latter months of 2017. Price declines in transportation were observed in February and March. Core inflation, which excludes commodities that are subject to fluctuations, slowed to 1.5% y-o-y in April from 1.7% y-o-y in March.

The Malaysian ringgit appreciated 1.5% year-to-date through 15 May against the US dollar on account of strong macroeconomic fundamentals and firmer crude oil prices. However, weakness set in during the run-up to the general election. From 1 April to 15 May, the ringgit depreciated 3.0% against the US dollar. Moreover, rising yields in the US may have led to weaker demand for the ringgit. While volatility may persist, downside risks will be fairly contained given the healthy current account, ample foreign reserves, and robust growth outlook.

Malaysia's economy expanded 5.4% y-o-y in the first quarter (Q1) of 2018, underpinned by strong private sector expenditure and a buoyant external sector.

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

| | Outstanding Amount (billion) | | | | | | Growth Rate (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Q1 2017 | | Q1 2018 | |
| | MYR | USD | MYR | USD | MYR | USD | q-o-q | y-o-y | q-o-q | y-o-y |
| **Total** | **1,206** | **272** | **1,286** | **318** | **1,339** | **347** | **3.3** | **5.7** | **4.1** | **11.1** |
| Government | 651 | 147 | 673 | 166 | 705 | 182 | 2.7 | 3.5 | 4.7 | 8.3 |
| Central Government Bonds | 613 | 138 | 637 | 157 | 656 | 170 | 2.7 | 5.9 | 3.0 | 7.1 |
| of which: *Sukuk* | 252 | 57 | 270 | 67 | 287 | 74 | 6.6 | 12.9 | 6.3 | 13.9 |
| Central Bank Bills | 10 | 2 | 7 | 2 | 20 | 5 | 9.7 | (55.3) | 173.5 | 109.4 |
| of which: *Sukuk* | 0 | 0 | 0 | 0 | 1 | 0.3 | – | – | – | – |
| Sukuk Perumahan Kerajaan | 28 | 6 | 28 | 7 | 28 | 7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Corporate | 555 | 125 | 613 | 152 | 635 | 164 | 4.0 | 8.3 | 3.5 | 14.3 |
| of which: *Sukuk* | 409 | 92 | 460 | 114 | 480 | 124 | 3.6 | 11.7 | 4.4 | 17.4 |

( ) = negative, – = not applicable, MYR = Malaysian ringgit, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. Growth rates are calculated from local currency base and do not include currency effects.
4. Sukuk Perumahan Kerajaan are Islamic bonds issued by the Government of Malaysia to refinance funding for housing loans to government employees and to extend new housing loans.
Sources: Bank Negara Malaysia Fully Automated System for Issuing/Tendering (FAST) and Bloomberg LP.

Private consumption and investment grew 6.9% y-o-y and 0.5% y-o-y, respectively, and exports grew 3.7% y-o-y during the quarter. On the production side, all economic sectors expanded, with the services and manufacturing sectors providing the growth impetus at 6.5% y-o-y and 5.3% y-o-y, respectively. Economic growth in Q1 2018 represented the second consecutive quarter of deceleration. BNM expects the Malaysian economy to remain on a favorable growth path in 2018, anchored on domestic demand and spillovers from the external sector.

## Size and Composition

Malaysia's LCY bond market continued to expand in Q1 2018, increasing 4.1% quarter-on-quarter (q-o-q) and 11.1% y-o-y (**Table 1**). The growth rates logged in Q1 2018 were faster compared with the preceding quarter and Q1 2017. Total LCY outstanding bonds amounted to MYR1,339 billion (USD347 billion) at the end of March, comprising a mix of 53% government bonds and 47% corporate bonds. Both segments propelled the growth of the LCY bond market. *Sukuk* (Islamic bonds) dominate Malaysia's LCY bond market with a share of 59.4%. This share is up from 58.9% at the end of December.

Total issuance in Malaysia's bond market reached MYR100.1 billion in Q1 2018. On a q-o-q basis, government bond sales increased while corporate bond sales dropped, leading to moderating issuance growth of 7.8% q-o-q versus 21.1% q-o-q in the fourth quarter (Q4) of 2017. On an annual basis, issuances from both the government and corporate segments saw increases, leading to growth of 30.2% y-o-y in Q1 2018, although this was much slower than growth of 86.6% y-o-y in Q4 2017.

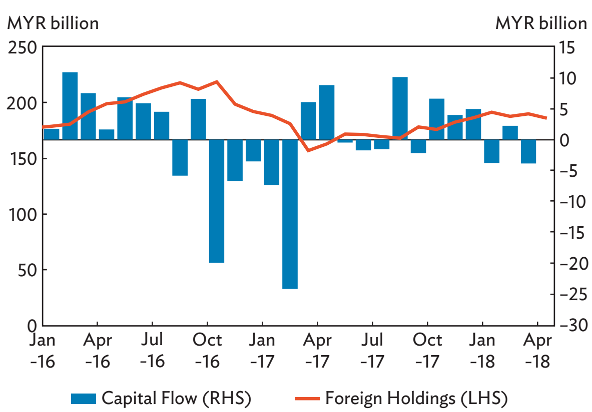
**Government bonds.** Malaysia's LCY government bond market posted growth of 4.7% q-o-q, climbing to a size of MYR705 billion at the end of March. Central government bonds mainly propelled the increase, having the largest share in the government bond stock, with 3.0% q-o-q growth on the back of increased gross issuance and lower redemptions during the period. Central bank bills outstanding more than doubled in Q1 2018 to reach MYR20 billion at the end of March, although they only comprised 3.0% of total government bonds. On a y-o-y basis, the LCY government bond market grew 8.3%.

Total issuance of LCY government bonds in Q1 2018 surged 60.4% q-o-q to MYR57.6 billion. Sales of Malaysian Government Securities (MGS) totaled MYR18.7 billion and sales of Government Investment Issues (GII) totaled MYR14.0 billion, both of which were higher compared with Q4 2017. The markets for MGS and GII received fairly strong support from local as well as foreign investors on the back of a firm Malaysian ringgit. Issuance of Treasury bills and BNM bills surged in Q1 2018 on a q-o-q basis, bringing their combined share to about half of total government issuance from just 21.0% in Q4 2017. BNM issued a total of MYR16.9 billion in Q1 2018, up from MYR6.0 billion in Q4 2017. The bulk of the issuance comprised BNM Interbank Bills (MYR15.9 billion), which were introduced in November 2017 as part of the central bank's initiative to strengthen the financial markets by enhancing short-selling and liquidity operations in the bond market.

Foreign investor holdings of LCY government bonds decreased to MYR185.8 billion at the end of April from MYR186.3 billion at the end of December (**Figure 2**). Foreign holdings at the end of April were equivalent to 27.9% of total LCY government bonds outstanding. The bulk of foreign holdings were in MGS, amounting to MYR162.8 billion. Net foreign inflows of MYR4.9 billion were recorded in January, while net outflows of MYR3.8 billion were recorded in February. Foreign investors became net buyers of local government bonds again in March, registering net inflows of MYR2.2 billion, but this was reversed in April with net outflows of MYR3.9 billion, the largest since March 2017. Rising yields in US Treasuries prompted a sell-off in the Malaysian bond market along with many other emerging East Asian economies. In the first 4 months of 2018, MGS saw cumulative net outflows of MYR1.6 billion, while GII and Treasury bills saw cumulative net inflows.

**Corporate bonds.** The stock of corporate bonds grew 3.5% q-o-q to reach MYR635 billion in Q1 2018. The growth was at par with the growth logged in Q4 2017.

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




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

*Sukuk* remained the dominant corporate bond segment with a share of 75.6% of the total in Q1 2018, slightly higher than in the preceding quarter (74.9%).

Aggregate bonds outstanding among the top 30 corporate issues amounted to MYR359.9 billion at the end of March (**Table 2**). As a share of total LCY corporate bonds, the top 30's bonds outstanding were little changed from the end of December at 56.7%. The top 30 list predominantly comprises firms from the finance industry, who have aggregate outstanding bonds of MYR177.2 billion. On the other hand, firms from the construction industry only account for MYR5.3 billion of outstanding bonds. Danainfra Nasional, the government's funding vehicle for infrastructure projects, remained the largest issuer at the end of March with MYR46.6 billion of LCY bonds outstanding.

The corporate bond market saw subdued issuance activity in Q1 2018, with issuances declining 25.4% q-o-q to MYR42.5 billion. Monthly declines were observed in January and February; in March, issuance rebounded with a notable increase in medium-term notes. Issuance in March, however, were not enough for the Q1 2018 tally to match the amount issued in Q4 2017. Lower corporate issuance during Q1 2018 can be attributed to upward pressures from higher interest rates as a result of BNM's monetary policy rate hike, expectations of accelerated monetary tightening from the US Federal Reserve as inflationary pressures heighten, and portfolio reallocations to safe havens.

Edra Energy had the highest total issuance during Q1 2018, amounting to MYR5.1 billion, which included a 6-year Islamic medium-term note amounting to MYR235 million (**Table 3**). Other notable corporate issuances in the quarter were from Danga Capital, Danainfra Nasional, Prasarana, and Cagamas.

## Investor Profile

Social security institutions had the largest holdings of government bonds among all investor groups at the end of December with a share of 32.0%, up from 28.3% in December 2016 (**Figure 3**). Foreign investor holdings of LCY government bonds were down at the end of December 2017 to 29.2% from 32.2% a year earlier. Subsequent to the outflow of foreign funds in late 2017, foreign holdings have remained relatively low. Financial

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

| Issuers | | Outstanding Amount | | State-Owned | Listed Company | Type of Industry |
|---|---|---|---|---|---|---|
| | | LCY Bonds (MYR billion) | LCY Bonds (USD billion) | | | |
| 1. | Danainfra Nasional | 46.6 | 12.1 | Yes | No | Finance |
| 2. | Cagamas | 33.3 | 8.6 | Yes | No | Finance |
| 3. | Project Lebuhraya Usahasama | 30.2 | 7.8 | No | No | Transport, Storage, and Communications |
| 4. | Prasarana | 27.7 | 7.2 | Yes | No | Transport, Storage, and Communications |
| 5. | Perbadanan Tabung Pendidikan Tinggi Nasional | 19.0 | 4.9 | Yes | No | Finance |
| 6. | Khazanah | 17.0 | 4.4 | Yes | No | Finance |
| 7. | Pengurusan Air | 14.4 | 3.7 | Yes | No | Energy, Gas, and Water |
| 8. | Maybank | 14.3 | 3.7 | No | Yes | Banking |
| 9. | CIMB Bank | 13.2 | 3.4 | Yes | No | Finance |
| 10. | Lembaga Pembiayaan Perumahan Sektor Awam | 10.8 | 2.8 | Yes | No | Property and Real Estate |
| 11. | Sarawak Energy | 10.5 | 2.7 | Yes | No | Energy, Gas, and Water |
| 12. | Danga Capital | 10.0 | 2.6 | Yes | No | Finance |
| 13. | Jimah East Power | 9.0 | 2.3 | Yes | No | Energy, Gas, and Water |
| 14. | Maybank Islamic | 8.5 | 2.2 | No | Yes | Banking |
| 15. | CIMB Group Holdings | 7.9 | 2.1 | Yes | No | Finance |
| 16. | Bank Pembangunan Malaysia | 7.3 | 1.9 | Yes | No | Banking |
| 17. | GOVCO Holdings | 7.3 | 1.9 | Yes | No | Finance |
| 18. | YTL Power International | 7.3 | 1.9 | No | Yes | Energy, Gas, and Water |
| 19. | Rantau Abang Capital | 7.0 | 1.8 | Yes | No | Finance |
| 20. | Sarawak Hidro | 6.5 | 1.7 | Yes | No | Energy, Gas, and Water |
| 21. | Public Bank | 6.4 | 1.6 | No | No | Banking |
| 22. | ValueCap | 6.0 | 1.6 | Yes | No | Finance |
| 23. | Turus Pesawat | 5.3 | 1.4 | Yes | No | Transport, Storage, and Communications |
| 24. | Aman Sukuk | 5.3 | 1.4 | Yes | No | Construction |
| 25. | Edra Energy | 5.1 | 1.3 | No | Yes | Energy, Gas, and Water |
| 26. | 1Malaysia Development | 5.0 | 1.3 | Yes | No | Finance |
| 27. | Celcom Networks | 5.0 | 1.3 | No | No | Transport, Storage, and Communications |
| 28. | GENM Capital | 5.0 | 1.3 | No | No | Finance |
| 29. | Putrajaya Holdings | 4.6 | 1.2 | Yes | No | Property and Real Estate |
| 30. | Jambatan Kedua | 4.6 | 1.2 | Yes | No | Transport, Storage, and Communications |
| **Total Top 30 LCY Corporate Issuers** | | **359.9** | **93.2** | | | |
| **Total LCY Corporate Bonds** | | **634.5** | **164.2** | | | |
| **Top 30 as % of Total LCY Corporate Bonds** | | **56.7%** | **56.7%** | | | |

LCY = local currency, MYR = Malaysian ringgit, USD = United States dollar.
Notes:
1. Data as of 31 March 2018.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bank Negara Malaysia Fully Automated System for Issuing/Tendering (FAST) data.

**Table 3: Notable Local Currency Corporate Bond Issuance in the First Quarter of 2018**

| Corporate Issuers | Coupon Rate (%) | Issued Amount (MYR million) |
|---|---|---|
| Danga Capital | | |
| 5-year Islamic MTN | 5.02 | 2,000 |
| 5-year Islamic MTN | 4.94 | 1,000 |
| Danainfra Nasional | | |
| 15-year Islamic MTN | 5.24 | 1,000 |
| 10-year Islamic MTN | 5.11 | 1,500 |
| Prasarana | | |
| 15-year Islamic MTN | 5.25 | 1,200 |
| Cagamas | | |
| 3-year Islamic MTN | 4.17 | 1,000 |
| Edra Energy | | |
| 6-year Islamic MTN | 6.43 | 235 |

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

institutions were the third-largest holders of government bonds at 27.7%. BNM continued to have the smallest share of LCY government bond holdings.

The investor profile of the LCY corporate bond market was marginally changed in March 2018 from a year earlier (**Figure 4**). Domestic commercial and Islamic banks remained the largest corporate bond holders, with their share inching up to 40.3% at the end of March from 38.9% a year earlier. Life insurance companies were the second-largest holders at the end of March, but their share was slightly down to 37.9% from 39.2%. General insurance companies continued to have the smallest share at 1.9% at the end of March, which was lower compared with a year earlier.

## Ratings Update

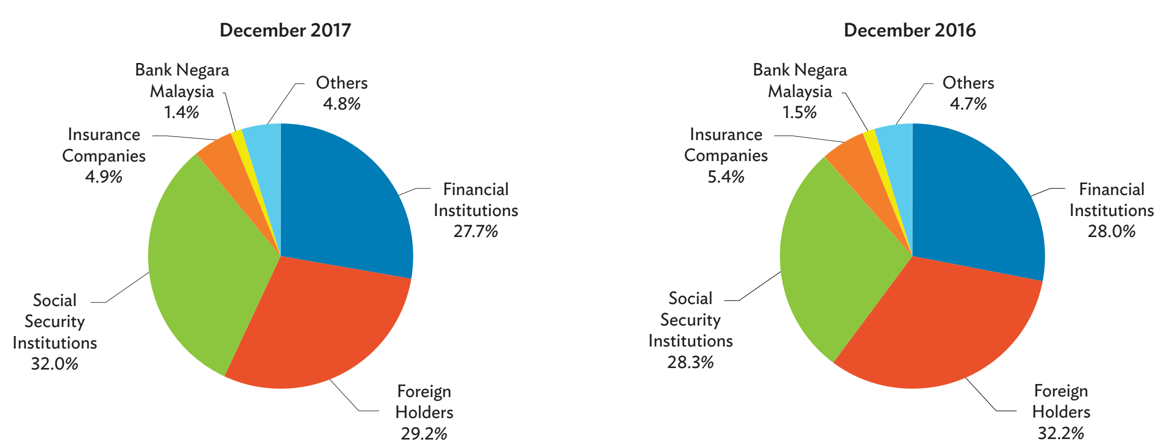
### RAM Ratings Affirms Malaysia's Sovereign Ratings

RAM Ratings reaffirmed Malaysia's respective sovereign ratings of ${}_{g}A_{2}$ (global), ${}_{sea}$AAA (ASEAN), and AAA (domestic-scale), with a stable outlook, on 19 January. According to RAM Ratings, the affirmation reflected Malaysia's resilient economic growth and the government's fiscal consolidation efforts. Malaysia's economy is estimated to have grown 5.8% in 2017, which exceeded the rating agency's expectation of 4.5%. The government's lower fiscal deficit target of 2.8% of gross domestic product in 2018, compared with 3.0% in 2017, is seen as being supported by solid domestic economic conditions and the gradual recovery in oil prices.

### Fitch Ratings Affirms Malaysia's Sovereign Ratings

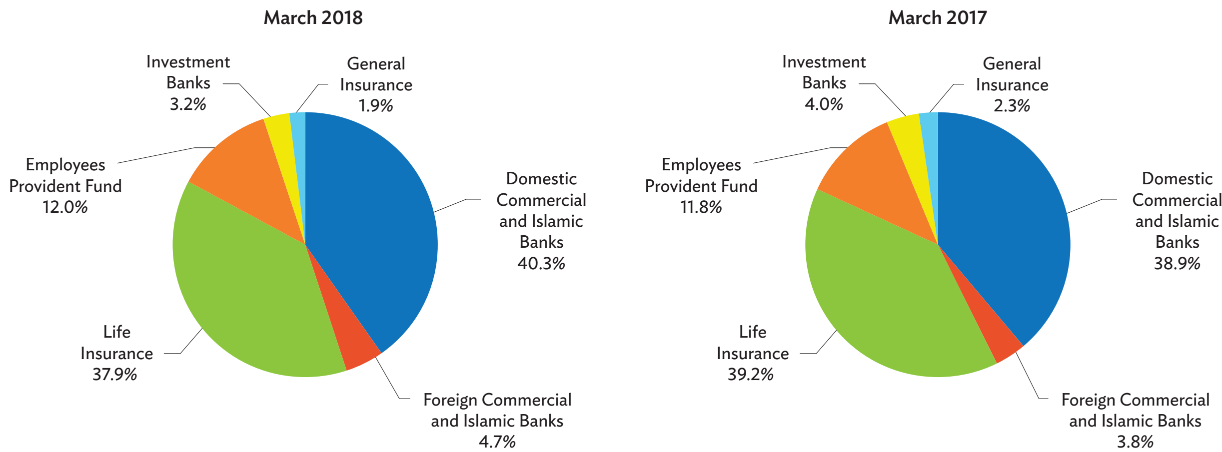
Fitch Ratings affirmed Malaysia's long-term, foreign-currency issuer default rating at A– with a stable outlook on 28 March. The affirmation reflected Malaysia's resilient economic growth, which is backed by strong private consumption and investment spending, and exports amid a strong external environment. The rating affirmation

**Figure 3: Local Currency Government Bonds Investor Profile**




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

**Figure 4: Local Currency Corporate Bonds Investor Profile**




Note: The Employees Provident Fund's bond holdings data are as of 31 December 2017, as data are based on the EPF's annual report.
Sources: Bank Negara Malaysia and the Employees Provident Fund.

also reflected Malaysia's net external creditor position as a result of sustained current account surpluses, the large external assets of the private sector, and falling government debt and deficit levels. According to Fitch Ratings, Malaysia's rating is constrained by weaker governance standards and lower levels of income per capita and human development compared to the median for sovereigns rated in the A category. It also cited downside risks, such as threats of trade protectionism and tighter global monetary conditions, which could leave Malaysia's open economy vulnerable to shocks.

## Policy, Institutional, and Regulatory Developments

### Prime Minister Razak Announces Plan to Establish Malaysia–Singapore Stock Trading Link

Prime Minister Najib Razak announced on 6 February an initiative for Malaysia to collaborate with Singapore in establishing a stock market trading link. According to Prime Minister Razak, the Malaysia–Singapore link will spur further mutual benefits and harness the economic potential of both countries as it will provide investors with seamless access to each other's markets, which together have a combined market capitalization of more than USD1.2 trillion and 1,600 public listed companies.

### Bursa Malaysia Implements Intraday Short-Selling

Bursa Malaysia implemented the intraday short-selling (IDSS) framework on 16 April to boost liquidity in the local stock exchange. The measure is part of Bursa Malaysia's efforts to build a dynamic and vibrant capital market that will further improve flexibility for investors to refine their trading and risk management strategies. The list of approved stocks for IDSS comprises 280 securities and the list will be reviewed every 6 months. Compliance requirements and safeguards will also be put into place that include market controls for IDSS suspensions if a stock price falls more than 15% from the previous day's closing price or if the gross short-selling volume exceeds the daily maximum limit of 3% of outstanding shares per security.

# Philippines

## Yield Movements

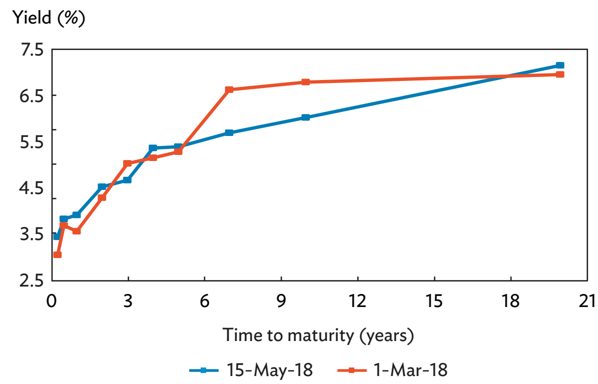
Between 1 March and 15 May, local currency (LCY) government bond yields in the Philippines rose for all tenors except the 3-year, 7-year, and 10-year maturities, which fell 36 basis points (bps), 94 bps, and 77 bps, respectively (**Figure 1**). The yield for the 3-month tenor increased the most, rising 39 bps, followed by the 1-year bond yield, which increased 35 bps. The 5-year maturity experienced the smallest yield increase at just 11 bps. The yield spread between the 2-year and 10-year tenors narrowed 101 bps during the period.

According to the Bureau of the Treasury, interest rates continued to trend upward as some investors anticipate additional rate hikes by the Bangko Sentral ng Pilipinas (BSP) following the most recent increase on 10 May. Moreover, demand for higher rates for longer tenors reflects investor concerns about inflation. In the BSP's monetary board meeting on 10 May, it updated its full-year 2018 inflation forecast to 4.6% from the previous forecast of 3.9%.

Consumer prices in the Philippines grew at a faster rate of 4.5% year-on-year (y-o-y) in April compared with 4.3% y-o-y in March. The inflation rate has accelerated since the start of the year, resulting in year-to-date inflation of 4.1% y-o-y through April, exceeding the BSP's target of 2.0%–4.0% for 2018. The BSP expects inflation to remain elevated throughout the year before eventually tapering toward the midpoint of the target range in 2019.

In its monetary policy meeting on 10 May, the BSP's monetary board hiked key interest rates 25 bps in response to year-to-date inflation through April having breached the central bank's target range. The overnight reverse repurchase rate was increased to 3.25%, while the overnight lending and deposit rates were raised to 3.75% and 2.75%, respectively. According to the central bank, inflation and elevated risks prompted the board to act, and the move will help temper the buildup in inflation expectations. It noted, however, that the rate hike may prevent the government from achieving its target of 7.0%–8.0% economic growth for full-year 2018.

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




Source: Based on data from Bloomberg LP.

The gross domestic product (GDP) of the Philippines grew 6.8% y-o-y during the first quarter (Q1) of the year. On the demand side, public construction, government consumption, and capital formation exhibited upbeat performances. Domestic demand is likely to increase following the recently approved tax reform package, which is expected to boost personal income and consumption. On the supply side, growth in the industrial sector was backed by expansion in the manufacturing and construction subsectors, owing to the government's Build, Build, Build program. Despite the challenges, the National Economic and Development Authority continues to believe that the country's growth rate implies that the Philippines has the potential to become an upper-middle-income economy.

The Philippine peso breached the PHP52 per USD1 level in mid-February and it has been hovering at this level since then. After Standard & Poor's Global Ratings upgraded its credit outlook for the Philippine economy from stable to positive in April, the peso began to strengthen against the greenback, staying below the PHP52 per USD1 level. The International Monetary Fund has not expressed concern about foreign exchange pressures since it is mostly tighter global conditions rather than domestic factors that are putting pressure on the peso. However, trade tensions between the People's Republic of China and the United States should

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

| | Outstanding Amount (billion) | | | | | | Growth Rate (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Q1 2017 | | Q1 2018 | |
| | PHP | USD | PHP | USD | PHP | USD | q-o-q | y-o-y | q-o-q | y-o-y |
| **Total** | **4,943** | **98** | **5,475** | **110** | **5,593** | **107** | **1.5** | **5.0** | **2.1** | **13.1** |
| Government | 4,011 | 80 | 4,456 | 89 | 4,479 | 86 | 0.8 | 3.0 | 0.5 | 11.7 |
| Treasury Bills | 286 | 6 | 314 | 6 | 332 | 6 | (0.6) | 2.6 | 5.7 | 16.2 |
| Treasury Bonds | 3,656 | 73 | 4,101 | 82 | 4,106 | 79 | 1.0 | 3.3 | 0.1 | 12.3 |
| Others | 69 | 1 | 40 | 1 | 40 | 1 | 0.003 | (8.4) | (0.01) | (42.0) |
| Corporate | 932 | 19 | 1,020 | 20 | 1,114 | 21 | 4.6 | 14.6 | 9.2 | 19.5 |

( ) = negative, LCY = local currency, PHP = Philippine peso, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg end-of-period LCY–USD rates are used.
3. Growth rates are calculated from an LCY base and do not include currency effects.
4. "Others" comprise bonds issued by government agencies, entities, and corporations for which repayment is guaranteed by the Government of the Philippines. This includes bonds issued by Power Sector Assets and Liabilities Management (PSALM) and the National Food Authority, among others.
5. Peso Global Bonds (PHP-denominated bonds payable in US dollars) are not included.
Sources: Bloomberg LP and Bureau of the Treasury.

be monitored carefully as an escalation could lead to a sudden tightening in global liquidity.

## Size and Composition

Total LCY bonds in the Philippines reached PHP5,593 billion (USD107 billion) at the end of March on growth of 2.1% quarter-on-quarter (q-o-q) and 13.1% y-o-y (**Table 1**). The increase in outstanding bonds in the LCY bond market is supported by increases in both the government and corporate bond segments. At the end of March, government bonds represented 80.1% of total outstanding bonds, while corporate bonds comprised only 19.9%.

**Government bonds.** LCY government bonds outstanding registered growth of 0.5% q-o-q and 11.7% y-o-y in Q1 2018, amounting to PHP4,479 billion at the end of March. Treasury bills mainly supported the q-o-q growth of LCY government bonds, expanding 5.7% q-o-q, while Treasury bonds grew at a slower pace of 0.1% q-o-q. The bonds of government-owned and -controlled corporations declined on a q-o-q and y-o-y basis in Q1 2018 as some bonds matured and there were no new issuances during the quarter.

Total LCY issuance during Q1 2018 amounted to PHP296.4 billion, a decline of 37.2% q-o-q and 7.4% y-o-y. The Government of the Philippines issued just PHP233.2 billion during the quarter, about half of what was issued in the last quarter of 2017, representing a decline of 47.2% q-o-q. The notable dip in issuance was due to the massive amount of Retail Treasury Bonds offered in the last quarter of 2017, amounting to PHP130 billion and resulting in a high base, and the government's move to borrow more from abroad in 2018. In 2017, the cabinet-level Development Budget Coordination Committee raised from 20% to 26% the share of external borrowings for 2018, while it kept the 80:20 ratio in favor of domestic sources for 2019–2022. Treasury bill issuance stood at PHP165.2 billion in Q1 2018, while issuance of Treasury bonds reached PHP68.0 billion.[18]

Auctions for Treasury bills were generally met with strong demand during Q1 2018. The auction of 91-day Treasury bills was a mix of being partially and fully awarded. On the other hand, the 182-day and 364-day Treasury bills were all partially awarded. For Treasury bonds, all auctions of 5-year, 10-year, and 20-year bonds were partially awarded. The 7-year bond auction was completely rejected.

The Bureau of the Treasury plans to issue a total of PHP195 billion of Treasury bills and PHP130 billion of Treasury bonds during the second quarter (Q2) of 2018.

[18] Treasury bills and bonds include reissues and special bills.

**Corporate bonds**. The LCY corporate bond market continued to be active during Q1 2018, growing 9.2% q-o-q and 19.5% y-o-y, reaching a size of PHP1,114 billion.

The banking sector continued to be the dominant issuer in the Philippines in Q1 2018, accounting for 28.8% of the LCY corporate bond market at the end of March (**Figure 2**). This was an increase over its 26.1% share at the end of March 2017. The property and utilities sectors increased their market shares during the review period to 27.6% and 11.3% from 25.2% and 10.6%, respectively. On the other hand, holding firms and the transport and telecommunications sectors declined in terms of market share to 21.3%, 2.8%, and 3.5% from 22.5%, 4.5%, and 4.1%, respectively.

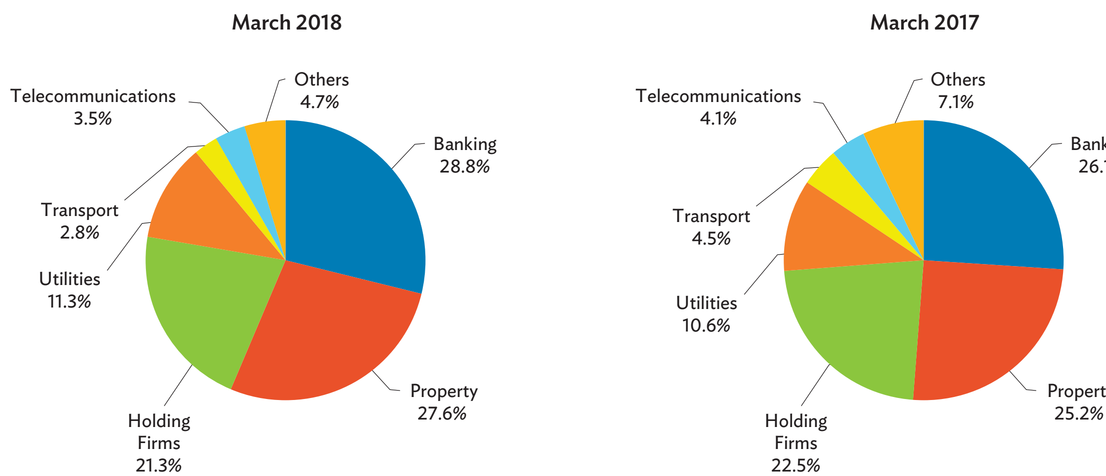
At the end of March 2018, the LCY corporate bonds outstanding of the top 30 issuers amounted to PHP978.1 billion, representing 87.8% of the Philippines' LCY corporate bond market (**Table 2**). Property firms Ayala Land and SM Prime Holdings topped the list with PHP94.7 billion and PHP93.8 billion of LCY bonds outstanding, respectively. By sector, banks accounted for the majority of outstanding bonds among the top 30 issuers with PHP397.6 billion, followed by the property sector with PHP264.4 billion.

A total of PHP63.2 billion worth of LCY corporate bonds were issued during Q1 2018 on growth of 108.7% q-o-q and 20.8% y-o-y. SM Prime Holdings, San Miguel, and Maynilad together accounted for PHP58.5 billion, or 92.5% of all new issuances for the quarter. SM Prime Holdings offered 5-year and 7-year bonds, while San Miguel and Maynilad both issued 5-year, 7-year, and 10-year bonds. Three other companies tapped the local bond market for funding purposes during the quarter: Union Bank, Phoenix Petroleum, and SL Agritech. SM Prime Holdings issued bonds for the expansion of its real estate projects, while San Miguel planned to use the proceeds to refinance debt and fund investment in various businesses.

Notable corporate issuers in Q1 2018 are listed in **Table 3**. Water service provider Maynilad had the largest bond issuance amounting to PHP14.8 billion for a 5-year bond carrying a coupon rate of 6.56%. The issuance comprised 23.4% of all LCY corporate bond issuance during the quarter. Holding firm San Miguel and property firm SM Prime Holdings likewise also each issued 5-year corporate bonds. San Miguel's issue amounted to PHP13.15 billion with a coupon rate of 6.25%. SM Prime Holdings issued a PHP10.0 billion bond with a 5.66% coupon rate.

**Foreign currency bonds.** The Government of the Philippines issued a USD2.0 billion 10-year global bond with a 3.0% coupon in January, USD1.25 billion of which was allocated for a 1-day accelerated switch tender offer, while the remaining USD0.75 billion was allocated to raise fresh money. The bond offering marked the Philippines'

**Figure 2: Local Currency Corporate Bonds Outstanding by Sector**




Source: Based on data from Bloomberg LP.

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

| | Issuers | Outstanding Amount | | State-Owned | Listed Company | Type of Industry |
|---|---|---|---|---|---|---|
| | | LCY Bonds (PHP billion) | LCY Bonds (USD billion) | | | |
| 1. | Ayala Land | 94.7 | 1.8 | No | Yes | Property |
| 2. | SM Prime Holdings | 93.8 | 1.8 | No | Yes | Property |
| 3. | Metrobank | 59.2 | 1.1 | No | Yes | Banking |
| 4. | BDO Unibank | 58.8 | 1.1 | No | Yes | Banking |
| 5. | SM Investments | 52.3 | 1.0 | No | Yes | Holding Firms |
| 6. | San Miguel | 50.0 | 1.0 | No | Yes | Holding Firms |
| 7. | Philippine National Bank | 47.5 | 0.9 | No | Yes | Banking |
| 8. | Ayala Corporation | 40.0 | 0.8 | No | Yes | Holding Firms |
| 9. | San Miguel Brewery | 34.8 | 0.7 | No | No | Brewery |
| 10. | Maynilad | 33.9 | 0.6 | No | No | Water |
| 11. | Aboitiz Equity Ventures | 32.0 | 0.6 | No | Yes | Holding Firms |
| 12. | Security Bank | 31.6 | 0.6 | No | Yes | Banking |
| 13. | JG Summit | 30.0 | 0.6 | No | Yes | Holding Firms |
| 14. | Meralco | 29.3 | 0.6 | No | Yes | Electricity, Energy, and Power |
| 15. | Filinvest Land | 29.0 | 0.6 | No | Yes | Property |
| 16. | East West Bank | 26.8 | 0.5 | No | No | Banking |
| 17. | RCBC | 23.6 | 0.5 | No | Yes | Banking |
| 18. | GT Capital | 22.0 | 0.4 | No | Yes | Holding Firms |
| 19. | PLDT | 20.6 | 0.4 | No | Yes | Telecommunications |
| 20. | Vista Land | 19.9 | 0.4 | No | Yes | Property |
| 21. | Petron | 18.6 | 0.4 | No | Yes | Electricity, Energy, and Power |
| 22. | Bank of the Philippine Islands | 17.2 | 0.3 | No | Yes | Banking |
| 23. | Union Bank | 17.0 | 0.3 | No | Yes | Banking |
| 24. | Chinabank | 15.9 | 0.3 | No | Yes | Banking |
| 25. | Doubledragon | 15.0 | 0.3 | No | Yes | Property |
| 26. | SMC Global Power | 15.0 | 0.3 | No | No | Electricity, Energy, and Power |
| 27. | Aboitiz Power | 13.0 | 0.2 | No | Yes | Electricity, Energy, and Power |
| 28. | Globe Telecom | 12.5 | 0.2 | No | Yes | Telecommunications |
| 29. | NLEX Corporation | 12.1 | 0.2 | No | No | Transport |
| 30 | Megaworld | 12.0 | 0.2 | No | Yes | Property |
| **Total Top 30 LCY Corporate Issuers** | | **978.1** | **18.7** | | | |
| **Total LCY Corporate Bonds** | | **1,113.8** | **21.3** | | | |
| **Top 30 as % of Total LCY Corporate Bonds** | | **87.8%** | **87.8%** | | | |

LCY = local currency, PHP = Philippine peso, USD = United States dollar.
Notes:
1. Data as of 31 March 2018.
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.

return to the international bond market for the first time since 2014 as part of the government's liability management exercise, which seeks significant cost savings by reducing overall interest expenses. The proceeds from the issuance will support the government's Build, Build, Build program; increase its presence in the global market; and promote financial inclusion for all Filipinos.

In March, the Philippines became the first Association of Southeast Asian Nations sovereign to issue renminbi-

**Table 3: Notable Local Currency Corporate Bond Issuance in the First Quarter of 2018**

| Corporate Issuers | Coupon Rate (%) | Issued Amount (PHP billion) |
|---|---|---|
| Maynilad | | |
| 5-year bond | 6.56 | 14.80 |
| San Miguel | | |
| 5-year bond | 6.25 | 13.15 |
| SM Prime Holdings | | |
| 5-year bond | 5.66 | 10.00 |
| 7-year bond | 6.08 | 10.00 |

PHP = Philippine peso.
Source: Bloomberg LP.

denominated bonds, which are also known as panda bonds. The issuance, which amounted to CNY1.46 billion, has a tenor of 3 years with a coupon rate of 5.00%. The issuance allowed the private sector to access the onshore Chinese bond market. Moreover, the successful issuance, which was rated AAA by the China Lianhe Credit Rating, reflected investors' confidence in the growth prospects and creditworthiness of the economy. The panda bonds were oversubscribed, indicating a good reception in the People's Republic of China and other offshore markets.

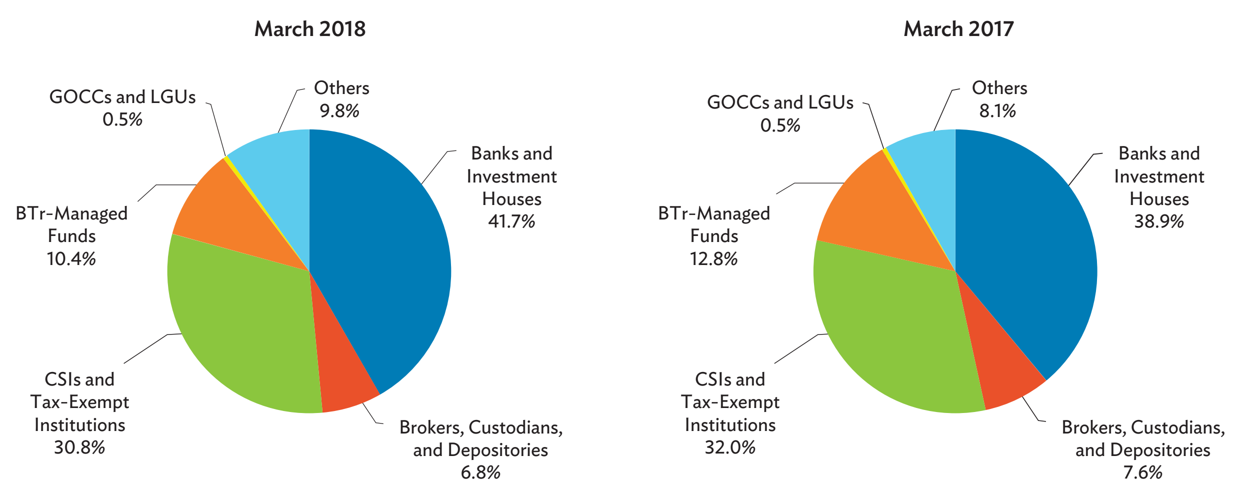
## Investor Profile

Banks and investment houses continued to be the largest investors in LCY government bonds in Q1 2018, comprising a share of 41.7% of all investors at the end of March (**Figure 3**). This was followed by contractual savings and tax-exempt institutions with a 30.8% share of all investors. Government-owned and -controlled corporations and local government units accounted for the smallest share among all investor groups with only 0.5% of total investments. In nominal terms, the LCY government bond holdings of banks and investment houses registered the highest growth rate at 20.5% y-o-y, followed by growth of 18.1% y-o-y for government-owned and -controlled corporations and local government units. The LCY government bond holdings of contractual savings and tax-exempt institutions grew 8.3% y-o-y, while those of brokers, custodians, and depositories expanded only 0.5% y-o-y. The Bureau of the Treasury's bond holdings declined, registering negative growth of 8.9% y-o-y.

## Ratings Update

Standard & Poor's raised its credit rating outlook for the Philippines to positive from stable while retaining its current BBB rating. According to the credit rating agency, the country has exhibited strong economic growth, a healthy external position, and improved policy-making. It is expected that the Philippines will have sustainable public finances and balanced growth over the next 24 months. Furthermore, Standard & Poor's hailed the country's effective fiscal policies as evidenced by the improved quality of expenditures and limited fiscal deficits. In spite of the administration's Build, Build, Build program, which will entail significant infrastructure

**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.

spending, the recently passed comprehensive tax reform program will ensure that government finances are sustainable.

## Policy, Institutional, and Regulatory Developments

### BSP Reduces Reserve Requirement Ratio

At its 24 May meeting, as part of its financial market reform agenda, the Monetary Board of the BSP made an operational adjustment by reducing the reserve requirement ratio for banks by 1 percentage point to 18.0%. The BSP had recently lowered the reserve requirement ratio to 19.0% from 20.0% in March. The gradual reduction is intended to make the BSP less reliant on reserve requirements in managing liquidity risk in the financial system. The reduction will be implemented starting 1 June 2018.

### The Philippines to Borrow PHP325 billion in Q2 2018

The Government of the Philippines plans to issue a total of PHP325 billion in Q2 2018, comprising PHP195 billion of Treasury bills and PHP130 billion of Treasury bonds. This compares with the Q1 2018 offering of PHP240 billion, which consisted of PHP120 billion each of Treasury bills and Treasury bonds. Auctions in Q2 2018 will be conducted on a weekly basis. The increase in domestic borrowing during the past few quarters has funded the growth of the national budget and supported the infrastructure spending program of the current administration.

# Singapore

## Yield Movements

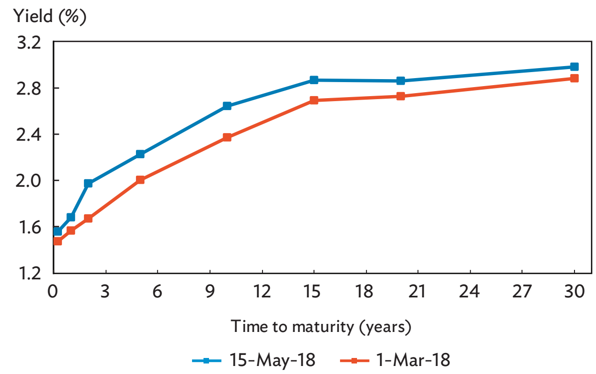
Between 1 March and 15 May, local currency (LCY) government bond yields in Singapore rose for all tenors (**Figure 1**). The yield for 2-year Singapore Government Securities (SGS) bonds increased the most at 30 basis points (bps). This was followed by yields on bonds with 5-year and 10-year maturities, which advanced 22 bps and 27 bps, respectively. The yield for the 3-month Treasury bill increased the least, gaining only 8 bps. The yield spread between the 2-year and 10-year tenors narrowed 3 bps between 1 March and 15 May.

Singapore's interest rates mainly tracked interest rate movements in the United States (US) during the review period; all tenors on the US yield curve likewise increased between 1 March and 15 May. The slower rise at the long-end of the curve signaled that investors believe long-term growth optimism remain intact. The US Federal Reserve raised benchmark interest rates last March, but investors are still expecting two to three more rate hikes this year, as indicated by the movements of futures contracts, despite low inflationary pressures.

During its policy meeting on 13 April, the Monetary Authority of Singapore (MAS) decided to increase slightly the slope of the Singapore dollar nominal effective exchange rate policy band from zero. However, the width and center of the policy band were left unchanged. The MAS cited its forecast of steady economic growth and core inflation in 2018, as well as uncertainty over the possibility of a trade war between the US and the People's Republic of China, as justification for the tightening. The MAS emphasized that the policy stance would help stabilize medium-term prices, which is consistent with a modest and gradual appreciation path for the Singapore dollar nominal effective exchange rate policy band.

Consumer price inflation in February was 0.5% year-on-year (y-o-y). It eased to 0.2% y-o-y in March and further to 0.1% y-o-y in April. The decelerating inflation mainly resulted from lower price gains for retail items, which slowed to 0.9% y-o-y in April from 1.3% y-o-y in March. Meanwhile, the MAS core inflation indicator edged down to 1.3% y-o-y from 1.5% y-o-y during the same period.

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




Source: Based on data from Bloomberg LP.

The MAS and the Ministry Trade and Industry said in their outlook that oil prices may affect inflation as global oil prices increase, but the current volatility in prices will taper in succeeding quarters as supplies respond to demand. Global food prices are also expected to increase moderately in 2018. Domestically, wage growth will pick up a faster pace, but will be countered by retail rents remaining subdued due to market competition. The MAS projects that inflation will be in the upper half of the forecast range of 0.0%–1.0%. Likewise, core inflation is expected to rise gradually in 2018, moving toward the upper half of the forecast range of 1.0%–2.0%.

The Singapore dollar fared better during the first quarter (Q1) of 2018 compared with its 2017 closing rate of 1.336 against the US dollar. The SGD–USD exchange rate stayed below this level throughout Q1 2018, reaching its strongest level of SGD1.307 per US dollar in January after the US Department of the Treasury commented that it welcomed a weaker US dollar. In April, the Singapore dollar started to depreciate even with the announcement by MAS that it would allow the Singapore dollar to gradually appreciate against the US dollar. The US dollar strengthened against the Singapore dollar, along with other Asian currencies, threatening to wipe out earlier gains. Through 15 May,

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

| | Outstanding Amount (billion) | | | | | | Growth Rate (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Q1 2017 | | Q1 2018 | |
| | SGD | USD | SGD | USD | SGD | USD | q-o-q | y-o-y | q-o-q | y-o-y |
| **Total** | **348** | **249** | **363** | **272** | **376** | **287** | **3.5** | **7.2** | **3.7** | **8.2** |
| Government | 205 | 147 | 222 | 166 | 230 | 175 | 6.1 | 11.5 | 3.7 | 12.2 |
| SGS Bills and Bonds | 117 | 84 | 116 | 87 | 121 | 92 | 6.2 | 6.4 | 4.2 | 3.5 |
| MAS Bills | 88 | 63 | 106 | 79 | 109 | 83 | 6.0 | 19.2 | 3.1 | 23.8 |
| Corporate | 143 | 102 | 141 | 106 | 146 | 112 | (0.1) | 1.5 | 3.8 | 2.5 |

( ) = negative, LCY = local currency, MAS = Monetary Authority of Singapore, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, SGD = Singapore dollar, SGS = Singapore Government Securities, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Government bonds are calculated using data from national sources. Corporate bonds are based on *AsianBondsOnline* estimates.
2. SGS bills and bonds do not include the special issue of Singapore Government Securities held by the Singapore Central Provident Fund.
3. Bloomberg LP end-of-period LCY–USD rates are used.
4. Growth rates are calculated from an LCY base and do not include currency effects.
Sources: Bloomberg LP, Monetary Authority of Singapore, and Singapore Government Securities.

the Singapore dollar had depreciated 0.64% year-to-date against the greenback.

Singapore's economy grew 4.4% y-o-y in Q1 2018, up from an expansion of 3.6% y-o-y in the fourth quarter of 2017. The biggest contributors to growth were the manufacturing, finance, and insurance sectors. Output in all sectors expanded in Q1 2018, except for the construction sector. The Ministry of Trade and Industry revised its gross domestic product outlook for 2018 to a range of 2.5%–3.5%, from the previously announced range of 1.5%–3.5%, due to the economy's strong performance in Q1 2018.

## Size and Composition

Singapore's LCY bonds outstanding amounted to SGD376 billion (USD287 billion) at the end of March, an expansion of 3.7% quarter-on-quarter (q-o-q) and 8.2% y-o-y (**Table 1**). This was an improvement from the 3.5% q-o-q and 7.2% y-o-y growth during Q1 2017. The expansion was supported by the increase in outstanding government bills and bonds, as well as outstanding corporate bonds.

**Government bonds.** LCY government bonds outstanding grew 3.7% q-o-q and 12.2% y-o-y in Q1 2018, expanding to SGD230 billion at the end of March from SGD222 billion at the end of December. The expansion was driven by SGS bills and bonds which increased 4.2% q-o-q to reach a size of SGD121 billion. MAS bills also contributed to the expansion, increasing 3.1% q-o-q, amounting to SGD109 billion.

Three SGS bonds were reopened during the quarter—a 2-year, a 5-year, and a 30-year bond—all of which were oversubscribed. All MAS bill auctions in Q1 2018 were successful, with each issuance being oversubscribed as indicated by bid-to-cover ratios greater than 1.0.

Total LCY government bills and bonds issued during Q1 2018 amounted to SGD116.5 billion, comprising SGD109.4 billion of MAS bills and only SGD7.1 billion of SGS bills and bonds. In January, SGD2.2 billion worth of SGS bills were redeemed.

**Corporate bonds.** Outstanding LCY corporate bonds expanded 3.8% q-o-q and 2.5% y-o-y in Q1 2018, increasing to SGD146 billion from SGD141 billion in the previous quarter.

The top 30 LCY corporate bond issuers accounted for 47.8% of all corporate bonds outstanding with an aggregate total of SGD70.0 billion (**Table 2**). Singapore's Housing & Development Board (HDB) topped the list with SGD22.4 billion of outstanding bonds, which comprised 15.3% of all outstanding corporate bonds. The state-owned Land Transport Authority (LTA) was a distant second with SGD5.0 billion, representing 3.4% of all corporate bonds outstanding. There were seven state-owned corporations among the top 30 issuers, coming from the real estate, transportation, finance, utilities, and marine services industries. By sector, the real estate industry accounted for almost half (48.7%) of the corporate bonds outstanding with SGD34.1 billion. This was followed by the finance sector with SGD10.4 billion, or 14.9% of the outstanding corporate bonds.

**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 | 22.4 | 17.1 | Yes | No | Real Estate |
| 2. | Land Transport Authority | 5.0 | 3.8 | Yes | No | Transportation |
| 3. | Temasek Financial I | 3.6 | 2.7 | Yes | No | Finance |
| 4. | Frasers Property | 3.4 | 2.6 | No | Yes | Real Estate |
| 5. | United Overseas Bank | 3.4 | 2.6 | No | Yes | Banking |
| 6. | Singapore Airlines | 3.0 | 2.3 | Yes | Yes | Transportation |
| 7. | Capitaland | 2.8 | 2.1 | Yes | Yes | Real Estate |
| 8. | Mapletree Treasury Services | 2.1 | 1.6 | No | No | Finance |
| 9. | SP Powerassets | 1.9 | 1.4 | No | No | Utilities |
| 10. | Keppel Corporation | 1.7 | 1.3 | No | Yes | Diversified |
| 11. | Capitaland Treasury | 1.6 | 1.2 | No | No | Finance |
| 12. | DBS Group Holdings | 1.5 | 1.2 | No | Yes | Banking |
| 13. | Olam International | 1.4 | 1.1 | No | Yes | Consumer Goods |
| 14. | Public Utilities Board | 1.4 | 1.1 | Yes | No | Utilities |
| 15. | GLL IHT | 1.4 | 1.0 | No | No | Real Estate |
| 16. | Hyflux | 1.2 | 0.9 | No | Yes | Utilities |
| 17. | Singtel Group Treasury | 1.2 | 0.9 | No | No | Finance |
| 18. | City Developments | 1.1 | 0.9 | No | Yes | Real Estate |
| 19. | CMT MTN | 1.0 | 0.8 | No | No | Finance |
| 20. | National University of Singapore | 1.0 | 0.8 | No | No | Education |
| 21. | Sembcorp Industries | 1.0 | 0.8 | No | Yes | Shipbuilding |
| 22. | Ascendas REIT | 1.0 | 0.7 | No | Yes | Finance |
| 23. | Mapletree Commercial Trust | 0.9 | 0.7 | No | Yes | Real Estate |
| 24. | Sembcorp Financial Services | 0.9 | 0.6 | No | No | Engineering |
| 25. | DBS Bank | 0.8 | 0.6 | No | Yes | Banking |
| 26. | Keppel Land International | 0.7 | 0.6 | No | No | Real Estate |
| 27. | CCT MTN | 0.7 | 0.6 | No | No | Real Estate |
| 28. | StarHub | 0.7 | 0.5 | No | Yes | Diversified |
| 29. | Perennial Real Estate Holdings | 0.7 | 0.5 | No | Yes | Real Estate |
| 30. | PSA Corporation | 0.7 | 0.5 | Yes | No | Marine Services |
| **Total Top 30 LCY Corporate Issuers** | | **70.0** | **53.4** | | | |
| **Total LCY Corporate Bonds** | | **146.4** | **111.6** | | | |
| **Top 30 as % of Total LCY Corporate Bonds** | | **47.8%** | **47.8%** | | | |

LCY = local currency, SGD = Singapore dollar, USD = United States dollar.
Notes:
1. Data as of 31 March 2018.
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.

A total of SGD5.5 billion of LCY corporate bonds were issued during Q1 2018, an expansion of 38.2% q-o-q and 32.1% y-o-y. Singapore's 2018 budget for infrastructure spending called for new infrastructure bond issuance to fund projects such as the construction of Changi Airport Terminal 5, the Integrated Waste Management Facility, the KL-Singapore High Speed Rail, and the JBSingapore Rapid Transit System Link. Government-owned companies LTA and HDB accounted for 47.5% of all LCY corporate bond issuance during the quarter with a combined total of SGD2.6 billion worth of bonds to finance rail and public housing infrastructure. Notable LCY corporate bond issuances in Q1 2018 are listed in **Table 3**. The LTA issued 10-year and 30-year bonds with coupon rates of 2.75% and 3.35%, respectively, with the latter being the single largest corporate bond sale in Q1 2018 amounting to SGD1,200 million. The HDB offered 5-year and 10-year bonds with coupon rates of 2.30% and 2.32%, respectively. GLL IHT and Frasers Property both issued perpetual bonds, the former offering a SGD400 million bond with a 4.60% coupon rate and the latter issuing a SGD300 million bond with a 4.38% coupon.

**Table 3: Notable Local Currency Corporate Bond Issuance in the First Quarter of 2018**

| Corporate Issuers | Coupon Rate (%) | Issued Amount (SGD million) |
|---|---|---|
| Land Transport Authority | | |
| 30-year bond | 3.35 | 1,200 |
| Housing and Development Board | | |
| 5-year bond | 2.30 | 600 |
| 10-year bond | 2.32 | 515 |
| GLL IHT | | |
| Perpetual bond | 4.60 | 400 |
| Frasers Property | | |
| Perpetual bond | 4.38 | 300 |

SGD = Singapore dollar.
Source: Bloomberg LP.

## Policy, Institutional, and Regulatory Developments

### MAS to Introduce Central Clearing for OTC Derivatives

On 2 May, the MAS announced new regulations, effective 1 October, that will require over-the-counter (OTC) derivatives to be cleared through central counterparties. The regulations are meant to mitigate the credit risk of nonstandard derivatives. The regulations will cover the widely traded Singapore and US dollar fixed-for-floating interest rate swaps, and will require banks with gross notional outstanding OTC derivative transactions exceeding USD20 billion to clear their trades with central counterparties regulated by the MAS.

### Singapore and Japan to Renew Swap Arrangement

On 4 May, the MAS and the Ministry of Finance of Japan expressed their intent to renew the existing Bilateral Swap Agreement that enables both countries to swap their respective local currencies in exchange for US dollars in times of need. The two countries are also in talks to include the Japanese yen as an additional swap currency of choice. The move to renew the arrangement is for the mutual benefit of Singapore and Japan in order to facilitate financial and economic stability and promote the use of local currency in the region. The bilateral swap arrangement will expire on 21 May.

### Singapore and Brunei Darussalam Sign Cooperation Agreement for Financial Innovation

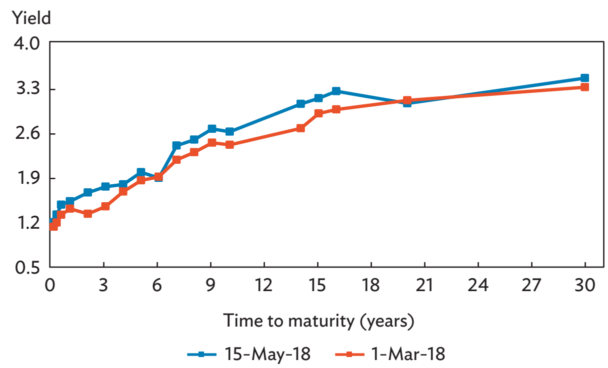
On 12 May, the MAS and the Autoriti Monetari Brunei Darussalam signed an agreement to enhance innovation in financial services between the two countries. The FinTech Cooperation Agreement will help in information sharing regarding FinTech, and in promoting joint innovation projects between Singapore and Brunei Darussalam. Businesses and consumers will also benefit from the enhancement of the retail payment ecosystem between the two countries.

# Thailand

## Yield Movements

Between 1 March and 15 May, local currency (LCY) government bond yields in Thailand climbed for all tenors except the 6-year and 20-year maturities, which posted slight declines (**Figure 1**). The yields for bonds with maturities of 1 year or less climbed an average of 12 basis points (bps), while yields for the 2-year to 16-year tenors gained an average of 24 bps. The spread between the 2-year and 10-year maturities narrowed from 108 bps on 1 March to 95 bps on 15 May.

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




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

Thailand's LCY government bond yields declined earlier this year as bond prices were buoyed by strong investor demand. Toward the end of April, however, bond yields gradually climbed, largely influenced by the rise in yields for United States (US) Treasuries and the broad strengthening of the US dollar. Economic conditions in the US have gained further traction, signaling that the Federal Reserve will proceed with its monetary policy normalization. Tightening liquidity conditions alongside other external risks, including uncertainties relating to rising oil prices and US trade policies, led investors to pull out from most emerging financial markets including Thailand. In April, net foreign bond outflows amounting to USD0.8 billion were recorded in the Thai bond market, following 3 consecutive months of net foreign bond inflows.

Despite rising global risks, the Monetary Policy Committee of the Bank of Thailand decided to hold its policy rate unchanged at 1.50% in its meeting on 16 May. The committee noted that the domestic economy continues to strengthen, buoyed by growth in the external sector and improvements in domestic demand. The central bank deemed its current accommodative policy conducive to ensuring financial stability but noted the risks in the global economy.

In the first quarter (Q1) of 2018, gross domestic product growth accelerated to 4.8% year-on-year (y-o-y) from 4.0% y-o-y in the previous quarter. All major expenditure groups posted positive y-o-y growth during the quarter. Domestic consumption grew 3.6% y-o-y in Q1 2018, up from 3.4% in the fourth quarter (Q4) of 2017. Growth accelerated for government expenditure (1.9%) and investment (3.4%) after each had expanded less than 0.5% y-o-y in the previous quarter. Export growth was strong at 6.0% y-o-y in Q1 2018, although slightly down from the 7.4% y-o-y expansion in Q4 2017, buoyed by improving external demand. The strong economic performance in Q1 2018 led the Ministry of Finance to revise its full-year 2018 growth projection to 4.5% from an earlier estimate of 4.2%.

Consumer price inflation rose 1.1% y-o-y in April, up from 0.8% y-o-y in March. The uptick in inflation also contributed to the upward pressure on yields.

## Size and Composition

The size of Thailand's LCY bond market stood at THB11.4 trillion at the end of March, with growth slowing on both a q-o-q and y-o-y basis (**Table 1**). Growth eased to 1.2% q-o-q in Q1 2018 following a 2.2% q-o-q expansion in Q4 2017. On a y-o-y basis, bond market growth slowed to 2.2% from 3.9% in the same period.

The Thai bond market was the third-largest bond market in emerging East Asia at the end of March. Among members of the Association of Southeast Asian Nations, its market is the largest in terms of size, accounting for a 27.2% share of the group's total bonds outstanding. The Thai bond market is largely dominated by government bonds with a share of 71.9%; the remaining 28.1% share

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

| | Outstanding Amount (billion) | | | | | | Growth Rate (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 2017 | | Q4 2017 | | Q1 2018 | | Q1 2017 | | Q4 2018 | |
| | THB | USD | THB | USD | THB | USD | q-o-q | y-o-y | q-o-q | y-o-y |
| **Total** | **11,163** | **325** | **11,279** | **346** | **11,410** | **366** | **2.8** | **9.4** | **1.2** | **2.2** |
| Government | 8,249 | 240 | 8,196 | 252 | 8,203 | 263 | 3.9 | 8.4 | 0.1 | (0.6) |
| Government Bonds and Treasury Bills | 4,203 | 122 | 4,334 | 133 | 4,425 | 142 | 4.1 | 6.0 | 2.1 | 5.3 |
| Central Bank Bonds | 3,279 | 95 | 3,042 | 93 | 2,969 | 95 | 4.6 | 14.3 | (2.4) | (9.4) |
| State-Owned Enterprise and Other Bonds | 766 | 22 | 820 | 25 | 808 | 26 | 0.1 | (0.9) | (1.4) | 5.5 |
| Corporate | 2,914 | 85 | 3,083 | 95 | 3,208 | 103 | (0.2) | 12.1 | 4.0 | 10.1 |

( ) = negative, LCY = local currency, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, THB = Thai baht, USD = United States dollar, y-o-y = year-on-year.
Notes:
1. Calculated using data from national sources.
2. Bloomberg LP end-of-period LCY–USD rates are used.
3. Growth rates are calculated from an LCY base and do not include currency effects.
Sources: Bank of Thailand and Bloomberg LP.

is accounted for by corporate bonds. Growth during Q1 2018 was largely driven by the corporate bond segment.

**Government bonds.** At the end of March, the total LCY government bond stock rose to THB8.2 trillion on marginal growth of 0.1% q-o-q. On a y-o-y basis, however, the stock of government bonds contracted 0.6%. Growth in the government bond market came solely from increases in the stock of Treasury bills and government bonds, which rose 2.1% q-o-q in Q1 2018. In contrast, the stock of central bank bills and bonds declined 2.4% q-o-q as maturities exceeded new issuance. The stock of state-owned enterprise bonds also fell 1.4% q-o-q in Q1 2018.

Total issuance of government bonds in Q1 2018 rose 9.9% q-o-q to reach THB1.8 trillion. Of this amount, about 65% was accounted for by central bank bills and bonds.

**Corporate bonds.** At the end of March, the outstanding stock of corporate bonds reached THB3.2 trillion on growth of 4.0% q-o-q and 10.1% y-o-y. The increase may be attributed to the rush of issuance from corporates ahead of plans by the Securities and Exchange Commission, Thailand to issue stricter regulations on bond issuance by June. In Q1 2018, corporate bond issuance totaled THB463 billion on growth of 3.0% q-o-q hike and 25.9% y-o-y.

The outstanding size of the 30 largest corporate bond issuers in Thailand stood at THB1.8 trillion at the end of March (**Table 2**). This represents nearly 55% of the total corporate bond stock at the end of the review period. There were five state-owned firms on the list, two of which landed in the top five. A total of 23 firms on the list were also tapping the equity market for their funding needs.

The largest corporate bond issuer at the end of March was CP All with outstanding bonds of THB181.8 billion. A close second was state-owned Siam Cement with bonds valued at THB181.5 billion. In the third spot was another state-owned firm, PTT, with outstanding bonds amounting to THB129.3 billion.

Some of the largest corporate bond issues during the quarter are presented in **Table 3**. Thai Beverage raised a total of THB50 billion from the sale of multitranche bonds in March. Telecommunications service provider True Corporation followed next with total issuance amounting to THB17.5 billion. Bank of Ayudhya and Krungsriayudhya Card Company each issued THB15 billion of bonds during the quarter.

## Investor Profile

**Central government bonds**. The largest investor group in Thailand's central government bond market comprised financial corporations, whose holdings accounted for a 43.3% share of the aggregate central government bond stock at the end of March, up from a 41.8% share a year earlier (**Figure 2**). Other major investor groups that posted increases in their holdings of central government bonds during the review period include other depository corporations and foreign investors. On the other hand, the

**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 | 181.8 | 5.8 | No | Yes | Commerce |
| 2. | Siam Cement | 181.5 | 5.8 | Yes | Yes | Construction Materials |
| 3. | PTT | 129.3 | 4.1 | Yes | Yes | Energy and Utilities |
| 4. | Bank of Ayudhya | 123.0 | 3.9 | No | Yes | Banking |
| 5. | Berli Jucker | 122.0 | 3.9 | No | Yes | Food and Beverage |
| 6. | Charoen Pokphand Foods | 93.5 | 3.0 | No | Yes | Food and Beverage |
| 7. | Thai Airways International | 68.1 | 2.2 | Yes | Yes | Transportation and Logistics |
| 8. | True Move H Universal Communication | 60.7 | 1.9 | No | No | Communications |
| 9. | Toyota Leasing Thailand | 59.3 | 1.9 | No | No | Finance and Securities |
| 10. | Tisco Bank | 51.9 | 1.7 | No | No | Banking |
| 11. | Indorama Ventures | 51.4 | 1.6 | No | Yes | Petrochemicals and Chemicals |
| 12. | Thai Beverage | 50.0 | 1.6 | No | No | Food and Beverage |
| 13. | Banpu | 47.3 | 1.5 | No | Yes | Energy and Utilities |
| 14. | Krungthai Card | 44.8 | 1.4 | Yes | Yes | Banking |
| 15. | Land & Houses | 41.5 | 1.3 | No | Yes | Property and Construction |
| 16. | Advanced Wireless | 40.2 | 1.3 | No | Yes | Communications |
| 17. | Mitr Phol Sugar | 34.9 | 1.1 | No | No | Food and Beverage |
| 18. | Thai Union Group | 33.8 | 1.1 | No | Yes | Food and Beverage |
| 19. | TPI Polene | 33.0 | 1.1 | No | Yes | Property and Construction |
| 20. | DTAC Trinet | 31.5 | 1.0 | No | Yes | Communications |
| 21. | Bangkok Commercial Asset Management | 30.8 | 1.0 | No | No | Finance and Securities |
| 22. | PTT Exploration and Production Company | 29.6 | 0.9 | Yes | Yes | Energy and Utilities |
| 23. | CPF Thailand | 29.0 | 0.9 | No | Yes | Food and Beverage |
| 24. | CH. Karnchang | 28.5 | 0.9 | No | Yes | Property and Construction |
| 25. | Thanachart Bank | 28.5 | 0.9 | No | No | Banking |
| 26. | Bangkok Expressway and Metro | 28.2 | 0.9 | No | Yes | Transportation and Logistics |
| 27. | Bangkok Dusit Medical Services | 28.0 | 0.9 | No | Yes | Medical |
| 28. | Kasikorn Bank | 28.0 | 0.9 | No | Yes | Banking |
| 29. | True Corp | 27.6 | 0.9 | No | Yes | Communications |
| 30. | Thai Oil | 23.5 | 0.8 | No | Yes | Energy and Utilities |
| **Total Top 30 LCY Corporate Issuers** | | **1,761.1** | **56.5** | | | |
| **Total LCY Corporate Bonds** | | **3,207.8** | **102.9** | | | |
| **Top 30 as % of Total LCY Corporate Bonds** | | **54.9%** | **54.9%** | | | |

LCY = local currency, THB = Thai baht, USD = United States dollar.
Notes:
1. Data as of 31 March 2018.
2. State-owned firms are defined as those in which the government has more than a 50% ownership stake.
Source: *AsianBondsOnline* calculations based on Bloomberg LP data.

**Table 3: Notable Local Currency Corporate Bond Issuance in the First Quarter of 2018**

| Corporate Issuers | Coupon Rate (%) | Issued Amount (THB million) |
|---|---|---|
| Thai Beverage | | |
| 2-year bond | 1.79 | 5,000 |
| 3-year bond | 2.10 | 11,200 |
| 6-year bond | 2.76 | 10,000 |
| 7-year bond | 3.15 | 9,300 |
| 10-year bond | 3.60 | 14,500 |
| True Corporation | | |
| 1-year bond | 2.78 | 10,000 |
| 1.01-year bond | 2.78 | 7,500 |
| Bank of Ayudhya | | |
| 3-year bond | 1.91 | 15,000 |
| Krungsriayudhya Card Company | | |
| 1-year bond | 1.60 | 7,000 |
| 2-year bond | 1.66 | 8,000 |

THB = Thai baht.
Source: Bloomberg LP.

central government posted the largest decline in holdings, with its share declining from 15.7% at the end of March 2017 to 11.6% at the end of March 2018. The central bank posted a decline in holdings from 5.5% to 3.0% in the same period.

**Central bank bonds.** At the end of March, depository corporations were the largest holders of central bank bonds, accounting for more than a third of the total (**Figure 3**). Their holdings however slipped from 48.1% from the same period a year earlier. In contrast, financial corporations' holdings of central bank bonds climbed to 28.2% at the end of March from 22.6% a year earlier. Foreign investor holdings of central bank bonds also rose to a share of 6.8% of the total from 2.3% in the same period.

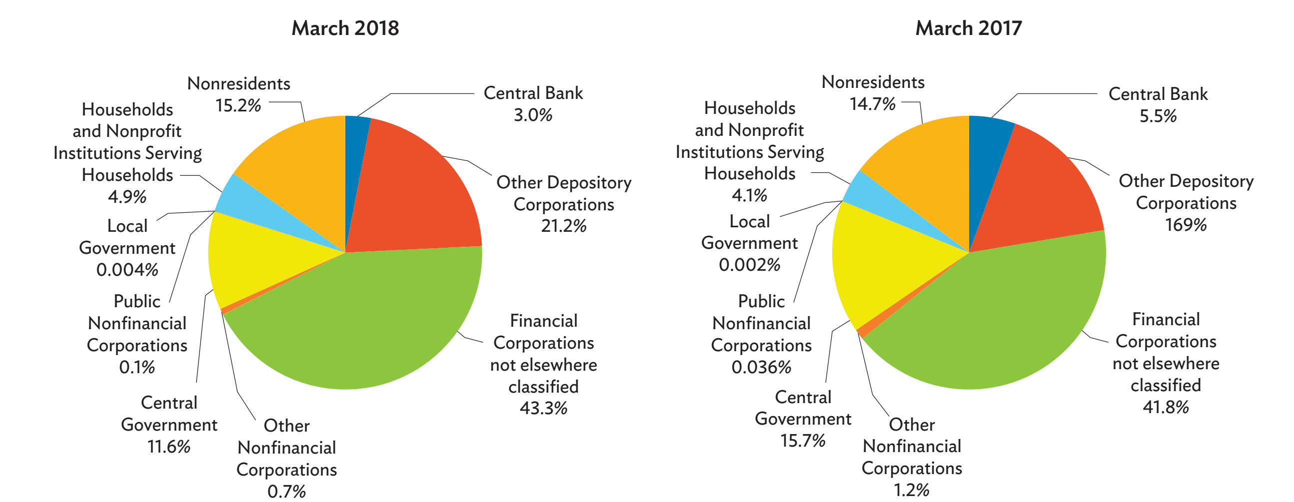
In the January–April period, Thailand recorded net foreign inflows in its LCY bond market of THB97.0 billion, which was lower than the THB101.9 billion recorded in the same period a year earlier (**Figure 4**). April saw net outflows valued at THB23.9 billion, pulling down earlier gains in the first 3 months of the year. Rising interest rates in US Treasuries resulted in foreign investors withdrawing from the Thai bond market as Thai bond yields have stayed below US Treasury rates in recent months.

## Policy, Institutional, and Regulatory Developments

### Bank of Thailand Increases Frequency of Issuance of 2-Year Bonds

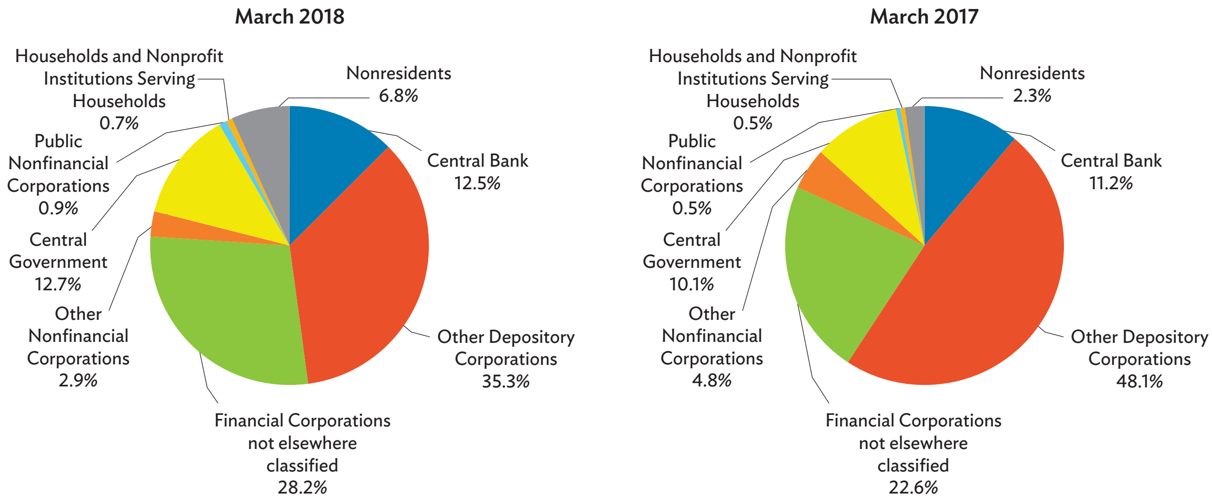
In January, the Bank of Thailand raised the frequency of issuance of its 2-year bonds to monthly from the previous schedule of every even month. New issuance of 2-year Bank of Thailand bonds are scheduled for February, May, August, November, while reopenings are scheduled in the months between each new issuance. The maximum

**Figure 2: Local Currency Government Bonds Investor Profile**



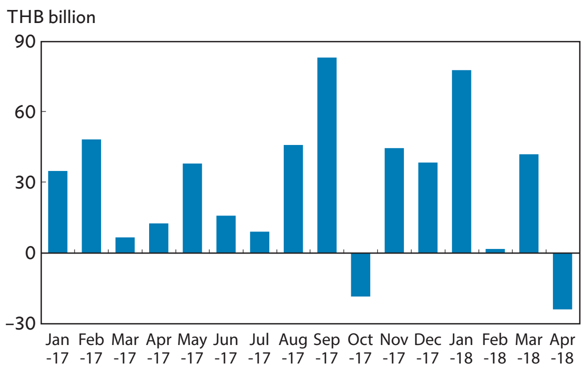

Note: Government bonds include Treasury bills and bonds.
Sources: *AsianBondsOnline* and Bank of Thailand.

**Figure 3: Local Currency Central Bank Securities Investor Profile**




Source: Bank of Thailand.

**Figure 4: Foreign Investor Net Trading of Local Currency Bonds in Thailand**




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

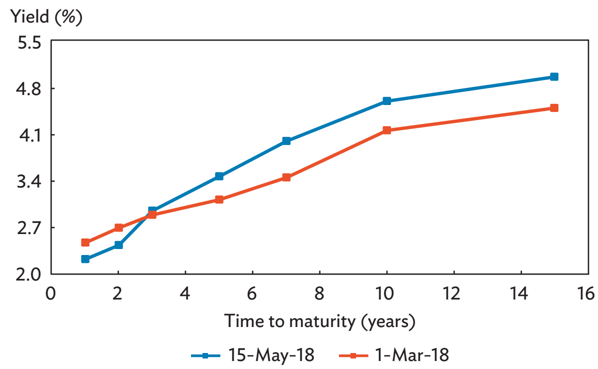
issue size for a 2-year bond was also reduced to a range of THB15 billion–THB40 billion due to the increased frequency of issuance. The revision to the issuance plan was made to help ease liquidity conditions. The Bank of Thailand issues bonds for the management of money market liquidity.

# Viet Nam

## Yield Movements

Between 1 March and 15 May, local currency (LCY) government bond yields in Viet Nam increased for all tenors except the 1-year and 2-year maturities, which fell 25 basis points (bps) and 26 bps, respectively (**Figure 1**). Yield increases for 3-year to 15-year tenors ranged from 6 bps to 55 bps, with 3-year maturities having the smallest gain and 7-year maturities the largest. The yield spread between 2-year and 10-year bonds widened to 215 bps from 146 bps during the review period.

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




Source: Based on data from Bloomberg LP.

The decline in yields at the short-end of the curve can be attributed to the State Bank of Vietnam's (SBV) reduction of its open market operation interest rate in January when the central bank cut the interest rate by 25 bps to 4.75%. The move was intended to support economic growth by bringing down bank lending rates. On the other hand, since domestic investors are the major players in Viet Nam's bond market, the upward movement in yields of long-term bonds reflects mounting pressure from rising global interest rates as the United States Federal Reserve and other major central banks prepare for accelerated monetary policy normalization.

Consumer price inflation in Viet Nam slightly climbed to 2.8% year-on-year (y-o-y) in April from 2.7% y-o-y in March, driven by higher prices for food, housing, transport, and education, with the fastest upward price adjustment seen in transport. February recorded the highest inflation rate of the year through April at 3.2% y-o-y and also highest since September 2017. Core inflation, barely changed in April at 1.3% y-o-y from 1.4% y-o-y in March, has been stable since the start of the year.

In January, the central bank set its key monetary management policies for 2018 with a focus on maintaining economic stability by pursuing a proactive and flexible monetary policy. The State Bank of Vietnam last cut its benchmark refinancing rate by 25 bps to 6.25% on 10 July 2017 to boost the economy's lagging growth. The Vietnamese dong has depreciated 0.3% against the United States dollar year-to-date through 15 May. The stability of the dong is being supported by a healthy balance of payments; high growth of investment inflows due to an improved investment climate; and the continuous buildup of foreign reserves by the SBV, which have recently hit record highs. These factors have also contributed to rising investor confidence in the Vietnamese market.

Viet Nam's economy expanded faster than expected at 7.4% y-o-y in the first quarter (Q1) of 2018, carrying on the growth momentum achieved in the last 3 quarters of 2017. The gross domestic product (GDP) expansion was propelled by the agriculture and industrial sectors, which contributed 0.5 percentage points and 3.4 percentage points, respectively. The services sector also expanded in Q1 2018, but at a slower pace compared with the preceding quarter, contributing 2.8 percentage points to GDP growth. On the expenditure side, exports drove the economic expansion, increasing 22.0% y-o-y. The Government of Viet Nam has targeted 6.7% GDP growth in 2018, but rising protectionism in large economies posts a challenge to the export-driven economy.

## Size and Composition

The size of Viet Nam's LCY bond market reached VND1,173 trillion at the end of March, registering growth of 8.6% quarter-on-quarter (q-o-q) and 17.2% y-o-y (**Table 1**). While the government and corporate bond segments both saw increases in Q1 2018, growth in the LCY bond market is largely driven by government

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

| | Outstanding Amount (billion) | | | | | | Growth Rate (%) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Q1 2017 | | Q4 2018 | | Q1 2018 | | Q1 2017 | | Q1 2018 | |
| | VND | USD | VND | USD | VND | USD | q-o-q | y-o-y | q-o-q | y-o-y |
| **Total** | 1,000,756 | 44 | 1,080,093 | 48 | 1,173,062 | 51 | 0.3 | 14.2 | 8.6 | 17.2 |
| Government | 952,610 | 42 | 1,017,691 | 45 | 1,108,110 | 49 | 0.3 | 13.4 | 8.9 | 16.3 |
| Treasury Bonds | 747,887 | 33 | 788,918 | 35 | 828,247 | 36 | 1.5 | 18.9 | 5.0 | 10.7 |
| Central Bank Bills | 0 | 0 | 16,400 | 1 | 91,270 | 4 | (100.0) | (100.0) | 456.5 | – |
| State-Owned Enterprise and Municipal Bonds | 204,722 | 9 | 212,373 | 9 | 188,593 | 8 | (0.03) | (0.5) | (11.2) | (7.9) |
| Corporate | 48,146 | 2 | 62,402 | 3 | 64,952 | 3 | 1.0 | 30.9 | 4.1 | 34.9 |

– = not applicable, ( ) = negative, LCY = local currency, q-o-q = quarter-on-quarter, Q1 = first quarter, Q4 = fourth quarter, USD = United States dollar, VND = Vietnamese dong, y-o-y = year-on-year.
Notes:
1. Bloomberg LP end-of-period LCY–USD rates are used.
2. Growth rates are calculated from an LCY base and do not include currency effects.
Sources: Bloomberg LP and Vietnam Bond Market Association.

bonds, which comprise about 94% of the total. Despite the strong growth, Viet Nam's bond market remains the smallest in emerging East Asia.

**Government bonds.** LCY government bonds outstanding grew 8.9% q-o-q and 16.3% y-o-y to reach VND1,108 trillion at the end of March. The growth recorded in the period was faster compared with the fourth quarter (Q4) of 2017. Treasury bonds remain the key driver of the increase in growth of 5.0% q-o-q and constitute the largest share of total government bonds at about 75%. A notable surge was seen in the stock of SBV bills, which rose more than fivefold on a quarterly basis to VND91.3 trillion, after dropping 21.9% q-o-q at the end of December 2017. The dramatic increase in debt was due to large issuance from the central bank during Q1 2018. On the other hand, state-owned enterprise bonds fell 11.2% q-o-q, following an increase of 9.9% q-o-q in Q4 2017, due to a large amount of maturities and no new issuance in Q1 2018.

LCY debt issuance from the government in Q1 2018 totaled VND484.5 trillion, representing a 45.4% q-o-q increase, largely driven by issuance of SBV bills, which summed to VND435.1 trillion. The SBV has increased its foreign reserves in recent months by purchasing foreign currencies, resulting in a large amount of Vietnamese dong circulating in the system. The issuance of short-term securities in Q1 2018 was intended to withdraw local money from the banking system in order to minimize inflation risks. Treasury bonds also saw a dramatic increase in issuance in Q1 2018. While the amount is far less than the issuance of SBV bills, debt sales surged nearly sixfold to reach VND49.4 trillion during the quarter. The government plans to mobilize VND200 trillion of government bonds in 2018 for its state budget, with an emphasis on long-term maturities and keeping the interest rate low. The government may, however, adjust the volume of bonds and their structure in line with market conditions.

**Corporate bonds.** The size of the corporate sector's bond market was valued at VND65 trillion at the end of March, growing 4.1% from the end of December and 34.9% from a year earlier. The slower growth in Q1 2018 compared with Q4 2017 was due to lower corporate debt issuance. The number of corporate bond issuers increased to 33 firms at the end of March from 27 firms a year earlier. The top 30 corporate bond issuers comprised nearly the entire corporate segment, with Masan Consumer Holdings again having the highest level of debt outstanding at VND11.1 trillion (**Table 2**).

Issuance activity in the corporate segment was subdued in Q1 2018 compared with Q4 2017. Total issuance during the quarter amounted to VND2,100 trillion from the debt sales of three firms, which was 83% lower than in Q4 2017. Saigon Securities was the largest corporate issuer among the three firms in Q1 2018 with a debt sale of VND1,150 trillion of 3-year maturities at a 4.0% coupon rate.

## Ratings Update

On 14 May, Fitch Ratings upgraded Viet Nam's sovereign credit rating to BB from BB– with a stable outlook.

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

| | Issuers | Outstanding Amount | | State-Owned | Listed Company | Type of Industry |
|---|---|---|---|---|---|---|
| | | LCY Bonds (VND billion) | LCY Bonds (USD billion) | | | |
| 1. | Masan Consumer Holdings | 11,100 | 0.49 | No | No | Diversified Operations |
| 2. | Vingroup JSC | 9,600 | 0.42 | No | Yes | Real Estate |
| 3. | Asia Commercial Joint Stock | 4,600 | 0.20 | No | No | Finance |
| 4. | Masan Group Corporation | 4,500 | 0.20 | No | Yes | Finance |
| 5. | No Va Land Investment Group | 4,250 | 0.19 | No | Yes | Real Estate |
| 6. | Vietinbank | 4,200 | 0.18 | No | Yes | Banking |
| 7. | Hoang Anh Gia Lai | 4,000 | 0.18 | No | Yes | Real Estate |
| 8. | Techcom Bank | 3,000 | 0.13 | No | No | Banking |
| 9. | Vietnam Prosperity Bank | 3,000 | 0.13 | No | Yes | Banking |
| 10. | Vietcombank | 2,000 | 0.09 | Yes | Yes | Banking |
| 11. | Ho Chi Minh City Infrastructure | 1,833 | 0.08 | No | Yes | Infrastructure |
| 12. | Vietnam Electrical Equipment | 1,800 | 0.08 | No | Yes | Manufacturing |
| 13. | Saigon Securities | 1,650 | 0.07 | No | Yes | Finance |
| 14. | Agro Nutrition International | 1,300 | 0.06 | No | No | Agriculture |
| 15. | Mobile World Investment Corporation | 1,135 | 0.05 | No | Yes | Manufacturing |
| 16. | DIC Corporation | 1,000 | 0.04 | Yes | No | Chemicals |
| 17. | KinhBac City Development Holding | 700 | 0.03 | No | Yes | Real Estate |
| 18. | Sai Gon Thuong Tin Real Estate Joint Stock | 600 | 0.03 | No | Yes | Real Estate |
| 19. | Khang Dien House Trading and Investment | 534 | 0.02 | No | Yes | Building and Construction |
| 20. | Saigon-Hanoi Securities Corporation | 800 | 0.04 | No | Yes | Finance |
| 21. | Tasco Corporation | 500 | 0.02 | No | Yes | Engineering and Construction |
| 22 | An Phat Plastic & Green Environment | 450 | 0.02 | No | Yes | Industrial |
| 23. | Cuu Long Pharmaceutical Company | 450 | 0.02 | No | Yes | Manufacturing |
| 24. | Sotrans Corporation | 400 | 0.02 | No | No | Logistics |
| 25. | Vietnam Investment Construction and Trading | 350 | 0.02 | No | Yes | Building and Construction |
| 26. | Hung Vuong Corporation | 300 | 0.01 | No | Yes | Food |
| 27. | Loc Troi Group | 220 | 0.01 | No | Yes | Manufacturing |
| 28. | Ha Do Corporation | 200 | 0.01 | No | Yes | Construction |
| 29 | Thanh Thanh Cong Education Corporation | 150 | 0.01 | No | No | Education |
| 30. | Son Ha International Corporation | 110 | 0.01 | No | Yes | Building and Construction |
| **Total Top 30 LCY Corporate Issuers** | | **64,732** | **2.8** | | | |
| **Total LCY Corporate Bonds** | | **64,952** | **2.8** | | | |
| **Top 30 as % of Total LCY Corporate Bonds** | | **99.7%** | **99.7%** | | | |

LCY = local currency, USD = United States dollar, VND = Vietnamese dong.
Notes:
1. Data as of 31 March 2018.
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.

The upgrade reflects Viet Nam's strong economic growth performance, rising foreign reserves, and the government's commitment to reducing the deficit and debt levels. Viet Nam's economy expanded 6.8% in 2017 and is forecast to grow 6.7% in 2018, backed by strong foreign direct investment inflows, an expanded manufacturing sector, and increased private consumption. The SBV has been building up its foreign reserves, which reached a record high in early 2018, to provide a cushion against external shocks and to improve investor confidence.

## Policy, Institutional, and Institutional Developments

### Government Approves State Budget and Sets Limit on Government-Guaranteed Loans

In April, Viet Nam's Prime Minister Nguyen Xuan Phuc approved the government's borrowing plan for 2018. The government will borrow a total of VND384 trillion, with VND276 trillion to be sourced from domestic loans and VND108 trillion from foreign loans. A large portion of the total borrowing, equivalent to VND341.8 trillion, will be used to balance the state budget. The Prime Minister also approved limits on government-guaranteed loans in 2018. For example, domestic bonds issued by the Vietnam Development Bank will not exceed VND24.4 trillion and those issued by the Vietnam Bank for Social Policies will not exceed VND9.67 trillion. In addition, limits were set on loans guaranteed by the government for projects, foreign commercial loans of enterprises, commercial loans of enterprises and credit organizations, and loans of local governments.

### State Securities Commission Issues New Margin Lending Policy

Viet Nam's State Securities Commission issued a draft regulation requiring the initial margin ratio to be at least 60%, effective 1 February. The margin ratio of 60:40 means that investors have to deposit 60% of the purchase price and are allowed to borrow the remaining 40% from the broker. The regulation aims to reduce potential risks in the stock market and restrain credit growth in the banking and financial sector. At the same time, a credit slowdown could affect the growth momentum of the stock market.

## Asia Bond Monitor
*June 2018*

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

### About the Asian Development Bank

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

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

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