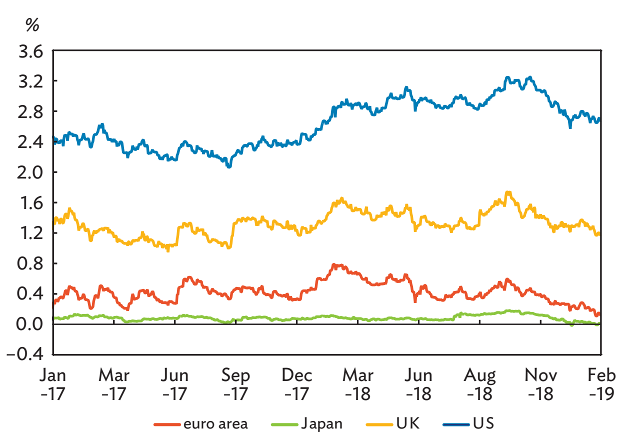
Introduction: Bond Yields Fall in Emerging East Asia

Bond yields fall in emerging East Asia as the Federal Reserve moderates pace of interest rate hikes.

Between 28 December and 15 February, the 10-year government bond yield in most advanced economies and emerging East Asian economies fell despite continued monetary tightening in advanced economies (**Figure A**).[1] The United States (US) Federal Reserve hiked interest rates for the fourth time in 2018 on 19 December and the European Central Bank (ECB) confirmed on 13 December that it would discontinue its asset purchase program at the end of the year. The decline in yields was partly driven by the softening growth outlook for advanced economies as well as changing expectations regarding Federal Reserve monetary policy.

While the Federal Reserve raised its target policy rate by 25 basis points (bps) to 2.25%–2.50% at its December meeting, in line with market expectations, it slightly downgraded its 2019 gross domestic product (GDP) growth forecast, relative to its previous forecast in September, from 2.5% to 2.3%. The Federal Reserve also indicated that it was forecasting two rate hikes in 2019 rather than three as indicated in its earlier assessment. Furthermore, at its January meeting, the Federal Reserve turned more dovish and left its policy rate target unchanged, stating that it would be patient in determining future adjustments of its policy rate given uncertain global economic and financial conditions.

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



UK = United Kingdom, US = United States.
Note: Data as of 15 February 2019.
Source: Bloomberg LP.

The elevated uncertainty is related to slowing global growth momentum. According to the International Monetary Fund's *World Economic Outlook Update January 2019*, the world economy is projected to expand 3.5% in 2019 and 3.6% in 2020, marginally down from estimated growth of 3.7% in 2018. In view of heightened uncertainty in the global economic environment and the persistence of sizable downside risks, the International Monetary Fund cut its global growth forecast by 0.2 percentage points for 2019 and 0.1 percentage point for 2020 compared with its October 2018 forecasts, which had already been downgraded relative to its April 2018 forecasts. The growth of global trade volume is expected to remain steady at 4.0% in 2019 and 2020, the same as the estimated growth in 2018. Persistent trade tensions remain the biggest source of uncertainty and pose a major downside risk to global growth prospects. Although the temporary ceasefire agreed upon by the People's Republic of China (PRC) and the US on 2 December was a welcome development, the conflict still awaits a permanent resolution. On a positive note, global investors' risk aversion toward emerging markets seems to be on the decline. Furthermore, the severe financial stress suffered by vulnerable emerging markets such as Argentina and Turkey in the middle of 2018 has abated in recent months (**Box 1**).

Notwithstanding heightened uncertainty, economic growth in the US remains relatively strong, despite some signs of moderation. The initial estimate for the

[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.

Box 1: Are Emerging Market Currencies Out of the Woods?

The United States (US) Federal Reserve's ongoing monetary policy normalization is tightening global liquidity conditions and poses a risk to emerging markets' financial stability. Higher US interest rates narrow the interest rate gap between advanced economies and emerging markets, render emerging market assets less attractive, and can trigger capital outflows. Tightening global liquidity conditions interact with and amplify other risks. For example, they exacerbate the risk posed by the rapid buildup of private debt in some developing Asian economies. In addition, US monetary tightening increases the pressure on Asian central banks to raise their own interest rates, which can harm short-term growth.

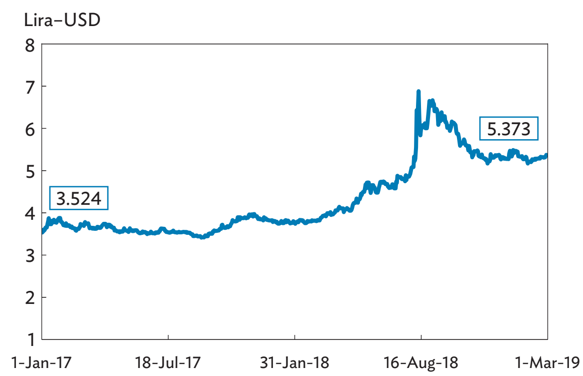
Another downside from tighter global liquidity is broader risk aversion among global investors toward emerging markets. While Asian economies enjoy relatively strong fundamentals that reduce their vulnerability to this risk, they are not immune altogether. Some Asian economies may be susceptible to negative spillovers emanating from vulnerable major economies outside the region. The foreign exchange turmoil that roiled Argentina and Turkey in the second (Q2) and third (Q3) quarters of 2018 underline this risk. The sharp depreciations of the peso and lira were precipitated by economy-specific weaknesses as well as external factors, especially rising US interest rates. Their depreciation both reflected and contributed to a broader deterioration of investor sentiment toward emerging markets. Some currencies in developing Asia, most notably the Indian rupee and Indonesian rupiah, also weakened noticeably, sparking concerns about their overall financial stability.

However, concerns about emerging market financial stability seem to have receded somewhat since the fourth quarter (Q4) of 2018. Above all, a measure of calm appears to have returned to Argentina and Turkey, which were subject to severe stress earlier in 2018. Here we examine and discuss recent developments germane to the financial stability of these two economies, emerging markets as a whole, and developing Asia in particular.

Interest Rate Hikes Calm Investor Nerves in Turkey

The sharp depreciation of the Turkish lira combined with higher energy prices to push inflation in Turkey to double-digit levels in Q2 2018. This prompted the central bank to hike its 1-week repo rate, widely considered to be the key policy rate, three times between May and September. As a result, the 1-week repo rate rose from 16.5% to 24.0%, where it stands now. Although some questioned whether the hikes were bold enough, they have been effective in stabilizing the lira. The combined effects of currency instability, financial market stress, inflationary pressures, and high interest rates slowed Turkey's Q3 2018 gross domestic product (GDP) growth to 1.6% year-on-year (y-o-y), down sharply from 7.4% for full-year 2017, 7.2% y-o-y in Q1 2018, and 5.3% y-o-y in Q2 2018. Q3 2018 marked the worst of the currency crisis, with the lira falling as much as 47% year-to-date during the quarter. Since then, the lira recovered strongly and remained relatively stable throughout December to end around 30% down on the year (**Figure B1.1**).

Figure B1.1: Turkish Lira Trends



USD = United States dollar.
Notes: Local currency unit relative to the US dollar. Data are from 1 January 2017 to 1 March 2019.
Source: Bloomberg LP.

Capital flows provide additional evidence of Turkey's improving financial health. In October, Turkey attracted net inflows of portfolio capital for the first time since January. Although the magnitude of the net inflows was modest at USD491 million, the switch from net outflows to net inflows was a potential inflection point for an economy that experienced USD8.7 billion of net outflows between February and September. Macroeconomic policies implemented since August, in particular concerted monetary tightening and the scaling back of fiscal stimulus, helped to reverse the net portfolio outflows. In fact, the Turkish Treasury's USD2 billion bond issue in October was three times oversubscribed.[a]

[a] The bond matures in December 2023 and has a coupon rate of 7.25% and a yield rate of 7.50% for investors.

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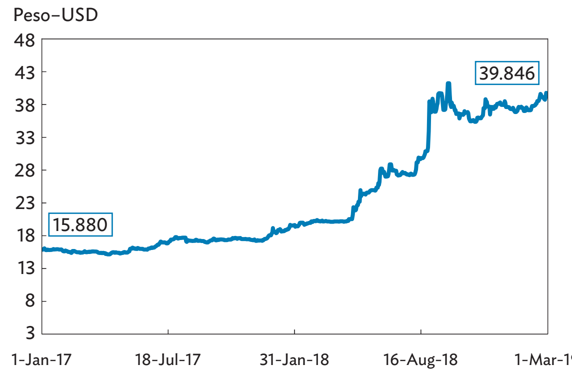
Box 1: Are Emerging Market Currencies Out of the Woods? *continued*

Revamped International Monetary Fund Package Brings Some Stability to Argentina

The Argentine peso lost more than half its value last year and was the worst-performing emerging market currency in 2018. However, like the Turkish lira, it showed signs of stabilization in Q4 2018 after coming under intense pressure in the preceding quarters. As a result of foreign exchange and inflationary pressures, the central bank raised the benchmark interest rate repeatedly beginning in April until it reached 60% on 30 August, the highest in the world. In addition, the government secured a USD50 billion loan package from the International Monetary Fund (IMF) in June. However, the mix of concerted monetary tightening and IMF financing failed to stabilize financial markets. The crux of the problem was the large external and internal imbalances inherited from the previous government, and the current government's gradualist approach to tackling those imbalances, especially the fiscal deficit.

In response to the free fall of the peso despite extraordinary monetary tightening, in September the government requested from the IMF a revision of its loan package. After negotiations, the IMF approved expanding the loan to USD57 billion, the biggest in its history, and accelerating disbursement. The expanded package comes with stringent conditions. In particular, the government has committed to eliminating the primary fiscal deficit by 2019, with the aim of restoring macroeconomic stability and returning to international debt markets by 2020. Furthermore, the central bank has committed to intervene in foreign exchange markets only in cases of severe stress. Specifically, the central bank will intervene to stabilize the peso only if it depreciates below 44 per US dollar. The revised IMF loan package helped to stabilize the peso beginning in Q4 2018 (**Figure B1.2**).

Figure B1.2: Argentine Peso Trends



USD = United States dollar.
Notes: Local currency unit relative to the US dollar. Data are from 1 January 2017 to 1 March 2019.
Source: Bloomberg LP.

Emerging Market Currencies on the Rebound

The Turkish lira and Argentine peso have both stabilized since Q4 2018. Forceful interest rate hikes by the central bank seem to have restored investor confidence in Turkey just as the central bank's earlier failure to raise rates was a major factor in the lira's decline. Other factors, most notably the improvement in relations with the US, also contributed. In the case of Argentina, the expansion and acceleration of the IMF loan package and the government's commitment to fiscal consolidation have arrested the peso's fall. In addition, political uncertainty is likely to recede after the upcoming general elections, which will be held in October 2019. Despite the clear improvements in investor sentiment toward both economies, it is premature to conclude they are completely safe. While the two economies are making tangible progress on macroeconomic stability, they still suffer from substantial imbalances. Argentina's current account deficit was 6.1% of GDP in the first 9 months of 2018 and inflation averaged 32.4% in January–November. The corresponding figures for Turkey were 5.1% of GDP and 16.2% for full-year inflation. Furthermore, inflation has been trending up in recent months in Argentina. In sum, despite recent improvements, the two economies remain vulnerable to shocks.

In line with the stabilization of the lira and peso, the currencies of emerging markets as a whole have performed noticeably better since Q4 2018 (**Figure B1.3**). While the Turkish and Argentine currencies suffered the sharpest declines, the currencies of other emerging markets also weakened to varying degrees. Broadly speaking, emerging market currencies fell sharply during Q2 2018, bottomed out in Q3 2018, and rebounded in Q4 2018. To a large extent, according to the International Institute of Finance, their decline reflected a correction of exchange rate misalignment that prevailed at the beginning of the year. The correction boosted emerging market exports, especially in economies that experienced large corrections. For example, Turkey's exports rose sharply after the lira's depreciation and the country posted a current account surplus in Q3 2018. Since the misalignment has been largely corrected, emerging market currencies are now showing greater stability.

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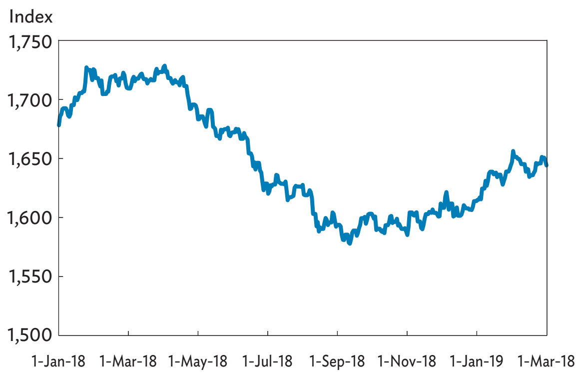
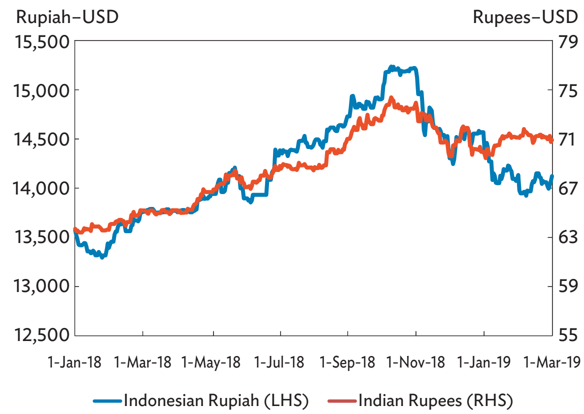
Box 1: Are Emerging Market Currencies Out of the Woods?

Figure B1.3: MSCI Emerging Markets Currency Index



MSCI = Morgan Stanley Capital International.
Notes: MSCI Emerging Market Currency Index measures the total return of 25 emerging market currencies relative to the US dollar where the weight of each currency is equal to its country weight in the MSCI Emerging Markets Index. Data are from 1 January 2018 to 1 March 2019.
Source: Bloomberg LP.

Figure B1.4: Indonesian Rupiah and Indian Rupee



LHS = left-hand side, RHS = right-hand side, USD = United States dollar.
Notes: Local currency unit relative to the US dollar. Data are from 1 January 2018 to 1 March 2019.
Source: Bloomberg LP.

Emerging Asian Currencies Recover As Well

Relatively strong fundamentals are also giving a fillip to emerging market currencies. Inflation is mostly subdued across emerging markets, and exports and growth have held up well despite rising global trade tensions. Indeed, emerging markets as a group actually grew faster in 2017–2018 than in 2015–2016. Emerging Asian economies in particular enjoy relatively healthy fundamentals and are thus well positioned to withstand shocks. For example, inflation is below 4% in the two major Asian markets that came under the most pressure during the emerging market currency turmoil of 2018: India and Indonesia. The same two economies also suffered the most volatility during the "Taper Tantrum" in 2013. In line with the broader recovery of emerging market currencies, both the Indian rupee and Indonesian rupiah rebounded in Q4 2018 (**Figure B1.4**). However, India and Indonesia are each still burdened with twin deficits—fiscal and current account—although the magnitudes of their respective deficits are manageable.

In addition to relatively strong fundamentals, the two economies have benefited from decisive policy actions to stabilize financial markets. The Reserve Bank of India and Bank Indonesia each aggressively hiked their benchmark interest rate during Q2 2018 and Q3 2018 to defend their currencies and stave off inflationary pressures. Between May and November, Bank Indonesia raised its benchmark interest rate six times, from 4.25% to 5.75%. The Indonesian central bank has been one of the most aggressive in tightening monetary policy in response to emerging-market foreign exchange turmoil. The Reserve Bank of India raised its benchmark interest rate twice in 2018, from 6.0% to 6.5%. The currency of another developing Asian economy viewed as potentially vulnerable, the Philippines, also recovered in Q4 2018. Like its Indonesian counterpart, the Bangko Sentral ng Pilipinas aggressively hiked interest rates to contain inflation and shore up the exchange rate. In 2018, it raised the benchmark rate five times, from 3.00% to 4.75%. Given stabilizing exchange rates and receding inflationary pressures, the central banks of all three economies have held their interest rates steady since December.

Fragile but Improving Outlook for Developing Asia's Financial Stability

Notwithstanding the noticeable trend toward stabilization of emerging market exchange rates since Q4 2018, global financial markets remain febrile and vulnerable to shocks. Global trade tensions, especially tensions between the People's Republic of China and the US, the world's two biggest economies, have not yet been resolved, casting a big shadow over the global economic outlook and financial stability. Although the effects of trade tensions seem to be limited so far, their persistence creates uncertainty and thus may yet harm economic growth. Uncertainty over trade and more generally global growth prospects contributed to severe volatility in the US stock market in December. Therefore, risk

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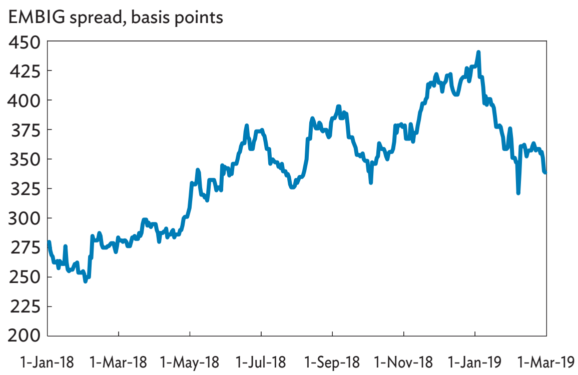
Box 1: Are Emerging Market Currencies Out of the Woods? *continued*

aversion toward emerging markets is likely to remain elevated. As noted above, the most vulnerable emerging markets still suffer from imbalances. Lingering vulnerability helps explain why emerging market credit spreads remain elevated even as emerging market currencies have appreciated (**Figure B1.5**).

Figure B1.5: Emerging Markets Sovereign Bond Spreads



EMBIG = Emerging Markets Bond Index Global.
Notes: EMBIG is JP Morgan's index of USD-denominated sovereign bonds which tracks total returns for traded external debt instruments issued by sovereign and quasi-sovereign entities in emerging markets. A widening of spreads mean investors are shying away from riskier investments in emerging markets and vice versa. Data are from 1 January 2018 to 13 January 2019.
Source: Bloomberg LP.

Therefore, in light of the heightened uncertainty surrounding global growth prospects, partly due to the unsettled status of the People's Republic of China–US trade conflict, as well as the unsettling effect this is having on global financial markets, it is premature to say that emerging markets are completely out of the woods. Nevertheless, on balance, the stability that foreign exchange markets in emerging economies, including those in Asia, gained in Q4 2018 is likely to persist in 2019. For one, the most vulnerable economies have implemented various measures to promote financial stability, including fiscal consolidation and monetary tightening. The stabilizing effects of such confidence-building measures will persist into the near future. The authorities' willingness to prioritize medium-term stability over short-term growth is most evident in Asia but also in other emerging markets.

Perhaps more importantly, there are growing signs that the US Federal Reserve will slow the pace of its monetary policy normalization. Although the US monetary tightening cycle is probably incomplete, the frequency and total magnitude of interest rate hikes are likely to be less in 2019 than in 2018. After raising interest rates four times by a total of 100 basis points in 2018, at its latest meeting on 19 December, the Federal Open Market Committee forecasts two hikes for 2019, down from three hikes projected earlier. A slowing US economy, falling US inflation, and tightening global liquidity conditions are all contributing to the prospects of a more gradual and cautious approach to monetary tightening. Since the Federal Reserve's concerted interest rate hikes were a major destabilizing factor for emerging markets in 2018, especially vulnerable emerging markets with internal and external imbalances, a deceleration of interest rate hikes in 2019 should act as a stabilizing force. The destabilizing effect of rising US interest rates on emerging markets was especially acute in foreign exchange markets due to the strengthening of the US dollar resulting from higher US rates. To conclude, compared with the nerve-wracking foreign exchange market turbulence of 2018, 2019 is likely to be more stable, although potential sources of volatility remain.

The growth trajectory of advanced economies is clearly trending down as the cyclical expansion in the US appears to be nearing its end. The US economy grew at a robust (estimated) pace of 2.9% in 2018, but growth is expected to slow to 2.3% in 2019 and 2.0% in 2020. Advanced economies as a whole expanded by an estimated 2.3% in 2018, but their growth is projected to fall to 2.0% in 2019 and 1.7% in 2020. The corresponding figures for emerging markets and developing economies are 4.6%, 4.5%, and 4.9%, respectively.

The *World Economic Outlook Update January 2019* forecasts consumer price inflation in advanced economies to decline from 2.3% in 2018 to 2.0% in 2019, and 1.7% in 2020. Falling oil prices are containing inflationary pressures in emerging markets. In emerging markets and developing economies, consumer price inflation is projected to fall from 4.6% in 2018 to 4.5% in 2019, before rebounding to 4.9% in 2020.

fourth quarter (Q4) of 2018 showed GDP growing at an annual rate of 2.6% versus 3.4% in the previous quarter. Consumer price inflation has trended downward, with the inflation rate falling from 1.9% year-on-year (y-o-y) in December to 1.6% y-o-y in January. At its 29–30 January meeting, the Federal Reserve noted that although inflation had slowed in recent months, longer-term inflation expectations remain unchanged. The US labor market also remains strong, with nonfarm payrolls adding 304,000 jobs in January, up from a gain of 222,000 in December. The unemployment rate rose slightly from 3.9% to 4.0% between December and January.

In the euro area, the ECB ended its asset purchase program in December. Also, the ECB reduced its 2019 GDP forecast from 1.8% to 1.7%. At its 24 January meeting, the ECB left monetary policy largely unchanged but indicated that incoming economic data had been weaker than expected. The euro area's GDP growth slowed to 1.1% y-o-y in Q4 2018 from 1.6% y-o-y in the previous quarter. Inflation still remains below target, with flash estimates for inflation in February at 1.5% y-o-y.

Unlike the US and the euro area, Japan has yet to normalize its monetary policy. At its monetary meeting on 23 January, the Bank of Japan (BOJ) largely left monetary policy unchanged. GDP for Q4 2018 showed Japan's economy recovering, with GDP growing at 1.9% y-o-y, reversing a contraction of 2.4% y-o-y in the previous quarter. In its January economic outlook, the BOJ slightly raised its 2019 GDP growth forecast to 0.9% from 0.8% in October. However, it lowered its annual inflation forecast to 1.1% from 1.6%.

On 12 February, the BOJ reduced its monthly purchases of bonds with maturities of 10–25 years from JPY200 billion to JPY180 billion. However, the move is unlikely to be a signal of monetary policy tightening since it is consistent with past BOJ statements that it would allow greater volatility in its 10-year yield target. In addition, the BOJ stated that a shift in the target rate rather than changes in the amount of bond purchases would be a more accurate signal of changes to its monetary policy stance.

Despite the elevated global uncertainty due to persistent trade tensions, particularly between the PRC and the US, developing Asia is projected to grow at a healthy pace.[2] According to the Asian Development Bank's *Asian Development Outlook Supplement* released in December 2018, the region's economy is projected to expand 6.0% in 2018 and 5.8% in 2019. Notwithstanding the elevated uncertainty, the Asian Development Bank's December forecasts were unchanged from its September forecasts. Strong domestic demand is helping the economies of emerging East Asia weather strong external headwinds. The PRC, which is bearing the brunt of the trade dispute with the US, is forecast to expand 6.3% in 2019, down from 6.9% in 2017 and an estimated 6.6% in 2018. The aggregate growth figures for the 10 members of the Association of Southeast Asian Nations are 5.2% in 2017 and 5.1% in both 2018 and 2019. The Republic of Korea's economy is projected to grow 2.6% in 2019, after expanding 3.1% in 2017 and an estimated 2.7% in 2018. The growth figures for Hong Kong, China, which is another high-income economy, are 3.8% in 2017, an estimated 3.4% in 2018, and a projected 2.8% in 2019. The region's growth is driven by domestic demand, which remains strong despite the negative impact of global trade tensions. According to the *Asian Development Outlook Supplement*, the region's consumer price inflation rose from 2.2% in 2017 to an estimated 2.6% in 2018. It is projected to rise further to 2.7% in 2019.

In tandem with the decline in yields in advanced economies, 10-year bond yields fell in emerging East Asia during the review period largely due to expectations that the Federal Reserve would reduce the pace of its monetary tightening (**Table A**). This has reduced pressure on emerging East Asia's financial markets and improved investor sentiment in the region. In addition, the prospect of more gradual interest rate hikes by the Federal Reserve has allowed central banks in the region to keep monetary policy rates largely unchanged, with the exception of Thailand.

The exceptions to falling yields in the region were Indonesia, the Republic of Korea, and Singapore, which all saw marginal increases in their 10-year yields. The yield increase for Indonesia's 10-year bond was only 3 bps, while its 2-year bond yield fell 21 bps. The Republic of Korea had a similar trend; its 10-year

[2] Developing Asia comprises the 45 regional developing member economies of the Asian Development Bank. https://www.adb.org/sites/default/files/publication/216421/ado-supplement-dec-2016.pdf.

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	(0.2)	(6)	–	11.7	–
United Kingdom	(0.8)	(11)	(4)	7.5	1.5
Japan	(3)	(2)	(5)	5.5	(0.2)
Germany	5	(14)	(1)	7.0	(1.3)
Emerging East Asia					
China, People's Rep. of	(26)	(13)	(15)	7.6	1.6
Hong Kong, China	(31)	(26)	–	9.4	(0.2)
Indonesia	(21)	3	(28)	3.1	2.9
Korea, Rep. of	(4)	0.9	(8)	7.6	(1.1)
Malaysia	(3)	(21)	(36)	(0.2)	1.7
Philippines	(87)	(75)	(21)	5.9	0.5
Singapore	0	3	–	6.1	0.7
Thailand	7	(5)	2	4.7	4.1
Viet Nam	(114)	(43)	(16)	6.5	(0.1)
Select European Markets					
Greece	(32)	(65)	(76)	8.5	(1.3)
Ireland	4	(17)	(4)	9.3	(1.3)
Italy	2	7	18	10.3	(1.3)
Portugal	1	(28)	(0.9)	10.6	(1.3)
Spain	4	(15)	(4)	7.4	(1.3)

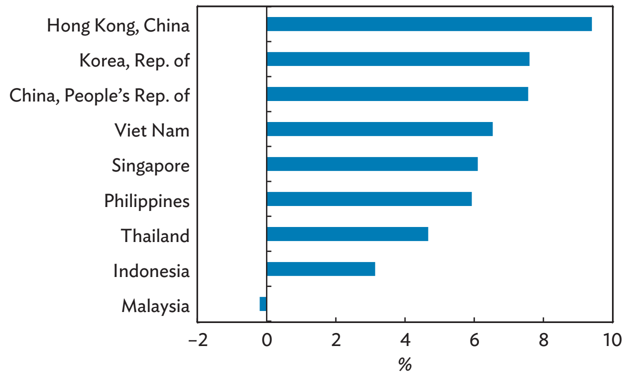
( ) = negative, – = not available, bps = basis points, FX = foreign exchange.
Notes:
1. Data reflect changes between 28 December 2018 and 15 February 2019.
2. A positive (negative) value for the FX rate indicates the appreciation (depreciation) of the local currency against the United States dollar.
Sources: Bloomberg LP and Institute of International Finance.

yield rose 0.9 bp, while its 2-year yield fell 4 bps. In Singapore, the 10-year yield rose 3 bps and the 2-year yield was unchanged.

The largest 10-year bond yield decline occurred in the Philippines, where yields fell 75 bps. The dip reflected a decline in the inflation rate, which allowed the Bangko Sentral ng Pilipinas to leave policy rates unchanged at its last two monetary policy meetings on 13 December and 7 February. The next largest decline occurred in Viet Nam, where 10-year yields fell 43 bps and 2-year yields declined 114 bps. The decline in yields was driven by low inflation and government directives to lower lending rates to priority sectors— agriculture, goods exports, small- and medium-sized enterprises, enterprises operating in auxiliary industries, and high-tech enterprises including start-ups—to support economic growth. In Thailand, while the 10-year yield fell 5 bps, the 2-year yield rose 7 bps. The rise in the 2-year yield was largely due to the 25-bps interest rate hike on 19 December. Although the Bank of Thailand left policy rates unchanged on 6 February, two members voted to raise policy rates. In the People's Republic of China (PRC), yields fell for both the 2-year and 10-year bonds, fueled by expectations of easing monetary policy.

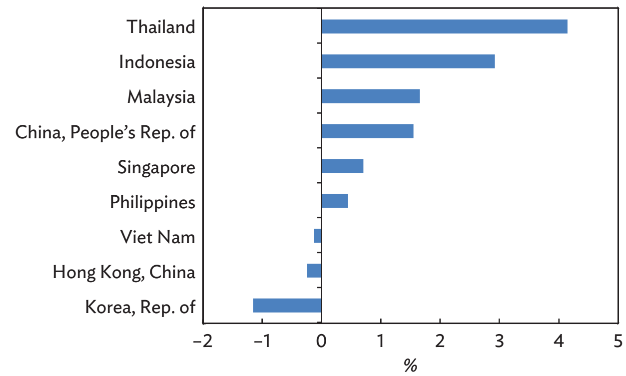
Improved investor sentiment pushed equity markets higher in emerging East Asia between 28 December and 15 February on the back of stronger demand for the region's financial assets (**Figure B**). Hong Kong, China (9.4%) and the PRC (7.6%) saw the largest gains, following progress made in the PRC–US trade talks, and amid expectations that the Government of the PRC would ease monetary policy and take measures to boost financial markets. The Republic of Korea was another

Figure B: Changes in Equity Indexes in Emerging East Asia



Note: Changes between 28 December 2018 and 15 February 2019.
Source: Bloomberg LP.

Figure C: Changes in Month-End Spot Exchange Rates vs. the United States Dollar



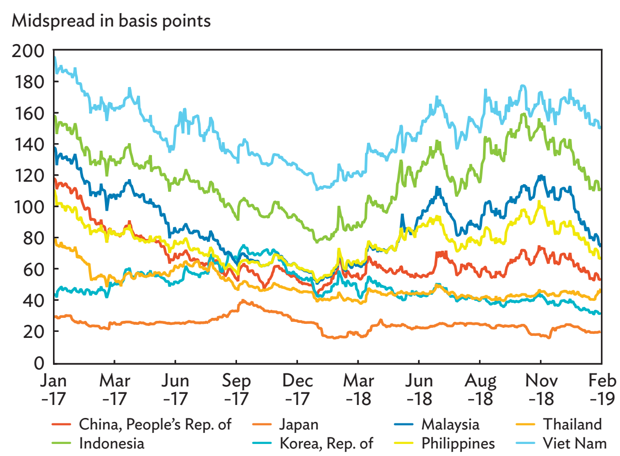
Notes:
1. Changes between 28 December 2018 and 15 February 2019.
2. A positive (negative) value for the foreign exchange rate indicates the appreciation (depreciation) of the local currency against the United States dollar.

Source: Bloomberg LP.

big gainer, rising 7.6% during the review period. The exception was Malaysia, where the stock market index slightly declined by 0.2%.

Most emerging East Asian currencies strengthened between 28 December and 15 February, but performances were mixed compared to bond yield and equity price movements (**Figure C**). The improved currency performances reflected expectations that the Federal Reserve would likely slow the pace of its interest rate hikes, weakening the US dollar relative to emerging East Asian currencies. The best-performing currency during the review period was the Thai baht, which gained 4.1%, largely due to strong economic fundamentals and because Thailand was the only economy in the region where the central bank raised its policy rate in December. Indonesia was the second-best gainer, with the rupiah appreciating 2.9% due to strong bond inflows. On the other hand, the Korean won depreciated 1.1% due to outflows from its bond and equity markets. The Hong Kong dollar depreciated marginally by 0.2% due to its link to the US dollar, and the Vietnamese dong declined 0.1%.

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



USD = United States dollar.
Notes:
1. Based on USD-denominated sovereign bonds.
2. Data as of 15 February 2019.

Source: Bloomberg LP.

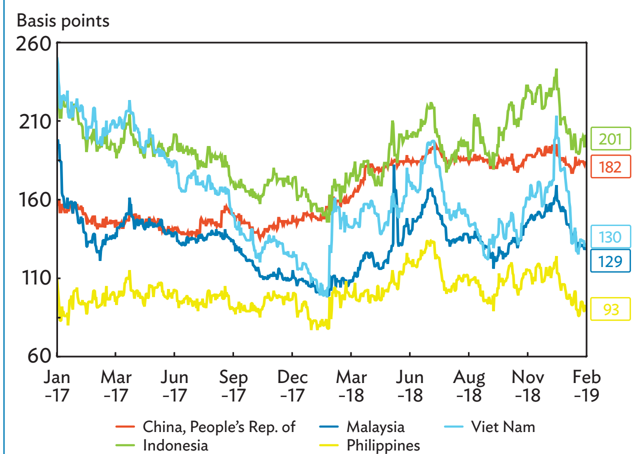
Credit default swap spreads in the region narrowed between 28 December and 15 February due to improved investor sentiment toward emerging markets (**Figure D**). Broader risk aversion toward emerging markets, epitomized by the sharp depreciation of the Argentine peso and Turkish lira in 2018, waned at the prospect of the Federal Reserve raising interest rates more gradually. Malaysia saw the largest decline in emerging East Asia, with spreads narrowing 36 bps. Indonesia experienced the second-largest decline at 28 bps.

The CBOE Volatility Index (VIX) also fell sharply during the review period after rising toward the end of December (**Figure E**). Prior to the VIX's decline, risk aversion had remained elevated amid declines in the US stock market over concerns that continuously rising US interest rates would dampen US economic growth, which was also weighed down by trade tensions and a partial shutdown of the government. Sentiment improved after the Federal Reserve indicated that it would be more patient in assessing the direction of its policy rate. The temporary truce in the PRC–US trade tensions and the end of the US government shutdown also boosted sentiment. The EMBIG spread fell during the review period in line with the improvement of the VIX (**Figure F**).

Foreign holdings of local currency government bonds in emerging East Asia were up in most markets at the end of December, with the exception of the PRC and Malaysia (**Figure G**). In the PRC, the share of foreign holdings fell slightly from 5.1% at the end of September to 5.0% at the end of December, largely due to the depreciation of the renminbi, which rendered CNY-denominated bonds less attractive. In Malaysia, the share fell from 24.6% to 24.0% during the same period. The Philippines saw the largest increase in the share of foreign holdings, which rose sharply from 4.4% to 7.5%, mainly on improved investor sentiment in response to declining inflation, which allowed the Bangko Sentral ng Pilipinas to pause its monetary policy tightening. In Indonesia, the share rose from 36.9% to 37.7% during the review period. Investor sentiment turned positive following indications the Federal Reserve would slow the pace of its rate hikes.

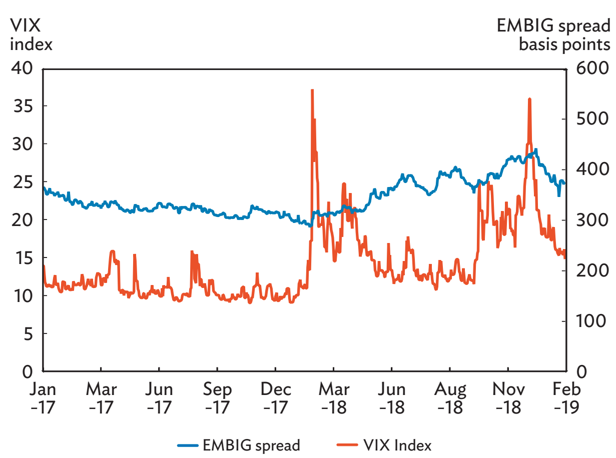
Downside risks to emerging East Asia's financial stability have receded somewhat since Q4 2018. Most significantly, there has been a tangible abatement of the

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



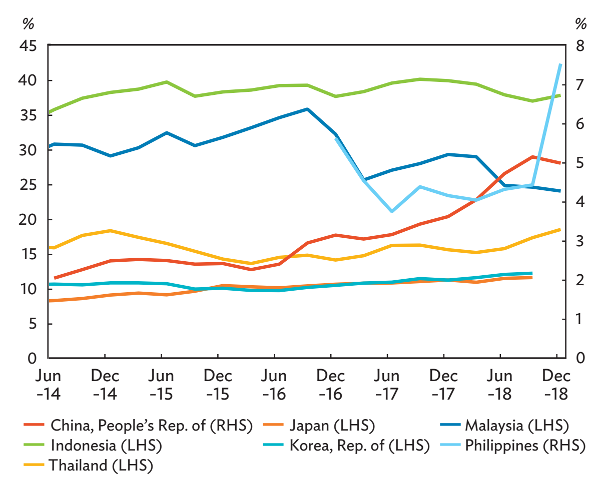
USD = United States dollar.
Notes:
1. Based on USD-denominated sovereign bonds.
2. Data as of 15 February 2019.
Source: Bloomberg LP.

Figure E: 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 15 February 2019.
Source: Bloomberg LP.

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



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

threat of generalized risk aversion among global investors toward emerging markets triggered by financial instability in vulnerable economies. Furthermore, emerging East Asia continues to enjoy strong economic growth and relatively calm financial conditions. Nevertheless, some downside risks still lurk on the region's horizon. Most notably, trade tensions between the PRC and the US, the world's two biggest economies, remain unresolved and hover over the world economy and global financial markets. In addition, the rapid growth of private debt (household and corporate) poses a threat against the backdrop of tightening global liquidity conditions. The risk of excessively rapid private debt accumulation to financial stability is well known, but debt buildup can also have adverse repercussions for the real economy, including pronounced recessions that further jeopardize financial stability. Over a longer time horizon, we can expect the growing risks of climate change and environmental degradation to serve as a catalyst in the development of green bond markets in emerging markets (**Box 2**). Furthermore, climate risks are raising the cost of debt financing for climate-vulnerable developing economies (**Box 3**).

Against the backdrop of a fragile and febrile global financial and economic environment, one potential

Box 2: Spotlight on Emerging Market Green Bonds

"All financing will be green."

– Patrick Njoroge
Governor, Central Bank of Kenya, 24 May 2018

The Climate Bonds Initiative (CBI) sees huge untapped potential for emerging market economies to issue green bonds.[a] Growing populations and increased urbanization mean that many emerging market economies will require large-scale investment in infrastructure. Given the risks associated with extreme weather events, this infrastructure needs to be low carbon and climate resilient. Emerging market economies are among the most vulnerable to the effects of climate change, but a recent report from the Imperial College Business School and SOAS University of London that was commissioned by the United Nations Environment Programme confirms that for many of these economies the cost of borrowing is higher.[b]

Green bonds provide a vehicle for large-scale public and private sector funding and can attract new international investors to emerging market economies with the capacity to issue such bonds. Aggregation could be a useful strategy to fund smaller projects.

Green bond issuers are keen to determine whether they can expect better pricing for a green bond. This could mean that the new issue premium is either smaller than it may have been historically or lower than had been expected. At present, CBI cannot demonstrate this because of insufficient data. While preferential pricing cannot be guaranteed in any market, green bonds can offer myriad other benefits to issuers.

The International Capital Market Association's Green Bond Principles encourage additional transparency around assets financed and internal management processes to enhance investor comfort in emerging markets. The external review process serves to confirm that adequate procedures are in place to manage the proceeds. For example, the Government of Nigeria issued a local currency green bond in December 2017 that included a mechanism to ring-fence the proceeds.[c] An inspection team comprising stakeholders was appointed to monitor the quality of work. Where the standards were not being met, borrowers were asked to achieve the required standards before more money could be released. This anecdote highlights a critical differentiating feature of green bonds that can be leveraged successfully by emerging market issuers: investors can retain better control of the proceeds.

Between January 2016 and the end of June 2018, USD80.5 billion of green bonds were issued in emerging markets (**Table B2.1**). An overwhelming share of this debt (93%) was denominated in either Chinese renminbi, United States dollars, or euros. About 46% of emerging green bond issues in 2016–2018 were denominated in Chinese renminbi (**Figure B2.1**). During this same period, a total of USD25.9 billion was also issued by supranationals. Most of the proceeds would have been directed into emerging markets, including those with an insufficient credit rating to raise and manage money independently. The most prolific

[a] CBI uses the Morgan Stanley Composite Index Market definition, which is available at https://www.msci.com/market-classification.
[b] Bob Buhr and Ulrich Volz. 2018. *Climate Change and the Cost of Capital in Developing Countries*. https://imperialcollegelondon.app.box.com/s/e8x6t16y9bajb85inazbk5mdrqtvxfzd.
[c] Nigeria has sovereign ratings of B2 (Moody's) and B (S&P).

continued on next page

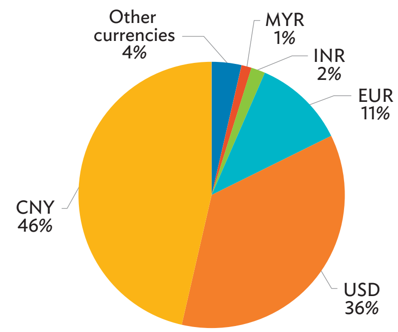
Box 2: Spotlight on Emerging Market Green Bonds *continued*

Table B2.1: Green Bonds Issued in 2016–2018

Economy	Amount (USD billion)
Viet Nam	0.03
Nigeria	0.03
Fiji	0.05
Chile	0.07
Mexico	0.16
Morocco	0.17
South Africa	0.17
Philippines	0.23
Rep. of Korea	0.28
Colombia	0.33
Hong Kong, China	0.33
Taipei,China	0.40
Brazil	0.67
Malaysia	0.98
India	1.37
European Union	8.98
United States	28.89
People's Rep. of China	37.34
Total	**80.47**

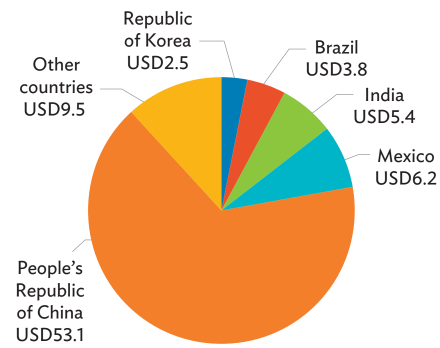
USD = United States dollars.
Source: Climate Bonds Initiative.

Figure B2.1: Denomination of Green Bonds in Emerging Markets, 2016–2018



CNY = Chinese yuan, EUR = euro, INR = Indian rupee, MYR = Malaysian ringgit, USD = United States dollar.
Source: Climate Bonds Initiative.

Figure B2.2: Most Prolific Green Bonds Issuers, 2016–2018 (USD billion)



USD = United States dollar.
Source: Climate Bonds Initiative.

domiciles for green bonds to date have been the People's Republic of China (Moody's: A1; S&P: A+), Mexico (Moody's: A3; S&P: BBB+), and India (Moody's: Baa2; S&P: BBB–) (**Figure B2.2**).

An active green bond market is contingent on an active bond market. CBI pricing work concentrates on investment-grade bonds issued in either US dollars or euros with a minimum size equivalent to USD300 million for bonds issued in 2016–2017 or USD500 million for bonds issued in 2018. The pool of eligible issuances over the past 2.5 years comprises 29 green bonds from 10 emerging market economies. Seven of the green bonds are EUR-denominated, and the remaining 22 are USD-denominated. The combined issuance size of the bonds is USD20.5 billion, or more than a quarter of total emerging market issuance over the same period.

Eight sectors are represented in this sample pool: financial (12 bonds), industrials (4), government (3), quasi-government (2), basic materials (2), consumer cyclical (2), utilities (2), and energy (1). Among the pool of developed market bonds qualifying for CBI pricing research, financials, utilities, and quasi-governments are the three largest sectors represented in terms of issuance size. On the other hand, just two of the emerging market bonds analyzed come from utilities. Green bonds are the ideal vehicle to finance development in infrastructure such as utilities, and CBI hopes to see more issuance in this and other nonfinancial corporate sectors as the market expands.

Demonstration bonds from local sovereign issuers could also contribute to more green bond issuance in emerging markets. Thus far, Poland and Indonesia have issued benchmark-sized bonds in hard currency. Nigeria and Fiji have issued green bonds in local currency, though not in amounts large enough to qualify for CBI research. Benchmark-sized and hard currency bonds could help other emerging

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Box 2: Spotlight on Emerging Market Green Bonds *continued*

market governments attract funding from the international investment community. The Sustainable Banking Network recently published *Creating Green Bond Markets*, which includes an overview of regulations and guidelines for green bonds in emerging markets as well as several case studies.[d]

The appetite for green bonds in hard currency has sufficiently evolved for the market to absorb larger bonds, with more dedicated green bond funds situated in Europe. As part of CBI's research into the distribution of green bonds, data have been gathered for 8 out of 28 emerging market green bond issuances over the past 2.5 years. On average, 31% of these bond issuances were bought by investors describing themselves as green. Poland 2026 (41% of the total) and ICBC 2022 (43%) were the two issuances with the largest allocation shares going to green investors. Both of these issuers have an average credit rating of A. Meanwhile, Indian Railway 2027 (24%) and Rural Electric 2027 (24%) had the smallest allocation shares going to green investors, with both bonds carrying India's country risk.

Mexico City Airport (Moody's: Baa1; S&P: BBB+) has raised a total of USD6.0 billion split between four bonds, making Mexico the most prolific investment-grade emerging market domicile of green bonds in our sample. The order book for Mexico 2026, with a coupon rate of 4.25% and an issuance size of USD1 billion, received indications of interest 10 times the size of the bond, the most CBI has observed for either a green bond or a vanilla equivalent over the last 2.5 years.

Entities from the People's Republic of China are an overwhelming presence in the emerging market green bond space due to clear policy guidelines from the People's Bank of China. Chinese issuance totaled USD53.1 billion between January 2016 and June 2018. Most Chinese green bonds are CNY-denominated, but USD5.8 billion worth of bonds have qualified for CBI pricing studies, divided between four EUR-denominated and six USD-denominated green bonds. Bank of China (Moody's A1; S&P: A) and China Development Bank (Moody's: A1; S&P: A) have each issued green bonds in both euros and US dollars. Crucially, Chinese bonds issued in hard currencies enable investors to express a view on the People's Republic of China without needing an onshore presence or having to trade through Bond Connect.

Poland (Moody's: A2; S&P: BBB+) is the third-largest emerging market in the CBI sample due to a pair of green sovereign bonds issued in December 2016 and January 2018. Poland is an emerging market green bond issuer with comparable bonds. Poland's first green bond issued in 2016 came with a small new issue premium, while the green bond issued in January 2018 was priced on the curve. Looking at two other recent issues from Poland, they also both were priced on the curve. Therefore, investors required a small premium for the demonstration green bond, but the second bond priced no different than a nongreen bond. During the pricing process, spreads for each of the green bonds moved 12 basis points (bps) from the initial price talk to final pricing, compared with 5 bps and 7 bps for the vanilla bonds. The order books of the green bonds for which data are available are at least double that of the vanilla bonds. In terms of distribution, 41% and 61% of the two green bonds went to dedicated green funds, thus introducing a new investor category to Poland. This is an important feature for emerging markets because a diverse investor base affords the issuer more flexibility when reopening bonds.

[d] Sustainable Banking Network. 2018. *Creating Green Bond Markets: Insights, Innovations, and Tools from Emerging Markets*. https://www.ifc.org/wps/wcm/connect/55e5e479-b2a8-41a6-9931-93306369b529/SBN+Creating+Green+Bond+Markets+Report+2018.pdf?MOD=AJPERES.

upside risk is the expected slowdown in the pace of the US Federal Reserve's interest rate hikes. The Federal Reserve raised interest rates four times for a total of 100 bps in 2018, but the market currently foresees only two rate hikes totaling 50 bps in 2019. There is some uncertainty about the pace and magnitude of the Federal Reserve's rate hikes. For example, if the US labor market continues to tighten, generating strong upward wage pressures, the Federal Reserve's rate hikes may exceed market expectations. Nevertheless, the market consensus points to a moderation of US monetary policy tightening, especially since US economic growth momentum shows clear signs of slowing. Falling inflation and tightening global liquidity conditions also support a more cautious and gradual approach to raising interest rates. Since the Federal Reserve's forceful interest rate hikes contributed to the financial instability of emerging markets in 2018, we can expect the prospect of gentler, smaller rate hikes to contribute to their financial stability in 2019. That is, a common destabilizing factor that

Box 3: Climate-Vulnerable Developing Economies Face Rising Cost of Debt

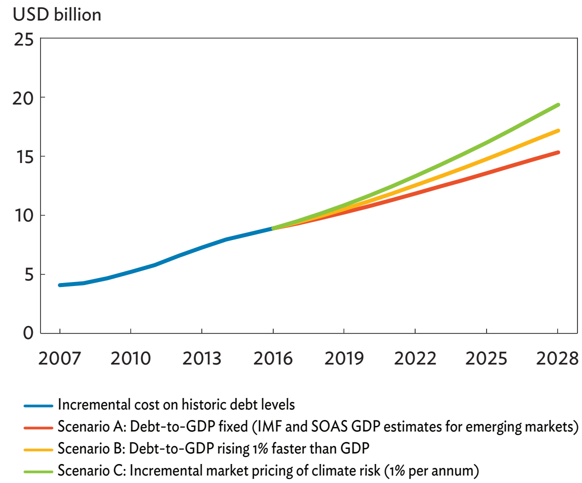
Integrating climate risk into financial decision-making is key to addressing the financial stability risks associated with climate change. It is also vital for pricing the correct cost of carbon-intensive investments and fostering sustainable investment and development. Yet, properly accounting for the risks and costs posed by climate change will have unintended adverse consequences for those who are particularly vulnerable to climate change and lack the resources to invest in resilience.

In a recent report commissioned by the United Nations Environment Programme, researchers from the Imperial College Business School and SOAS University of London conducted the first systematic analysis of the relationship between climate vulnerability, sovereign credit profiles, and the cost of debt. The empirical work indicates that interest rates on the debt of climate-vulnerable developing economies are already higher than they would otherwise be due to climate vulnerability. The estimates suggest that exposure to climate risks has increased the cost of debt for these economies by an average of 117 basis points. This means that for every USD10 that climate-vulnerable developing economies spend on interest payments, they have to pay another USD1 because of this vulnerability.

In absolute terms, this has translated into more than USD40 billion over the past decade in additional interest payments on government debt alone for 40 climate-vulnerable economies. Incorporating higher sovereign borrowing rates into the cost of private external debt, the report estimates that climate risks have cost debt-issuing vulnerable developing economies over USD62 billion in higher interest payments across the public and private sectors. These additional costs are projected to expand to USD146 billion–USD168 billion over the next decade (**Figure B3**).

Such forecasts provide only a rough estimate of the additional cost facing climate-vulnerable developing economies. If anything, these estimates are conservative. The underlying model incorporates only a subset of climate vulnerabilities, which itself is a subset of the wider range of climate risks. It is implicitly biased downward by its backward-looking nature and the exclusion of indirect effects on the economy, higher project hurdle rates, and the fact that these economies' access to financial markets is already limited.

Figure B3: Climate Risk Incremental Cost of Debt for Climate-Vulnerable Developing Economies



GDP = gross domestic product, IMF = International Monetary Fund, SOAS = School of Oriental and African Studies.
Source: Bob Buhr and Ulrich Volz. 2018. *Climate Change and the Cost of Capital in Developing Countries*. https://imperialcollegelondon.app.box.com/s/e8x6t16y9bajb85inazbk5mdrqtvxfzd .

The increased cost of sovereign debt has a broad impact on an economy as it also raises the cost of capital in the private sector. The worsening of both public and private financing costs constrains crucial investments and the development prospects of societies that are already punished by climate change. The cruel irony is that economies that have not contributed to climate change effectively end up paying twice: for the physical damage their economies face and through higher costs of capital. Climate-vulnerable economies face the unenviable task of managing the increased financial costs of climate change as the physical impacts of climate risks themselves accelerate.

An important corollary is that a higher cost of debt makes investment in climate adaptation more difficult. There is a risk that climate-vulnerable developing economies enter a vicious circle: greater climate vulnerability raises the cost of debt, limiting the fiscal room for investment in climate adaptation, which in turn makes these economies even more vulnerable, with further adverse effects on the cost of capital. As financial markets increasingly price climate risks, the risk premia of vulnerable economies, already high, are likely to rise further.

[a] Bob Buhr and Ulrich Volz. 2018. *Climate Change and the Cost of Capital in Developing Countries*. https://imperialcollegelondon.app.box.com/s/e8x6t16y9bajb85inazbk5mdrqtvxfzd.

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Box 3: Climate-Vulnerable Developing Economies Face Rising Cost of Debt *continued*

The increase in the costs of debt servicing associated with climate vulnerability is an issue of concern beyond economics and finance. It touches upon an economy's capacity to fund education, health, and infrastructure, and to enable basic standards of living. Because poorer economies tend to have relatively weak sovereign ratings and higher borrowing rates, they are particularly sensitive to new financial risks. Greater overall debt burdens could prevent poor economies from funding the investments required to protect their citizens and economies from the physical manifestations of climate change at a time when those investments are most needed.

But the report also reveals a bright spot: the research indicates that investing in climate change social preparedness partially offsets the effects of climate vulnerability. This highlights the crucial importance of investments that enhance the adaptation capacity and resilience of climate-vulnerable economies. Such investments will not only help vulnerable economies to better deal with climate risks, they will also help reduce the cost of their borrowing. Markets have been placing the wrong value on efforts that mitigate climate risks. Such a market failure implies that the hurdle rate for adaptation projects are too high, and the returns on such projects are commensurately greater. Helping people address climate risk is clearly a good investment.

International cooperation and adequate investments in climate resilience are needed to mitigate the increased capital costs facing climate-vulnerable developing economies. International support for increased investments in climate adaptation measures and mechanisms to transfer financial risks can help these economies enter a virtuous circle in which greater investments in adaptation will reduce both vulnerability and the cost of debt, providing these economies with extra room to scale up investments to tackle the climate challenge. Without international support, however, the likely outcomes are increased vulnerability, rising costs of capital, and deferred development.

adversely affected emerging markets as a whole is likely to become less of a destabilizing factor and may even become a stabilizing factor.

Partly due to market expectations of more gradual monetary policy tightening by the Federal Reserve, financial markets in emerging economies have been showing signs of greater stability since the fourth quarter of 2018. The Argentine peso and Turkish lira came under intense pressure in the second and third quarters of 2018 as evidenced by the sharp depreciation of both currencies. The immediate cause of the depreciations lay in economy-specific weaknesses that rendered the two markets more vulnerable than others. At the same time, US monetary policy tightening and the consequent strengthening of the US dollar also played a role. The combination of rising US interest rates and a strengthening dollar increased the attractiveness of US assets and reduced the attractiveness of emerging market assets, triggering capital outflows from emerging markets. Tightening global liquidity conditions tempered the risk appetite of global investors toward emerging markets and induced them to discriminate between markets based on economy-specific factors. The prospect of a more gradual monetary normalization by the Federal Reserve will mitigate the loss of investors' risk appetite toward emerging markets. This, in turn, will restrain capital outflows from emerging markets and reduce their vulnerability to shocks.

The most salient risk to global economic growth and financial stability remains global trade tensions. Although trade tensions with the US encompass a wide range of economies, the simmering conflict between the PRC and the US is by far the most significant and consequential. The two countries are the world's two biggest economies and both are major trading partners for all emerging East Asian economies. On 2 December, the two sides agreed to a temporary truce in a bid to deescalate tensions. The ceasefire stipulates that both governments refrain from increasing tariffs or imposing new tariffs for 90 days until 1 March as the two sides work toward a more permanent and comprehensive agreement. The US agreed not to increase tariffs from 10% to 25% on a list of goods previously drawn up. In addition, the US will refrain from imposing tariffs on an additional USD267 billion worth of Chinese goods, as it had threatened earlier. The PRC committed to purchase more US products, especially agricultural and energy products. However, until the PRC and the US manage to work out a lasting settlement, the trade conflict between the two giants will continue to be a major source of uncertainty for global financial markets and the world economy.

Other global trade conflicts can also have serious repercussions. For example, the US is currently threatening automobiles and automobile parts imported from all countries with steep tariffs on national security grounds. If implemented, the tariffs will disrupt and damage one of the world's biggest manufacturing industries. The European Union (EU) has threatened retaliatory tariffs on USD23.0 billion worth of goods. The threatened US auto tariffs follow US tariffs on imports of European aluminum and steel, which were based on the same national security grounds. The EU retaliated with tariffs on EUR2.8 billion worth of US goods. The US auto tariffs will not only hit the EU hard, but also Japan, the Republic of Korea, and other exporters of automobiles and auto parts. Given the sheer size of the EU economy, any significant escalation of trade tensions between the EU and the US will further exacerbate the already large downside risk that global trade tensions pose to the world economy.

Global trade tensions are contributing significantly to another downside risk to global financial stability, namely the slowdown of global growth momentum. The International Monetary Fund has twice downgraded its forecast for global growth, first in October 2018 and again in January 2019. Advanced economies and emerging markets are both expected to grow at a somewhat slower pace than earlier expected. The risk of a further deceleration is especially evident in Europe. In particular, the failure of the EU and the United Kingdom to smoothly arrive at an agreement is causing the Brexit process to drag on and creating a lot of uncertainty in financial markets. A messy and disruptive no-deal exit of the United Kingdom from the EU is likely to trigger instability in financial markets and damage investor sentiment. It would also further drag down growth in Europe, which is already showing signs of weakness. In Asia, the biggest concern is the adverse effect of the trade conflict with the US on the PRC's economic growth. While the PRC's growth was already moderating for a number of reasons, in particular the authorities' efforts to rein in credit expansion, the trade conflict has eroded business confidence and further dampened growth momentum. A sharper-than-expected slowdown in the PRC would harm the region's growth and stability.

The PRC's efforts to control credit growth stem from concerns about rapid debt buildup. According to the International Monetary Fund, global trade tensions and other potential triggers are more likely to lead to a deterioration of investor sentiment and therefore economic growth when the levels of public and private debt are high.[3] In Asia's case, the rapid accumulation of private debt, which consists of both household and corporate debt, is a source of concern in some economies. Since the global financial crisis, the US and many European countries have experienced a decline in their private-debt-to-gross-domestic-product ratios. In contrast, the relative size of private debt has grown rapidly in emerging markets in the post-crisis period, including emerging markets in Asia. One key driver of the private debt buildup in emerging markets has been the low-global-interest-rate environment resulting from the exceptionally accommodative monetary policies of advanced economies. Excessive private debt buildup has obvious implications for financial stability. If debt reaches unsustainable levels and companies or households are unable to repay their debts, banks and the entire financial system will be negatively impacted. The real economy suffers since households cut back consumption and firms slash investment to repair their balance sheets. Recent research from the Asian Development Bank finds that recessions resulting from excessive debt buildup are more damaging to the economy than normal business-cycle recessions. Furthermore, the research finds that rapid corporate debt buildup is as damaging to the economy as rapid household debt buildup.

Overall, the immediate threat of a generalized risk aversion toward emerging markets triggered by severe stress in vulnerable economies has receded somewhat. One significant positive factor for emerging East Asia's financial stability is the prospect of more gradual and cautious interest rate hikes by the Federal Reserve in 2019. Nevertheless, some downside risks still loom on the horizon of the region's financial landscape. Above all, global trade tensions have not yet been fully resolved and their persistence continues to create uncertainty in financial markets, with adverse implications for growth. There are also other downside risks, most notably the moderation of global growth momentum, the buildup of private debt in emerging markets, and fallout from a disorderly Brexit.

[3] International Monetary Fund. 2018. *Global Financial Stability Report—A Decade after the Global Financial Crisis: Are We Safer?* Washington, DC.