GEMs Paper #36

2018 EM Local Markets Guide

Primer

16 October 2018

A guide to better understand each market

This guide aims to assist the growing investor base in emerging local markets, an asset class that combines attractive opportunities with some significant challenges. While we do not make specific investment recommendations, the guide leverages the extensive experience of BofA Merrill Lynch's global emerging market (GEM) research team to provide a clearer understanding of the intricacies and pitfalls present in these markets.

Investor demand in local markets modest decline in 2018

Foreign investor interest in emerging markets has been declining slightly in 2018, following strong incremental demand in 2016-17. The appeal for EM not only lies in the relatively healthy balance sheets and generally conservative fiscal attitudes of these countries, but also in the high yields. While external shocks, including the China slowdown, commodity price volatility and the anticipated start of the Fed tightening cycle, had dampened the strong wave of money flowing into EM, the prolonged quantitative easing in Europe and Asia with very low interest rates, fueled demand for high yielding EM assets until 2018 as rising US rates, a strong USD and local rollover risk made EM assets relatively less attractive.

Diversification amid converging inflation

Despite the volatility and retail outflows that began in 2Q13 when US tapering concerns emerged, institutional investors in local debt markets (LDM) have remained committed to the asset class, continuing to increase their holdings from 2014-2017. Outflows following the 2018 volatility have been mild, compared to performance. These investors seek alternative investment opportunities amid converging inflation. LDMs offer opportunities for income through coupons and potentially price and FX appreciation.

High historical returns and Sharpe ratios

From Jan 2001-Sept2018, local currency bonds in the emerging markets have generated a cumulative return of 192% for an unhedged USD investor. This compares to 102% if invested in US Treasuries over the same period. Local debt volatility has been high at times, resulting in a lower Sharpe ratio of 0.44 for EM local currency debt, compared to 0.48 for US Treasuries. The stock of domestic government debt rose 20% in USD terms, to US$10.6tn as of YE2017. Among the three regions, Asia claims the majority of LDM issues, although capital controls make the region relatively less accessible to foreigners. Emerging Europe, the Middle East and Africa (EEMEA) is the most accessible region, and Latin America generally offers the highest yields and returns.

Beware of capital controls

Opportunities will likely remain abundant over the medium term, but understanding the characteristics of each market is difficult. An important issue for various governments amid Fed tightening has been sudden outflows, which have depressed lending and triggered domestic financial volatility. In response, some policymakers have interfered and imposed measures to discourage such flows, adding to the investment challenge.

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in FX markets and the financial resources to absorb any losses arising from applying these ideas or strategies.
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Overview

Local debt markets (LDM) have made great strides in the last 17 years. As of December 2017, the outstanding stock of local market domestic government debt totaled US$10.6tn, compared to just US$1.1tn in December 2000. Debt stock grew 20% in local and USD terms. By far, the largest market is mainland China with US$4.3tn in outstanding government debt, followed by Brazil (US$1.5bn) and India (US$0.9bn). For updates, see our Size and structure of Global Emerging Markets tradable debt.

It is clear from this that local currency government debt markets have become an important source of domestic financing for emerging economies. However, the size of debt stock should not be taken as a sufficient guide to the underlying liquidity and functioning of debt markets.

Local bond types issued by emerging market countries are no different in nature from those issued by developed markets. Though calculating conventions may differ, foreign investors normally have access to several debt instruments denominated in local currency. The most common instruments are fixed-rate coupon bonds; fixed-rate zero-coupon notes or bills sold at discount; inflation-linked bonds; floating bonds, which are linked to the reference interest rate or to a market rate; and, in some cases, foreign exchange-linked bonds, which are linked to a hard currency but payable in local currency.

LDM investment considerations

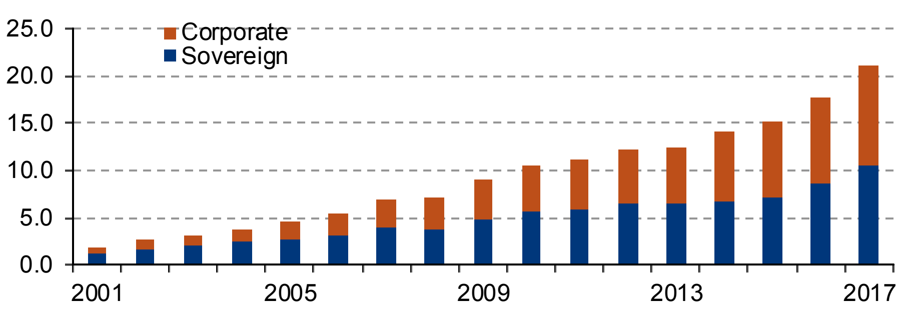
The variety of local bonds open to foreign investors may be familiar, but there may be regulations that lead to capital controls and convertibility risk for foreign investors. Countries have different regulations, laws, and limits for foreign investment, typically including the need to set up a local account, hire a local custodian, report activity to the local regulator, and pay taxes, if applicable. Also, each country has its own requirements.

For example, some countries limit the amount and/or the type of bonds that foreign investors can hold, while others impose taxes on capital inflows, have minimum holding periods or intervene heavily in the foreign exchange market (see page 10 for more on capital controls). In some cases, local trading conventions differ from the international conventions, adding another layer of caution when trading a local debt instrument.

Capital controls have been relaxing in recent years. Though improved, China and India still have broad controls, which result in foreign investors holding just 4% of the local government debt in each country. Colombia and Brazil have opened their markets, reducing some deterring taxes and regulations to foreigners, for an increase of foreign holdings to 25% and 12% as of June 2018.

Even on this basis, investors will need to weigh the relative merits of potential withholding taxes, clearing and settlement accessibility, and whether they are included in key global benchmark bond indices. The country sections in the following pages are intended to guide investors through this maze. Policy makers and debt management offices have worked hard to establish benchmark curves as a means to improve secondary trading. This has been achieved through coordinated auction schedules, bond

Chart 1: Total Domestic Debt Outstanding in USD tn



Source: BofA Merrill Lynch, BIS, Bloomberg

Table 1: Barriers to cross-border investment and settlement

	Regulatory barriers		Settlement barrier)
1	Foreign investor quota	1	Messaging standards
2	Foreign investor registration	2	Securities numbering
3	Currency exchange controls	3	Settlement cycle
4	Cash controls-credit balances, overdrafts	4	Trade and settlement matching
5	Tax	5	Physical certificates
6	Omnibus accounts restrictions		
7	Regulatory framework		
8	Legal framework		
9	Local custodian required		

Source: BofA Merrill Lynch Global Research

buybacks, and switches to maintain liquidity and benchmarks. Active and liquid interest rate swap markets are also available for investors hedging in many local markets.

Average bid-offer spreads and the bond turnover ratio (the value of bonds traded divided by the average amount of bonds during the quarterly period) provide a good indication of the accessibility and liquidity of the underlying markets.

EM central banks

We also provide a systematic account of the legal, political, and institutional constraints that central bankers face in EM, their policy biases, the way they operate in practice rather than in theory, and other aspects of their day-to-day operations.

Foreign ownership is increasing

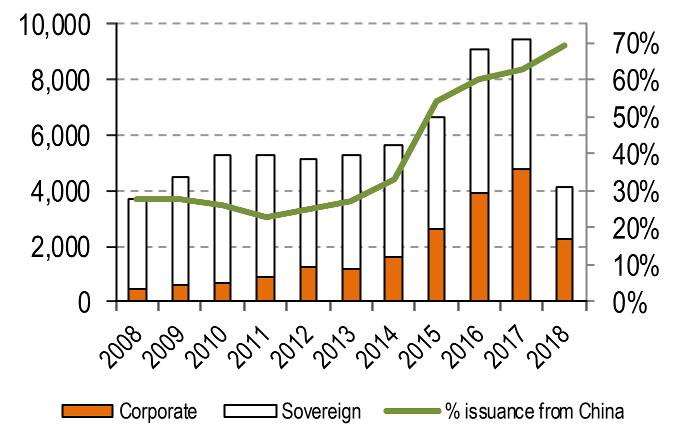
Following the 1997 Asian crisis, foreign investment cycled out and back in again. Foreign ownership of classes of outstanding government bonds has increased to unprecedented levels. The highest concentrations of foreign ownership are in Mexico (62.9%), Peru (44.1%), Malaysia (40.5%), South Africa (40.1%), Czech Republic (39.8%), Indonesia (37.7%), Poland (30.2%), Russia (28.2%), Colombia (25.2%) and Turkey (19.6 %). With increased share of outstanding bonds held by foreigners, domestic yields declined significantly.

Table 2: Foreign holdings of local debt actual values and changes

			Changes in US$		Change in % of FH		
	Holdings USD (bn)	Foreign Share	6m	1y	6m	1y	As of
Asia							
China	143.8	7.7%	46.0	72.4	2.2%	3.4%	7/31/2018
India	30.7	4.0%	-4.7	-2.1	-0.7%	-0.6%	7/31/2018
Indonesia	58.2	37.7%	-2.1	4.4	-3.6%	-1.7%	7/31/2018
Malaysia	38.0	40.5%	-3.5	1.4	-5.2%	0.3%	7/31/2018
South Korea	80.3	15.2%	9.5	7.6	1.0%	0.7%	7/31/2018
Thailand	21.6	15.9%	0.8	2.1	0.1%	0.1%	7/31/2018
EEMEA							
Turkey	23.0	19.6%	-1.7	0.0	-2.8%	-2.7%	7/31/2018
Czech Rep	26.1	39.8%	0.4	-6.6	-1.9%	-7.8%	6/30/2018
Poland	51.3	30.2%	-2.8	-5.3	-2.5%	-3.6%	6/30/2018
Hungary	13.0	16.9%	0.6	0.7	-0.1%	-1.2%	7/31/2018
South Africa	na	40.1%	na	na	-1.0%	-0.1%	7/31/2018
Romania	6.0	18.2%	0.5	0.0	1.1%	0.1%	5/31/2018
Russia	31.6	28.2%	-4.0	1.8	-4.9%	-2.2%	6/30/2018
Israel	6.3	4.8%	-1.2	-1.2	-0.8%	-0.7%	6/30/2018
LatAm							
Brazil	111.1	11.9%	3.7	3.5	-0.2%	-1.0%	6/30/2018
Mexico	95.8	62.9%	0.4	1.3	-0.2%	0.4%	7/31/2018
Peru	13.9	44.1%	-1.0	1.5	-4.7%	-2.7%	5/31/2018
Colombia	25.1	25.2%	-10.0	-8.0	-1.2%	-0.4%	7/31/2018

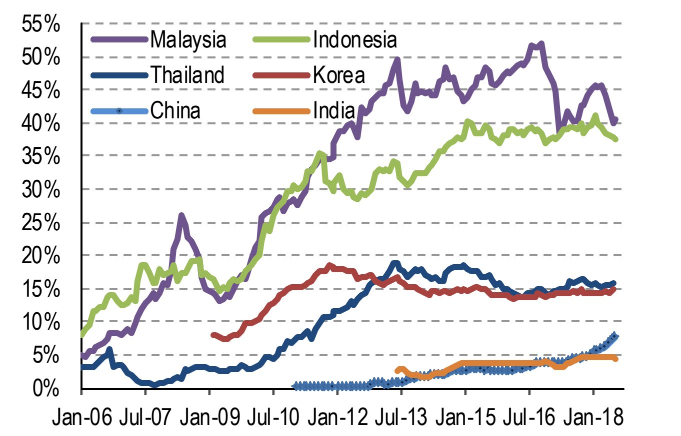
Source: BofA Merrill Lynch Global Research, central government websites

Chart 2: LDM issuance - 2008-2018 YTD : China is almost 70%



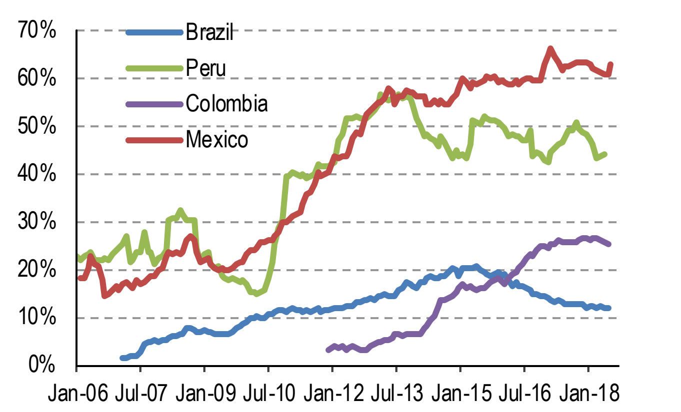
Source: BofA Merrill Lynch Global Research, SRCH on Bloomberg

Chart 3: Asia foreign bond holdings share



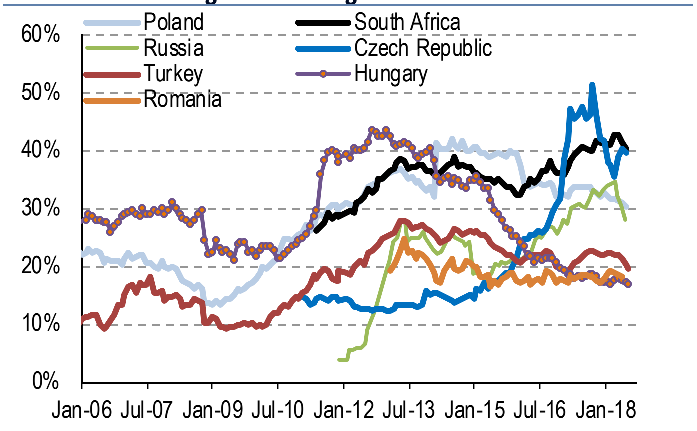
Source: BofA Merrill Lynch Global Research, Haver

Chart 4: LatAm foreign bond holdings share



Source: BofA Merrill Lynch Global Research, Haver

Chart 5: EEMEA foreign bond holdings share



Source: BofA Merrill Lynch Global Research, Haver

Stock of debt

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GEM domestic debt stock has grown 17% per year since 2000

The total global emerging market (GEM) domestic tradable debt universe increased 20% in USD and local terms in 2017 to reach a new high of US$21.2tn (Table 3). On average, total GEM domestic debt stock has grown approximately 17% in USD terms per year since 2000. Growth in 2016 and 2017 has been due to increased government funding needs, opportunistic issuance by corporates to fund expansion, and global and GEM-specific demand for fixed income debt, as these markets offer diversification and attractive alternate to increased risk in developed markets. However, 2016 and 2017 was primarily due to a large increase in China debt.

China domestic debt grew 24% in USD terms in 2017, after growing 22% in 2016, with the government domestic debt components increasing 33% and domestic corporate and financial institutions growing by 20%. Part of this growth in USD terms was due to the 7% currency appreciation. Growth in government debt in the last years was mainly due to swaps of local government high-interest, short-term debt, such as bank/trust loans, with cheaper, longer term municipal bonds to alleviate the debt burden of local governments. China is now 54% of all GEMs domestic debt and 17% of all GEMs external debt. See Size and structure of Global Emerging Markets tradable debt 30 July 2018.

Growth in debt stock in local currency outside of China was substantial in some countries. Among the larger countries, domestic debt in local terms grew the most in Argentina, Indonesia, Russia, Hungary and Poland, all of whom grew between 27-30% in USD terms. In local terms, Indonesia and Argentina experienced FX depreciations of 1% and 15% respectively, while Russia FX appreciated by 7%.

Domestic market dominates

Domestic debt accounts for approximately 86% of total GEM debt outstanding, evenly split between corporate and government debt 50% vs 50% (Table 5). Total domestic corporate debt outstanding increased 17% to $10.6bn. Total domestic government debt outstanding grew 23% to US$10.6tn in 2016 (Table 3).

Table 3: GEM tradable domestic debt (US$ bn)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Govt	3,158	4,025	3,812	4,879	5,683	5,890	6,458	6,563	6,728	7,067	8,610	10,557
Corp	2,359	2,894	3,375	4,094	4,866	5,293	5,814	5,924	7,294	8,195	9,112	10,644
Total	5,516	6,919	7,187	8,974	10,548	11,183	12,272	12,487	14,023	15,262	17,723	21,201

Source: BofA Merrill Lynch Global Research, BIS, Bloomberg

Domestic debt heavily concentrated in a few countries

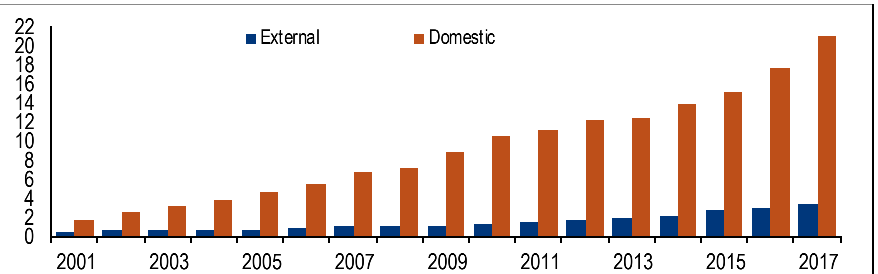
China, Brazil and South Korea comprise 72% of domestic debt, with China at $11.4tn accounting for 54%. The BRIC countries (Brazil, Russia, India and China) comprise 71% of all domestic GEM debt, while the GEM-10 (China, Brazil, South Korea, India, Mexico, Malaysia, Russia, Taiwan, Thailand and Turkey) account for 88%.

Table 4: GEM tradable domestic debt by country (USD bn)

	Fin Inst	Corporate	Government	Total
LatAm & Caribbean	817	225	2,239	3,282
Argentina	56	6	109	171
Brazil	515	130	1,538	2,183
Chile	69	36	34	140
Colombia	0	2	86	88
Costa Rica	2	0	31	33
Dominican Republic	3	0	13	16
Ecuador	0	0	4	4
El Salvador	0	0	1	1
Jamaica	0	0	6	6
Mexico	151	41	329	521
Panama	8	4	4	16
Peru	13	5	27	45
Trinidad & Tobago	0	1	2	2
Uruguay	0	0	5	5
Venezuela	0	0	51	51
Asia Pacific	5,364	3,824	6,990	16,178
China	4,277	2,816	4,326	11,419
Hong Kong	19	25	147	191
India	258	81	861	1,200
Indonesia	47	16	156	219
Kazakhstan	11	2	24	37
Malaysia	36	129	167	332
Pakistan	…	0	107	107
Philippines	0	0	89	89
Singapore	…	0	87	87
South Korea	521	550	623	1,694
Sri Lanka	1	0	32	33
Taiwan	56	123	191	370
Thailand	136	81	136	353
Vietnam	1	1	45	47
Emerging Europe	121	124	672	918
Bulgaria	0	0	2	2
Croatia	0	1	18	19
Cyprus	0	0	0	0
Czech Republic	12	2	65	78
Hungary	6	1	86	93
Lithuania	0	0	0	0
Poland	10	5	183	197
Romania	1	0	34	34
Russia	75	114	129	318
Slovakia	0	0	0	0
Slovenia	0	0	0	0
Turkey	18	2	141	161
Ukraine	0	0	15	16
Africa & Middle East	81	88	655	824
Bahrain	0	0	13	14
Egypt	0	0	95	95
Israel	30	58	142	230
Kuwait	2	0	15	17
Lebanon	0	0	49	49
Morocco	2	3	38	43
Nigeria	1	0	52	53
Qatar	0	0	0	0
Saudi Arabia	0	0	69	69
South Africa	46	26	177	249
Tunisia	0	0	4	4
United Arab Emirates	0	1	0	1
Total	**6,383**	**4,261**	**10,557**	**21,201**

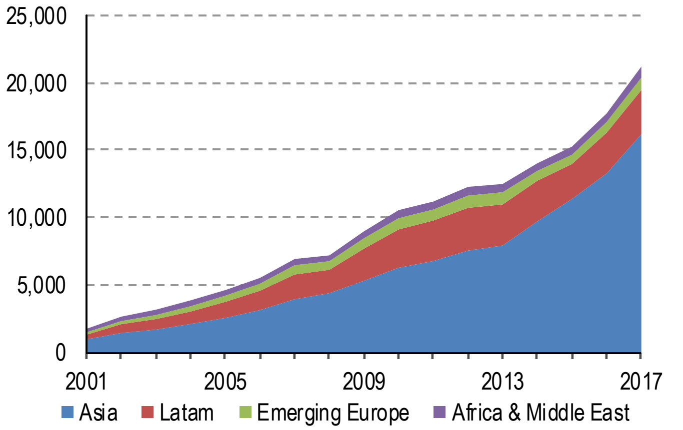
Source: BIS, Bloomberg

Chart 6: Domestic tradable debt growth outpaces external debt (US$ tn)



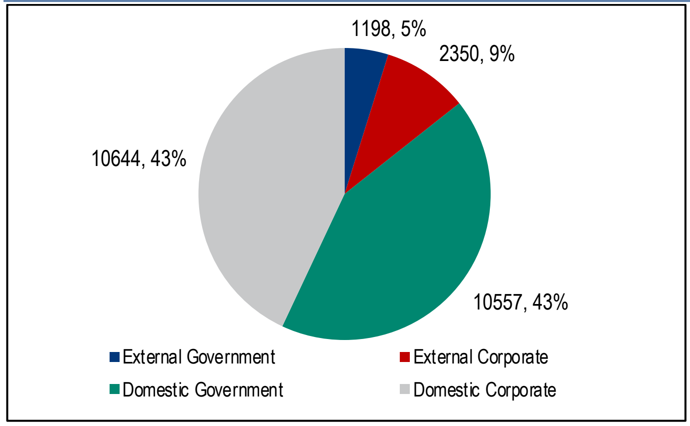
Source: BofA Merrill Lynch Global Research, BIS

Chart 7: Domestic tradable debt growth (by region, US$ bn)



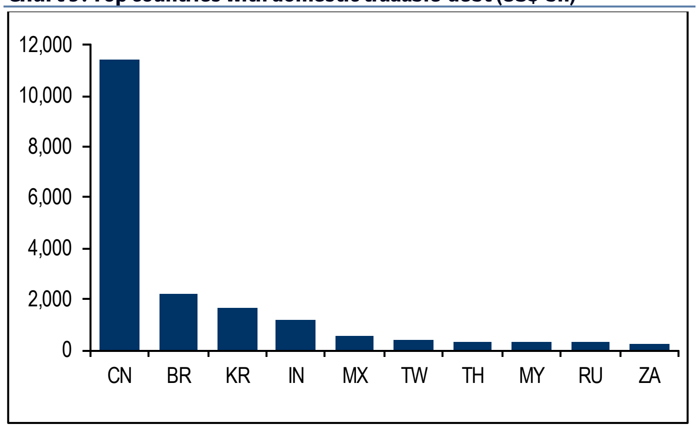
Source: Bloomberg

Chart 8: Domestic tradable debt accounts for 85% of total GEM debt outstanding



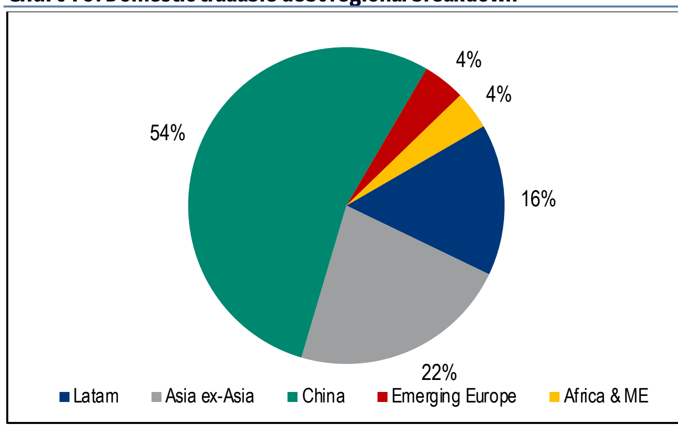
Source: Bloomberg

Chart 9: Top countries with domestic tradable debt (US$ bn)



Source: BofA Merrill Lynch Global Research, BIS, Bloomberg

Chart 10: Domestic tradable debt regional breakdown



Source: BofA Merrill Lynch Global Research, BIS, Bloomberg

Table 5: GEM tradable debt outstanding by segment in 2017 (US$ bn)

	Sovereign		Corporate		Total		% change 2016-2017		
	2016	2017	2016	2017	2016	2017	Sovereign	Corporate	Total
External	988	1,198	2,021	2,350	3,009	3,548	21	16	18
Domestic	8,610	10,557	9,112	10,644	17,723	21,201	23	17	20
Total	9,598	11,754	11,134	12,994	20,732	24,749	22	17	19

*Note: Due to methodological changes, actual external corporate debt growth is omitted this year.
Source: Bloomberg

Capital controls

A capital control is a policy device that a government uses to regulate the investment-oriented foreign currency flows into and out of the country, usually to restrict volatile movements of capital due to investor speculation. Controls on inflows typically respond to the macroeconomic implications of the increasing size and volatility of capital inflows. Controls on outflows are used to limit the downward pressure on currencies, a significant risk to a local bond investment.

Most emerging market countries have some form of capital controls that can be increased as needed. Even those with free convertibility of their currency could institute capital controls if deemed necessary. Capital controls can take the form of transaction taxes; transfer taxes; withholding taxes; reserve requirements; unremunerated reserve requirements; multiple exchange rate systems and/or limitations in terms of the amount of assets to be held; caps on volume permitted; controls on the international sale or purchase of various financial assets; and sometimes even limits on the amount of money a private citizen is allowed to take out of the country.

As the International Monetary Fund discussed[1], the most common experiences in using capital controls are when foreign investor demand is high to limit short-term inflows and during financial crises to limit capital outflows, often applying extensive exchange controls.

Convertibility risk

Convertibility, or transfer, risk is the risk regarding the conversion from local currency into foreign currency, and the inability to transfer foreign currency out of the country. In other words, it is the risk that an investor will not be able to convert local currency into foreign currency, normally due to exchange restrictions imposed by a government. Drastic measures may occur during crises. Four such examples are:

- **Korea, 1997.** Daily currency movement was limited to 5% and the FX market would shut down after that level was reached.
- **Russia, 1998.** Banks froze dollar withdrawals and the central bank terminated the fixing of the currency in the Moscow International Currency Exchange auctions.
- **Argentina, 2001.** Authorities limited domestic resident access to dollars.
- **Brazil, 2008-2013.** The government adopted an IOF tax on foreign inflows for specific financial transactions, but the tax moved back to zero in 2013 (see table on page 238 for more details).

Investors can gain exposure to local currency debt in emerging markets by buying Eurobonds denominated in local currency or transferring money to a specific country and then buying a local debt instrument. For Eurobonds, although the debt may be referenced in local currency, it is payable in hard currency, eliminating the convertibility risk. As a result, Eurobonds' local currency yields typically are lower than domestic yields for a particular tenor.

However, the convertibility risk is not the only driver for higher yields in local bonds. In some countries local debt liquidity is limited, local bonds are governed by local laws and, in some cases, there are restrictions that prevent or limit the amount of bonds that can be held by foreign investors.

[1] International Monetary Fund, "Capital Controls: Country Experiences with Their Use and Liberalization". Occasional paper 190 (2000).

Local rates forecasting: Scope90

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We updated and upgraded our interest rate models in early 2015, adopting a common methodology for all three regions. The goal of this revamped tool, named Scope90, is to identify three-month ahead trading opportunities in the local fixed income markets of emerging markets. The model was updated in July 2015 to increase coverage and allow for forecasting of maturities longer than 10 years for certain countries.[2] Currently, the tool covers the curves of Brazil, Chile, Colombia, Mexico, and Peru in Latin America; China, India, Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand in Asia; and Czech Republic, Hungary, Israel, Poland, Russia, South Africa, and Turkey in EEMEA.[3]

The model works in three steps:

- **Summarize the yield curve:** The yield curve contains information that we summarize efficiently using a limited number of factors. These factors are associated to the level, slope and curvature.
- **Estimate the long-term relationship:** In this step, we project the three factors mentioned above on observable financial and macro factors, including global measures like international rates, stock indices, and commodity prices, as well as domestic factors like inflation, economic activity, monetary policy rates, and exchange rates.
- **Fitting the yield curve:** Using the observed values of the macroeconomic and financial variables, we can obtain fair value estimates for the yield curve. Using forecasts of the relevant macroeconomic and financial variables, we can also forecast the yield curve.

Step 1: summarizing the yield curve

We summarize the yield curve in Nelson-Siegel factors (NS) following Diebold & Li (2006). Specifically, we estimate the three factors according to the following equation:

$$y_t(\tau) = b_{1t} + b_{2t}\frac{1-e^{-\gamma\tau}}{\gamma\tau} + b_{3t}\left(\frac{1-e^{-\gamma\tau}}{\gamma\tau} - e^{-\gamma\tau}\right)¶$$

Here, $y_t(\tau)$ is the yield with maturity in τ months at time t.[4] The factors b_{1t},b_{2t},b_{3t} are the level, slope, and curvature, respectively, at time t. The parameter γ mainly governs the curvature of the curve. We use a different value of this parameter for each country in order to maximize model performance. We estimate the factors b_{1t},b_{2t},b_{3t} for each month using ordinary least squares.

The first two factors exhibit high correlation with the long-term rate (level) and the difference between the 10-year and the 2-year yield (slope), respectively. The second NS factor is actually very negatively correlated with the slope. Therefore, we refer to the negative of the NS second factor as the slope.

[2] The model covers up to 10-year maturities for all countries except Mexico, Peru, and South Africa, for which it covers up to 30 years. For Colombia, the model covers up to 15-year maturities.

[3] The model uses the swap curve for Brazil, Chile, Korea, Malaysia, Thailand, Czech Republic, Hungary, Israel, Poland, South Africa and Turkey. It uses the zero coupon yield curve bond curve for the rest of the countries.

[4] This equation is a more general version of the one originally proposed by Nelson & Siegel (1987).

Step 2: estimating factor relationship with macro variables

The second step in our modeling strategy consists of projecting the three (or two) factors obtained in the first step on macroeconomic and financial variables, both global and domestic. Inflation, output and the monetary policy rate is the minimum set of fundamental variables required to capture basic macroeconomic dynamics, as noted by Diebold, Rudebusch & Aruoba (2006). Since we are working with small open economies, we also incorporate external financial variables and the exchange rate. We estimate each equation with ordinary least squares.

Table 6 describes the typical relationship of each variable with the yield curve factors. We also show for which countries those variables are relevant drivers.

Table 6: Basic macroeconomic variables that drive the yield curve in EM

Factor	Variable	Relationship	Countries
Level	Foreign yields	Positive: EM yields tend to be positively influenced by yields in major markets. We use US, Japan and Euro swap rates.	Brazil, Chile, Colombia, Mexico, China, India, Korea, Malaysia, Philippines, Singapore, Thailand, Czech Rep., Israel, Hungary, Poland, Russia, S. Africa, Turkey
Level	Domestic inflation	Positive: Inflation is positively correlated with local yield levels.	Brazil, Chile, Colombia, Mexico, Peru, China, India, Indonesia, Korea, Czech Rep., Hungary, Israel, Poland, Russia, Turkey
Slope	External slope	Positive: See the relationship between level and foreign yields.	Brazil, Chile, Colombia, Mexico, China, India, Indonesia, Korea, Malaysia, Philippines, Singapore, Thailand, Czech Rep., Hungary, Israel, Russia, S. Africa, Turkey
Slope	Policy rate	Negative: A policy rate cut is usually associated with an improvement in growth expectations, and is therefore associated with a steeper curve.	Brazil, Chile, Colombia, Mexico, Peru, China, India, Korea, Czech Rep., Israel,, Malaysia, Thailand, Hungary, Poland, S. Africa

Source: BofA Merrill Lynch Global Research, Ang & Piazzesi (2006), and Diebold, Rudebusch & Aruoba (2006)

Step 3: forecasting the yield curve

Once we estimate the model, we use it in different ways:

- **Estimate the fair value curve:** Using current values for the independent variables, we obtain the model-implied factors. We then use these and the Nelson-Siegel equation to obtain the model-implied yield curve (usually referred to as fair value or fair-market market curve).
- **Forecast the curve:** We use forecasts for the various inputs and the estimated coefficients to generate forecasts for the three NS factors. We then use the three factors and the NS equation to generate a forecast for the yield curve at various horizons.

The evaluation (back-test) of Scope90 was done exclusively comparing fair value curves with spot curves. The model's performance using forecasted curves was not back-tested because we do not have a consistent history of forecasted macroeconomic variables.

Developing trading strategies

The main objective in developing this model is to use the fair market or forecasted curve to identify trading opportunities. The model generates trading signals when the 3-month forecasted price deviates by more than 1 standard deviation from the 3-month forward market price.

We publish updates of signals for outright positions for 2y, 5y, and 10y maturities, as well as for slope positions of 2y5y, 5y10y, and 2y10y.[5] These are published in our GEMs Weekly.

[5] For the countries that we have longer maturities, we also include signals for 15y, 20y, 30y, 10y15y, 10y20y, and 20y30y.

Exchange rate forecasting: Compass30

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In 2014 we introduced Compass30, our short-run exchange rate model for Asia, EMEA and LatAm. Compass30 uses financial variables to predict currency returns over the following 30 days. The original Viewpoint can be accessed by clicking on the following links: Asia, EEMEA and LatAm. The model covers 20 currencies: CNY, IDR, INR, KRW, MYR, PHP, SGD, THB, and TWD in Asia; HUF ILS, PLN, RUB, TRY, and ZAR in EEMEA; and BRL, CLP, COP, MXN, and PEN in LatAm.

Compass30 seeks to uncover a fundamental long-run relationship between exchange rates and other market variables while modeling the risk-premium that drives short-term expected returns in foreign exchange markets. The model proceeds in two steps. First, we estimate a short-term cointegrating (fair value) equation. Second, we estimate an error-correction (predictive) equation using as one input the residual from the first equation.

Step 1: cointegrating (fair value) equation

In this step we seek to uncover a long-run relationship between exchange rates and other market variables. In addition to standard global and domestic financial variables, we include a global exchange rate factor along the lines of Engel, Mark and West (2012). The authors find that exchange rates themselves offer information about common trends that is difficult to extract from observable fundamentals. The use of exchange rate factors can parsimoniously capture comovement of exchange rates that is not captured by observable fundamentals.

We estimate these exchange rate factors with a principal components analysis (PCA) using monthly observations of the 30 most actively traded global exchange rates according to the 2013 Triennial Central Bank Survey from the Bank for International Settlements (BIS). Before estimation, we take the log of all nominal exchange rate levels. In our analysis, the first three principal components explain 86% of the total variability across the 30 exchange rates, with the first, second, and third components explaining 56%, 16%, and 14%, respectively. The first principal component can be interpreted broadly as a dollar factor that has a correlation coefficient with the DXY index of 0.91. The second principal component can be interpreted as a carry factor that has a correlation coefficient of 0.68 with Deutsche Bank's G10 FX Carry Index. The third principal component can be interpreted as a volatility factor that has a correlation coefficient of 0.40 with JPMorgan's Global FX Volatility Index.

Having estimated the exchange rate factors with PCA, we proceed to estimate the cointegrating equation. This equation is estimated on a country-by-country basis and includes observable financial variables that are thought to explain nominal exchange rates, in addition to the exchange rate factors. The first-step equation for currency i is:

$$s_{it} = \delta F_{it} + X_{it}^T \beta_i + \varepsilon_{it}$$

$$F_{it} = w_{1i} f_{1t} + w_{2i} f_{2t} + w_{3i} f_{3t}$$

Here, F measures the effect of the first three factors on the exchange rate; the vector X includes all the observable variables that we found to have explanatory power; and ε represents an idiosyncratic error. The vector X includes a constant and, in some cases, a time trend. In Table 7. we show the global and domestic variables included in the cointegrating equations, in addition to the global exchange rate factors derived from the PCA.

Table 7: Main fundamental drivers included in cointegration equations

Variable	Rationale	Currencies
FX factors	Positive as it captures fair value as a function of common trends for global FX	BRL, COP, CLP, PEN, RUB, TRY, ZAR, PLN, HUF, ILS, SGD, INR, TWD, MYR, THB, PHP, CNY
Commodities	Commodity prices are positively (negatively) correlated with currencies of exports (importers)	BRL, MXN, COP, CLP, PLN, HUF, KRW, TWD, MYR, THB, IDR
Local equities	Higher stock prices signal higher expected growth which is associated with stronger currencies	BRL, TRY, KRW, MYR, CNY
Credit default swaps	High CDS are associated with high risk premia and lower valuations of the currency	BRL, PLN, KRW, INR, MYR, IDR

Source: BofA Merrill Lynch Global Research,

Step 2: error-correction (predictive) equation

In the second step we seek to model the risk premium embedded in currencies together with the dynamics of conditional expectations of exchange rates in order to come up with a measure of one month-ahead expected returns. We estimate an error-correction predictive equation for the change in the nominal exchange rate as a function of lagged (ie, known in advance) fundamentals. These fundamentals generally include the interest rate differential between the domestic currency and the US dollar (carry factor), the 1m12m slope differential between the domestic currency and the US dollar (slope factor), the VIX Index (risk aversion) and the lagged residuals of the cointegrating equation (error correction term). The second-step equation for currency i is:

$$ds_{it} = constant + \theta_i \varepsilon_{it-1} + Z_{it-1}^{T} \gamma_i + u_{it}$$

Here, the term ε corresponds to the residual from the cointegration equation and the vector Z includes all other observable variables. Since the variables in Z are returns or spreads and thus stationary, we can estimate these equations with ordinary least squares (OLS). In Table 8. we show the variables included in the error-correction equations.

Table 8: Main fundamental drivers included in error-correction equations

Variable		Currencies
Error term	Higher error term is associated with a higher correction given mean reversion of the currency	All
Carry differential	Higher (lower) carry is associated with a currency appreciation (depreciation)	BRL, MXN, COP, CLP, PEN, TRY, PLN, HUF, ILS, SGD, KRW, THB, IDR, PHP, CNY
Slope differential	Higher (lower) slope is associated with home currency appreciation (depreciation) as it signals monetary policy tightening (easing) in the near term	COP, CLP, PEN, RUB, SGD, KRW, CNY

Source: BofA Merrill Lynch Global Research,

Developing trading strategies

The main objective in developing this model is to identify trading opportunities. The model generates trading signals when the 1-month forecasted return deviates by more than 0.5 standard deviations from the 1-month forward price. We back-tested the model in our regional primers.

We publish updates of these signals in our GEMs FI & FX Strategy Weekly and in our GEMs Macro Monthly.

Monetary policy: What's priced in

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In 2014 we introduced What's priced in, our market-implied monetary policy report. We consider the EM countries where the policy rate is a relevant instrument of monetary policy, and present a relatively liquid local currency-denominated yield curve to derive a sensible rate path. The tool covers Korea, Malaysia, Thailand, and Taiwan in Asia; Czech Republic, Hungary, Israel, Poland, South Africa, and Turkey in EEMEA; Argentina, Brazil, Chile, Colombia, and Mexico in LatAm.

Priced-in changes: expectations or risk premium?

The price information in local market yield curves reflects investor expectations about the future evolution of monetary policy. An investor expecting many policy rate hikes for a given period will demand higher rates for a long position in that tenor, so that the expected return is at least equivalent to an investment strategy in a short-term instrument and roll over that position.

Importantly, the priced-in changes also tend to capture a risk premium component because the implied policy path is derived from market prices of risky fixed income instruments. As a result, the difference between the implied policy path and our economists' forecasts may be interpreted as a measure of risk premium.

We do not disentangle expectations from risk premium from our priced-in measure, but readers can incorporate the required risk premium to their policy rate views to compare against the market.

Methodology overview

We construct a list of central bank meeting dates for each country over the next few years using officially announced meeting dates when available, or projected meeting dates otherwise.

To compute the market-implied policy rate path over the next two years for a given country, we look at forward rates defined between consecutive meeting dates and compare those with the cash rate. For example, we calculate the policy changes priced in for the next meeting as the difference between the corresponding forward rate (defined between the first and second meeting) and the cash rate. Then we compute the hike in the second meeting as the change in the corresponding forward rates, defined between the first and second meetings and between the second and third meetings, respectively.[6] This strategy implicitly assumes the spread between the market cash rate and the policy rate remains constant over time.[7]

We use data from local yield curves provided by our proprietary databases of prices, which are typically provided by our trading desks. In Asia, we use interest rate swap curves for all countries. In EEMEA, we use interest rate swap curves, forward rate arrangements and currency forwards for all countries.[8] In Latin America, we use DI futures for Brazil, Camara swaps for Chile, IBR swaps for Colombia and TIIE swaps for Mexico. Argentina has a different way of conducting its monetary policy and we give more details at the end of this section. We compute forward rate paths using our

[6] For Poland, there is one summer meeting interval that takes approximately two months (longer than the usual one-month interval). To keep a relatively homogenous length of the forward tenors in Poland, for this longer meeting interval we use a 30-day forward, instead of the two-month tenor.

[7] The methodology explained in this paragraph applies to all countries except for Hungary and Taiwan (see details below).

[8] In EEMEA, we use cash rates and FRAs in the short end and interest rate swaps in the long end.

proprietary Global Derivative Analytics (GDA) system, which accounts for each country's local yield curve conventions.

For each country, we provide a detailed table with the policy rate path for each meeting over the next two years. The table provides three different measures of the policy rate changes priced in by the market:

- **Market path:** We show the policy changes priced in by the market using the raw forward rates derived from the corresponding local yield curve. However, some countries present illiquid contracts that may be inaccurate or include a substantial liquidity premium. These could distort the policy rate path in some occasions. For this reason, we decided to include an alternative, smoothed version of the implied policy path.

- **Smoothed path:** To construct the smoothed path, we filter the raw market policy path with the Hodrick-Prescott filter. This typically gives a much softer path than the market measure and irons out the effect of illiquid contracts. Since central banks tend to follow a smooth policy path, we believe the smoothed path can be a more realistic depiction of policy expectations, meeting-to-meeting, than the raw market path, and is thus our preferred measure. We provide the smoothed rate level, the cumulative change and the marginal change for each meeting. The regional summary tables and chart use this smoothed path measure.

- **Most likely path:** Central banks tend to change rates in steps, typically with the minimum step being 25bp. As a result, we calculate the most likely policy rate level at each meeting, rounding the smoothed path for each meeting to the rate level corresponding to the closest minimum step for each country. All countries are assumed to have policy changes in 25bp steps, with the exception of Taiwan (12.5bp), Hungary (10bp) and Israel (10bp).

- **Probability of most likely outcome:** We show the probability of the most likely outcome at each meeting, assuming the policy rate was at the most likely path at the previous meeting. At each meeting, the smoothed path rate is always between the two most likely rates associated with the minimum policy change for a given country. Then, we compute the probability of the most likely outcome, assuming a uniform distribution between these two most likely outcomes.

- **BofAML's forecasts:** We include our economist's meeting-by-meeting monetary policy rate call for the next 12 months.

For Hungary and Taiwan, we do not count on reliable short-term rates. For these, we construct the cumulative market path changes by comparing the 3-month rate today against the 3-month rate forward starting at each meeting date. Once we have the market path, the methodology is identical to the one we outline above.

In the case of Argentina, we currently use monthly auctions of LEBAC notes to infer the expected changes in the 7 day repo rate of the central bank, which was issued in January 2017.

In Turkey, we now track the weighted average cost of funding of the Central Bank of Turkey (instead of the 1 week repo rate that was used previously) as the monetary policy can be implemented through multiple channel (the overnight interest rate corridor, the 1 week repo auctions and the late liquidity window).

Asia countries

China

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Objectives

China's monetary policy objective is to maintain currency stability and promote economic growth, according to the laws of the People's Bank of China (PBoC). The PBoC's policy targets are in line with those of the government, which include keeping inflation low, promoting economic growth and employment, and achieving external balance. Among those key targets, economic growth and inflation are most important, with more weight on growth when there is conflict.

The People's Bank of China

Legal framework

The law on the PBoC defines the functions and duties of the central bank. Adopted in March 1995 and amended in December 2003, the law describes the bank's objectives, functions and organizational structure. Under the leadership of the State Council, the law states the PBoC is responsible for formulating and implementing the monetary policy with the objective of maintaining currency stability and promoting economic growth, preventing and mitigating financial risks, and maintaining financial stability. The PBoC uses a governor accountability system in which the governor is the chief officer and deputy governors assist.

Decisions

As the central bank is led by the Chinese government, the State Council is the highest authority for key monetary policy decisions. The PBoC Monetary Policy Committee (PMPC), which was formed in July 1997, meets quarterly to make suggestions about monetary policy formulations. It is a consultative body with no decision-making power. Its external members, who are well known economists outside the government, have no administrative or legislative positions. Still, the PMPC's opinions can have a significant impact on monetary policy. This is especially true with tough issues like currency policy. Quarterly meetings require at least two-thirds of the board members to be present.

The current board

The PMPC consists of 14 members, with the PBoC governor as the chairman of the committee. Ten members come from the PBoC, the State Administration of Foreign Exchange (SAFE), State Council, National Development and Reform Commission (NDRC),

Table 9: Key facts

Name	People's Bank of China (PBoC)
Founded	1983
Governor	Yi Gang
Board members	14
Autonomous	N/A
Government representative on board	State Council deputy secretary general, NDRC vice-chairman, vice-finance minister, NBS director, administrator of SAFE, chairman of CBIRC and CSRC
Terms	Normally 2 years for external members
Inflation target	3.0% in 2017
Latest move	50bp RRR cut for most banks (effective 5 July 2018)

Source: PBoC, BofA Merrill Lynch Global Research

Table 10: Key links*

Main page
Quarterly MPC meetings
Quarterly monetary policy reports
Monthly data
Interest rate changes
RRR changes
Legal framework
English version
State Council
National Bureau of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

Ministry of Finance (MOF), National Bureau of Statistics (NBS), China Banking and Insurance Regulatory Commission (CBIRC) and China Securities Regulatory Commission (CSRC). There is also a representative from the China Banking Association. The three remaining members are reserved for well-known economists outside the government, who usually serve two-year terms. There is no fixed term limit for the other committee members; they can remain on the committee as long as they hold the relevant government positions.

Monetary policy regime and instruments

The State Council sets its monetary and fiscal policy stances for the following year at its Central Economic Work Conference in December. Policy stances may change during the year if macro conditions change significantly. The monetary policy stance could range from *tight*, *appropriately tight*, and *prudent* to *appropriately loose* and *loose* to guide expectations.

To help achieve the government's growth and inflation targets, which are announced at the March National People's Congress (NPC) meeting every year, the PBoC also sets a target for broad money (M2) growth. The target is usually set 2-3ppt higher than the sum of real GDP growth and CPI inflation to factor in "monetization process". In 2018, however, the government didn't announce M2 growth target for the first time in history.

The PBoC uses multiple tools for its monetary policy conduct. It could adjust the policy interest rates (with the benchmark one-year deposit and lending rates currently at 1.50% and 4.35%, respectively). In addition, the PBoC may also adjust required reserve ratios (RRR) at banks to adjust liquidity conditions.

In recent years, the PBoC has placed more importance on managing interbank liquidity, given the bigger role of interbank funding. The PBoC's ability to allow a monetary policy

Table 11: Board members

Name	Date originally appointed	Current term ends	Background	Known policy stance
Yi Gang	Mar 2018	-	PhD in economics, University of Illinois; PBoC governor	Yi pledged to enhance regulation and improve transparency in shadow banking, and vowed to closely monitor bad loans, capital flows and housing market to prevent systemic risks.
Ding Xuedong	Mar 2017	-	PhD in economics, Chinese Academy of Fiscal Sciences; deputy secretary general of the State Council	He recently expressed his confidence in the future of One Belt, One Road strategy.
Lian Weiliang	Jun 2015	-	Postgraduate degree in management; vice-chairman of National Development and Reform Commission	Recently emphasized the need for establishing a credit system and vowed for supply-side reforms and excess capacity reduction.
Liu Wei	Jun 2018	-	Master of engineering, Chongqing University; deputy minister of finance	Liu is in charge of national defense and economic development related sectors. He promoted the implementation of province governors holding accountable for food security.
Chen Yulu	Jun 2018	-	PhD in economics, Renmin University of China; PBoC deputy governor	Chen pledged to develop direct finance in China, to push forward RMB globalization and to extend pilot in green finance.
Pan Gongsheng	Sep 2013	-	PhD in economics, Renmin University of China, PBoC deputy governor; director of SAFE	Pan is in charge of simplifying and improving foreign exchange management and surveillance. He encourages opening up for "orderly and steady" capital inflow and outflows.
Liu Guoqiang	Jun 2018	-	Bachelor in economics, Xiamen University; assistant of PBoC governor	Liu said the direction and operation guide of Fintech should be serving the real economy. He suggested the government to restrain property speculation stringently.
Ning Jizhe	Mar 2016	-	PhD in economics, Renmin University of China ; director, National Bureau of Statistics	Ning recently vowed to build up government balance sheet, improve statistics in property market and financial sectors.
Guo Shuqing	Mar 2017	-	PhD in law, China Academy of Social Sciences; chairman of CBRC	Under Guo, the CBRC has introduced a series of new regulatory rules to rein in off-balance-sheet credit expansion and control systemic risks in the banking system.
Liu Shiyu	Mar 2016	-	PhD in technical economics, Tsinghua University; chairman of CSRC	A key person to watch for IPO and other equity market reforms. He has been prioritizing reforms to improve the quality of listed companies and their information disclosure.
Tian Guoli	Jun 2015	-	PhD in economics, chairman of China Banking Association, chairman of Bank of China	Tian suggested One Belt, One Road strategy can further improve RMB internationalization.
Liu Shijin	Jun 2018	-	PhD in economics, China Academy of Social Sciences; vice-president of China Development Research Foundation	Liu stated China will be able to continue stabilizing its macro leverage, as it is naturally required by the current economic transition from high-speed expansion to high-quality development.
Liu Wei	Jun 2018	-	PhD in economics, Peking University; President of Renmin University of China	Liu Wei recently said that a prudent and neutral monetary policy would not only stabilize China's short-term economic growth but also assist the long-term structural transformation.
Ma Jun	Jun 2018	-	PhD in economics, Georgetown University; dean of the Center for Finance and Development, Tsinghua University	Ma Jun, former PBoC chief economist, is an advocate and leader of green finance. He recently commented that US-Sino trade war has limited impact on Chinese economy in short term.

Source: BofA Merrill Lynch Global Research, the People's Bank of China, local media transmission from market interest rate changes to funding costs has been enhanced in the past two years, as the result of a shift in money creation from a foreign to a domestic engine.

Prior to 2014, the PBoC mainly relied on issuing bills and hiking reserve requirement ratio (RRR) to sterilize FX inflows, and reverse repo and repos were used to smooth liquidity condition. However, since 2014, China started seeing depreciation pressure on FX. Consequently, the PBoC introduced new tools for liquidity injection (such as standing lending facility, medium-term lending facility and pledged supplementary lending, with maturity from1d/7d to 3y) in order to offset the impact of capital outflows.

Exchange rate regime and instruments

The PBoC sets a central parity rate for the onshore trade deliverable CNY/USD at 9:15am daily, and the currency is traded from 9:30am to 11.30pm within the trading band of +/-2.0% around the central parity rate.

The PBoC last reformed its daily USD-CNY fixing mechanism on 11 August 2015, with the aim to enhance the market orientation and benchmark status of the reference rate. On the day, fixing was adjusted 1.9% lower, attempting to close the previous gap between the fixing and spot rates. The PBoC suggests the daily quotes, which market makers submit to form the fixing rate, should refer to FX market demand and supply condition as reflected in the USD-CNY spot market closing price of the previous day, and exchange rate movement of major currencies. There are three currency basket

Table 12: PBoC's monetary toolbox

Name	Full Name	Tenor	Last Observed Rates	Purpose	Counterparty	Collateral
SLO	Short-term Liquidity Operation	1d to 7d	Jan 2016: 3d 2.10%, 6d 2.25%	Manage short-term liquidity	12 medium-large sized banks	CGB, PBoC bills, policy, financial bonds and IG bonds
Repo and Reverse Repo	Repo and Reverse Repo	7d to 28d	Reverse Repo (May 2018): 7d 2.55%, 14d 2.70%, 28d 2.85%. Repo (Nov 2014): 14d 3.2%, 28d 4.0%	Reverse Repo: inject liquidity. Repo: withdraw liquidity	Policy and national commercial banks	CGB and policy bank bonds
SLF	Standing Lending Facility	1d, 7d	Mar 2018: 1d 3.40%, 7d 3.55%	Supply short-term liquidity. Set ceiling for repo rate	Small local banks	CGB, PBoC bills, policy, financial bonds, IG bonds, local government bonds
		1m	Jun 2017: 1m 3.90%	Supply large liquidity demand for 1-3 months	Policy and national commercial banks	CGB, PBoC bills, policy, financial bonds, IG bonds, local government bonds
TLF	Temporary Liquidity Facility	28d	Jan 2018: similar to OMO, unannounced	Manage short term liquidity without need for liquid asset for collateral. Last used for LNY liquidity demand.	5 large banks	None
MLF	Medium-term Lending Facility	3m, 6m, 12m	Apr 2018: 6m 3.05%, 12m 3.30%	Guide medium term rate. Support low cost funding to targeted sectors	Policy and commercial banks	CGB, PBoC bills, policy, financial bonds, IG bonds, local government bonds
Relending	Relending	<3m	Unannounced	Support rural and micro finance	Targeted financial institutions	Loan assets
PSL	Pledged Supplementary Lending	>1y	Nov 2015: 2.75%	Supply base money and guide medium term rate. Target specific sectors (housing, infrastructure project)	Policy banks	CGBs, PBoC bills, policy financial bonds, IG bonds, local government bond
RRR	Required Reserve Ratio	None	RRR (Jul 2018): 15.5%; Rate on reserves (Nov 2008): 1.62%; Rate on excess reserves (Nov 2008) 0.72%	Portion of deposits that banks hold at PBOC. Higher reserve ratio reduces liquidity. Interest on excess reserves serves seen as floor for repo rate	Banks	None
Benchmark Interest Rates	Benchmark Interest Rates	1y	1y Deposit Rate (Oct 2015): 1.50%; 1y Lending Rate (Oct 2015): 4.35%	Guide bank lending and deposit rates	Banks	None

Source: BofA Merrill Lynch Global Research, PBoC

Table 13: Meetings and releases in 2018-19

	Monetary Policy Committee meetings	Monetary Policy Reports
3Q18	End Sep*	Mid Nov*
4Q18	End Dec*	Mid Feb 2019*
1Q19	End Mar*	Mid May 2019*

* Our estimates. Source: BofA Merrill Lynch Global Research

indices that the market makers could refer to, including the CEFTS (China Foreign Exchange Trade System) index, BIS (Bank of International Settlements) index, and IMF SDR (Special Drawing Rights) index.

Since the FX reform on 11 August 2015, there have been a few episodes of volatile FX adjustment and widened capital outflows on concerns about rapid CNY-USD depreciations. In recent months, the PBoC seems to be having a preference for larger two-way fluctuations in USD-CNY fixings while maintaining an asymmetric bias to dampen trade-weighted appreciation pressure. In the meantime, the FX regulators have introduced a number of measures to encourage long-term capital inflows while tightening regulations against cross-border activities, which could potentially enlarge capital outflow risks.

Credit regulation functions

Since 2016, the PBoC has launched Macro Prudential Assessment (MPA) to monitor total credit growth (including bonds and resale assets), instead of guiding bank loan quota and loan-to-deposit ratio. In early 2017, the PBoC and CBRC issued a number of regulatory policies to streamline conduct on Wealth Management Products and curb further financial releveraging. The changes should help rein in off-balance-sheet credit lending and control systemic risks in the financial system, in our view.

Current policy stance

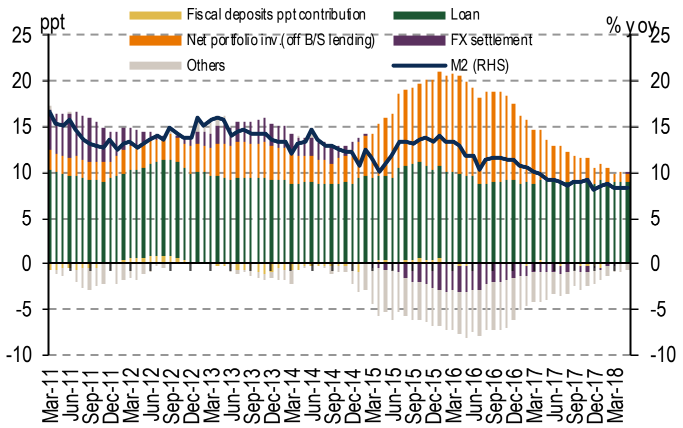
In 1H 2018, China started to shift its aggressive tightening stance towards gradual easing amid escalated US-Sino trade tension. However, given the PBoC has reversed about 70% of its 2Q15-3Q16 easing during the past six quarters, financial conditions remain still tight at the current level and the key threshold for comprehensive policy easing hasn't been reached. As such, we think the PBoC will adopt measures to ease up the credit constraint, after seeing more signs of slowing growth and further deterioration of trade war risks.

Meetings, data and information dissemination

Quarterly PMPC meetings typically take place in the last five days of each quarter, but can be postponed to the beginning of a quarter. Bank credit, total social financing (TSF) and money supply data are usually released between the 10th and 15th of each month.

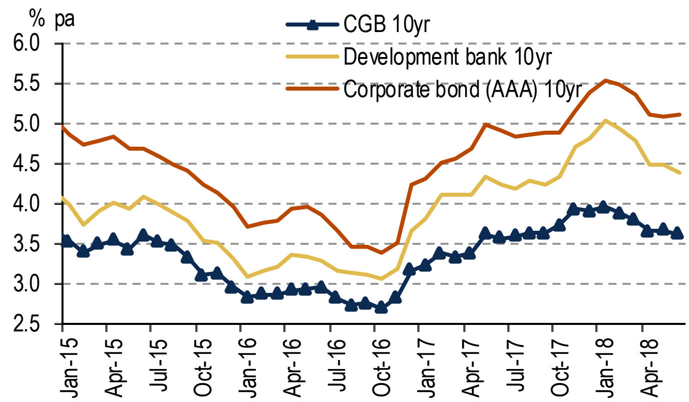
The major set of monetary data in China could be M2, bank loans and TSF. The 7d repo rates are the most widely referenced interbank rate, which serves as the benchmark for other rates and financial products, such as swaps. Interbank liquidity is important in that it directly affects funding costs. Loan growth is still important because bank loans are one of the main channels for creating money. TSF growth measures growth of system-wide credit, which has a direct impact on the real economy.

Chart 11: Diminishing capital outflow allows room for domestic deleveraging



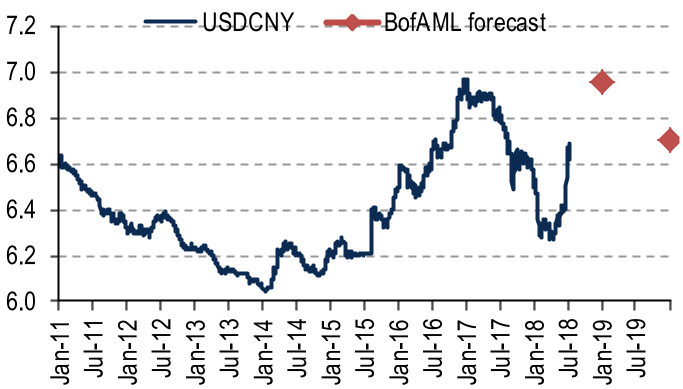
Source: BofA Merrill Lynch Global Research, CEIC, Haver, NBS

Chart 12: PBoC's tightening bias pushed up funding cost since late 2016



Source: BofA Merrill Lynch Global Research, CEIC

Chart 13: A relatively more stable outlook for CNY



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 14 CNY also depreciated against the CFET basket

Source: BofA Merrill Lynch Global Research, Bloomberg

Rates market

Monetary policy

Open market operations

Given the State Council's influence in policy making, open market operations are an important discretionary tool for the PBoC to manage liquidity and monetary targets. It schedules auctions every day at 9:15am. Typical instruments include repos and reverse repos of 7-day, 14-day, 21-day, 28-day. Primary dealers must indicate their bidding interest (level and size) a day in advance, with the PBoC announcing the auction size at 9:15am every day.

The PBoC has stopped issuing bills in OMO, mainly resorting to repo and reverse repo operations, with the latter used more frequently since 2012. More active use of reverse repo suggests the PBoC is moving toward its western peers and starting to manage the short-term money market rate. In December 2017 and March 2018, the PBoC hiked 7-day reverse repo rate by 5bp each, following the Fed, and has been staying on hold since the March hike.

Lending facilities

The PBoC has emphasized managing interbank liquidity and guiding money-market rates, and has introduced some new tools since 2013, such as the short-term liquidity operation (SLO), short-term lending facility (SLF) and medium-term lending facility (MLF) as supplements. In addition, it introduced pledged supplementary lending (PSL) as a new form of PBoC relending to provide base money for some government-sponsored borrowers and to guide medium-term policy interest rates.

Reserve requirements

The reserve requirement ratio (RRR) is an important discretionary policy tool. Unlike several countries that use bills to sterilize the FX inflow explicitly, in the past, the PBoC has relied on hiking RRR. By doing this, the PBoC transfers the sterilization costs to the banking sector. However, the PBoC had to reduce RRR to release liquidity, as FX inflow can no longer be a major source of base money and capital outflow occurs on rising RMB depreciation expectation. From January 2015 to July 2018, the PBoC cut RRR by 450bp universally, as well as additional RRR cut for selected banks. Currently, the RRR is 15.5% for big banks and 13.5% for small and medium sized banks. The PBoC pays 1.62% on required reserves and 0.72% on any excess reserves deposited at the PBoC.

Monetary policy framework transition

We believe China is in a transition to a new monetary policy framework featuring more price tools (eg, interest rates), as opposed to old-fashioned quantitative tools. As China almost completed its interest rate liberalization, the PBoC needs to rely more on price tools to deliver its policy intention and let the markets determine the allocation of resources. The rapid deepening of the financial markets has also made quantitative tools increasingly ineffective. Given this broad context, the RRR as a major monetary policy tool influencing the quantity of money and M2 growth as an intermediate target could be phased out in the coming years.

Fiscal policy

Key multi-year macro policy and leadership changes are decided by the party first, with measures then sanctioned by the National People's Congress. The fiscal policy stance and budget would be set at the NPC meeting in March every year. China amended its Budget Law on 31 August 2014, which allows local governments to issue bonds under strict restrictions and adopts a more comprehensive budget system. It also started a debt swap program to use municipal bonds to replace existing local government debt. On the fiscal policy front, the government lowered targeted fiscal deficit to 2.6% of GDP in 2018 from 3.0% in 2017, as part of the broad de-leverage effort. In the meantime, financial regulators also rolled out various measures to tighten fundings available (mostly through the shadow banking system) to local governments and local-government related entities to contain the leverage ratio of public sector.

Money market rates

The money market is largely made up of two curves: repo and Shibor. The overnight and 7-day repo rates are the established benchmarks and account for more than 70% of market volume. This is a collateralized lending rate and its fixing is published every day at 11:30am local time based on the median of all transacted prices at 9-11:30am on the China Foreign Exchange Trading System (CFETS). Daily average turnover is CNY2.5tn for all repos in 2017.

The Shibor curve is an uncollateralized interbank borrowing offer rate set by 18 onshore banks with tenors from overnight to one year. The repo fixes at 11:30am local time while the Shibor fixes at 11:00am. Seven-day Shibor follows 7d repo very closely, while there are much wider differences between 3m repo and Shibor fixing. Beyond credit premium, the Shibor rate can be biased higher, as banks are incentivized to set higher fixings to improve the margins on loans that are linked to the Shibor rates.

Bond market

Overview

China's onshore bond market represents the largest in Asia ex-Japan and the third largest bond market in the world, with US$10.6tn (US$1 = CNY6.70) in outstanding bonds by June 2018. However, relative to its own GDP, it is a more modest 87%, but still a meaningful increase from 32% in 2004. There are eight broad categories of bonds: government bonds, policy bank financial bonds, PBoC bills, Negotiable Certificate of Deposits (NCDs), corporate bonds, enterprise bonds, commercial papers and medium-term notes. Bond trading occurs through two key platforms: the more liquid interbank over the counter market and the Shanghai and Shenzhen exchanges.

Treasury bonds

Also known as Central Government Bonds (CGB), treasury bonds are issued by the Ministry of Finance to fund the government's budget deficit. Total outstanding book-entry CGB is CNY12.6tn as of June 2018, or 18% of total outstanding bonds. Maturities range from bills (3, 6, and 9 months) to bonds (1, 3, 5, 7, 10, 15, 20, 30 and 50 years). Coupons are paid semi-annually above 10-year tenors, annually for 1- 7 year tenors and at the maturity for below 1y tenors.

Local government bonds

Local government bonds are issued by provincial governments and some city-level governments after approval. As of June 2018, outstanding local government bonds totaled CNY16.0tn, compared with CNY1.2tn in January 2015, owing to the local government debt swap program as well as the revision to budget law. The local government debt swap program is expected to swap about CNY15tn debt to longer-tenor lower rate local government bonds within four years.

Policy bank bonds

These bonds are issued by the three policy banks (CDB, ADBC and China EXIM Bank) for infrastructural development. Strictly speaking, CDB is no longer a policy bank, but a commercial bank. However, its bonds still enjoy the zero-risk weights on bank assets and dominate policy bank bonds with CNY7.7tn outstanding as of June 2018. Outstanding policy bank bonds totaled CNY14.0tn by June 2018, or 20% of onshore bonds. Since 2015, majority of CDB issuance (over 95%) is fixed rate bonds.

NCDs

The outstanding NCDs have enjoyed about 20-fold growth since late-2014 to CNY8.9tn by June 2018 for good reasons. They have been used as an important source for joint-stock and regional banks to proactively increase liabilities given their limited branches and deposits. Issuance of NCDs is also very effective and normally does not require the underwriting process. Currently, NCDs still enjoys zero RRR, which means higher money multiplier than deposits. Compared with CPs, NCDs usually have better liquidity, better credit and lower risk weighting.

PBoC bills

PBoC bill tenors range from 3, 6 and 12 months up to 3 years. The primary objective is sterilization and liquidity management. They are auctioned via the China Central Depository & Clearing Company (CCDC).

Corporate debt

A collection of bonds predominantly issued by state-owned enterprises, foreign joint venture companies, as well as private-sector corporations, without the need for bank guarantees. The main bond category includes commercial bank bonds, enterprise bonds, short-term financing papers (ST financing) and medium-term notes (MTN). The ST financing and MTN are the most actively traded in the interbank market. Outstanding MTN, enterprise bonds and ST financing papers (and super ST) are at CNY5.1tn, CNY3.3tn, and CNY1.7tn as of June 2018.

Table 14: Ownership breakdown of China's government bond market (as of June 2018)

	Holdings (CNYbn)	% of total
Total government bond outstanding	12,576	100.0%
PBoC, MoF, Policy banks	1,695	13.5%
Commercial Banks	8,149	64.8%
- National Commercial Bank	6,119	48.7%
- Foreign Bank	199	1.6%
- City Commercial Bank	1,239	9.9%
- Rural Commercial Bank	582	4.6%
- Rural Cooperative Bank	2	0.0%
- Village and Town Banks	2	0.0%
- Other Banks	4	0.0%
Credit cooperative banks	72	0.6%
Non Bank Fin Inst	28	0.2%
Securities Companies	115	0.9%
Insurance Companies	285	2.3%
Fund Houses	750	6.0%
Non Financial Inst	2	0.0%
Individual Investors	0	0.0%
Exchanges	565	4.5%
Non-Residents	915	7.3%

Source: BofA Merrill Lynch Global Research, Chinabond

Auction and placement mechanism

Book-entry CGBs are issued by the Ministry of Finance under hybrid auctions for tenors below (and equal to) 10y, and Dutch auctions for tenors above 10y up to 50y. The Ministry of Finance typically publishes its issuance plan of key maturities (1, 3, 5, 7, 10y) at the end of the year and its complete issuance plan on a quarterly basis. However, the issuance amounts are not disclosed. The local government bonds use Dutch auctions.

The three policy banks also issue bonds by auction, but usually in the Dutch style. There is no complete calendar of regular auction, though daily updates can be found on Chinabond.com.

Economic drivers

The key market drivers are monthly CPI, industrial production, money supply, aggregate social financing, fixed asset investment and PMI. The National Bureau of Statistics has not officially disclosed the CPI component weightings.

The short end of the bond curve moves with the monetary policy, which in turn is driven by a combination of growth and inflation. The longer end has strong correlation with the stock market.

Investor base

Major local investors include state-owned banks, joint-stock commercial banks, security firms, credit cooperatives, insurance companies and investment funds. Over the past year, offshore investors have been playing an increasingly important role in onshore bond market due to better access.

The QFII scheme was launched jointly by the China Securities Regulatory Commission (CSRC) and PBoC in November 2002 and came into force on 1 December 2002. Bonds wise, a QFII was initially only allowed to invest in bonds traded on exchanges, which barely accounts for 2% of total bonds outstanding at that time. However, on 27 July 2012, the CSRC officially revised the QFII rules to allow QFIIs to invest in the dominant interbank bond market. The entry requirements of QFII were also lowered significantly.

RQFII refers to offshore institutional investors with RMB raised offshore. The program was launched in December 2011 and allowed investment in the interbank bond market. The pilot program has also been expanded from Hong Kong subsidiaries of the onshore fund and securities firms to offshore firms from Hong Kong to Singapore to London.

In August 2010, the PBoC launched a scheme to allow three types of institutional investors to invest in the onshore interbank bond market. The eligible investors are:

- Foreign central banks that facilitate cross-border trade/investment with/in China, and are involved in currency cooperation
- CNY clearing banks in Hong Kong and Macau
- Offshore RMB participating banks

On 24 February 2016, the PBoC issued No.3 (2016) Communique, allowing overseas financial institutions (eg, foreign commercial banks, insurers, securities firms, fund management firms and other asset management firms), their investment products, and other medium- to long-term institutional investors (eg, pension funds, endowment funds, charity funds, etc) to invest in the interbank bond market.

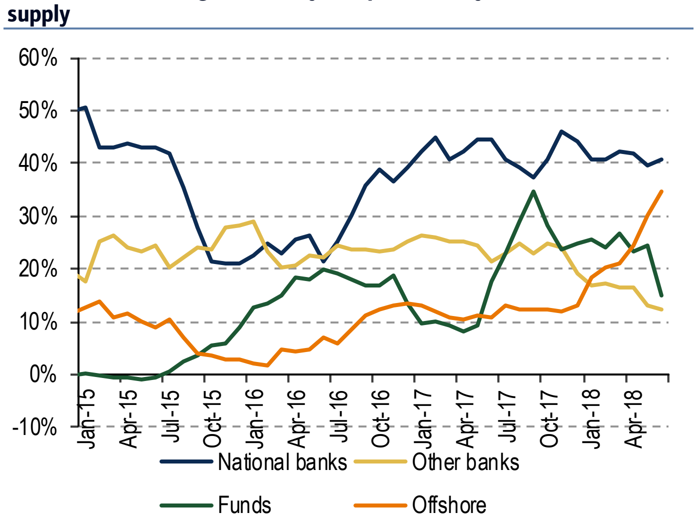
On 3 July 2017, the northbound of Bond Connect, a program that facilitates foreign investors to invest in onshore bond market, was officially launched. In 1Q18, the average daily trading volume under Bond Connect was CNY2.7bn, or 40% of total trading volume by overseas investors. However, compared with daily average trading volume of CNY800bn by all investors, there is still a long way to go.

These are meaningful extensions of previous access that was limited to QFII, RQFII and specially approved central banks, sovereign wealth funds and RMB clearing and participating banks.

In March 2018, Bloomberg-Barclays announced its decision to include China in its Global Aggregate Index, with the planned inclusion to be phased in over a 20-month period starting in April 2019. This means a scaling factor of 5% increasing in 5% increments each month. Some media reported the AUM of funds tracking this index could be as high as US$2tn (other versions differ), which implies about US$110bn inflows assuming 5.49% share. Meanwhile, inclusion into JPM GBI-EM could bring in US$20bn inflows and to Citi WGBI about US$90bn inflows over time. Timing wise, we think JPM EM-GBI could announce its decision to include China this year, but hurdles remain high for Citi WGBI.

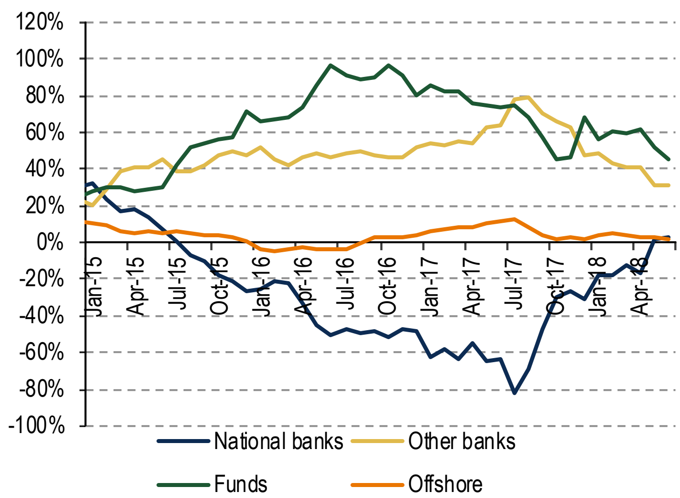
China bond holdings by offshore investors have gone from nil several years ago to over CNY1.5tn by June 2018. That said, foreign ownership remains small in the market, representing 2.2% of total share. Inclusion into bond indices and global reserve

Chart 15: 12m rolling book-entry CGB purchase (by investor) % net supply



Source: BofA Merrill Lynch Global Research, Chinabond

Chart 16: 12m rolling PBB purchase (by investor) % net supply



Source: BofA Merrill Lynch Global Researc, Chinabond diversification could see foreign ownership go above 10% over the long run, especially for CGBs (see China bond primer: China bonds: too big to ignore, 20 May 2015).

Taxation

The China State Administration on Taxation (SAT) collects a 10% tax on equity gains, dividends, and interest income from foreign investors.

Clearing and settlement

There are three clearing and settlement platforms. The China Central Depository & Clearing Company (CCDC) clears transactions in the interbank market in real time. The China Securities Depository and Clearing Company (CSDC) is the sole depository, clearing and registration company for securities traded on the Shanghai and Shenzhen exchanges. The CSDC provides settlement T+1. The Shanghai Clearing House (SHCH) provides centralized and standardized clearing services for spot and derivatives transactions in CNY and foreign currencies as well as CNY cross-border transactions approved by the PBoC. In addition, SHCH is the depository and clearing house for all short-term financing and private placement notes, as well as NCDs. The CCDC is under the regulatory supervision of the MoF, PBoC, CBRC and CSRC, while the CSDC is under the supervision of the CSRC.

Derivatives market

Interest rate swaps

The swap market continues to grow rapidly and robustly. Essentially, there are four major IRS curves, based on the 7-day repo (compounded quarterly), the overnight Shibor, the 3-month Shibor, the 1-year benchmark deposit rate, respectively.

The 7-day repo swap has gained more market share at the expense of deposit repos, as well as the 3-month Shibor repo. This is largely due to interest rate liberalization, and the fact fixing for the floating reference leg of the repo swap has been less volatile since 2015, thanks to better liquidity management from the PBoC and signaling effect from the OMO. As the benchmark deposit and lending rates gradually lose meaning, the PBoC may one day stop guiding these two rates. At that point, these two swaps will be in limbo since it is not clear what fixing will be for the floating leg.

Government bond futures

The 5y and 10y government bond futures have been listed on the China Financial Futures Exchange. So far, commercial banks, the largest holder of government bonds, cannot participate in the bond futures market.

The futures trade on a hypothetic 3% coupon bond. The contract cycles are the nearest

Table 15: Summary statistics of China derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-Ask spread
Interest rate swaps (7d repo)			
1-year	CNY21bn	CNY120mn	2bp
5-year	CNY12bn	CNY30mn	2bp
ND Interest rate swaps (7d repo)			
1-year	$900mn-1.2bn	$100mn	2-3bp
5-year	$180mn-240mn	$20mn	2-3bp
Interest rate swaps (3m Shibor)			
1-year	CNY9bn	CNY150mn	5-10bp
5-year	CNY2bn	CNY40mn	5-10bp
ND Interest rate swaps (3m Shibor)			
	$20mn	$15mn	6-8bp
CNH Cross-currency swaps			
1-2year	$400-800mn	$10-20mn	4-8bp
3-5year	$200-400mn	$10mn	4-8bp
ND Cross Currency Swaps			
	$50mn	$5-10mn	10-15bp

Source: BofA Merrill Lynch Global Research Estimate, Bloomberg, Reuters three quarter-end months among March, June, September and December. Physical settlement for 5y future is book-entry CGB with tenor not above 7y at the time of issuance and maturity between 4y-5.25y, and for 10y bond futures is book-entry CGB with tenor not above 10y at the time of issuance and maturity not below 6.5y. The contract expires on the second Friday of the contract month. The minimum margin and daily price limit is 1% and 1.2% for 5y futures, respectively, and 2% and 2% for 10y futures.

FX market

The CNY operates a de jure managed floating exchange rate according to the IMF. On 17 March 2014, the PBoC widened the USD/CNY trading band from ±1% to ±2% of central parity rate. The central parity rates for 16 currencies that may be traded against the RMB in the interbank FX market are announced at 09:15 each day.

On 11 December 2015, the China Foreign Exchange Trading Systems (CFETS) launched a CNY CFETS basket. The basket originally contained 13 currencies, but was extended to 24 currencies from 1 January 2017. The weights are based on trade with China, adjusted for re-exports.

Table 16: Currencies that may be directly traded against RMB in the interbank FX market

	Weight in CFETS basket	Daily trading band from central parity rate, ±%
USD	22.4	2
EUR	16.3	3
JPY	11.5	3
HKD	4.3	3
GBP	3.2	3
AUD	4.4	3
NZD	0.4	3
SGD	3.2	3
CHF	1.7	3
CAD	2.1	3
MYR	3.7	5
RUB	2.6	5
THB	3.3	10
KRW	10.7	5
ZAR	1.8	10

Source: CFETS

Table 17: Vital statistics and characteristics of China's FX markets

Products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters reference	Key facts
CNY onshore						
Spot	Spot	USD 20-30bn	USD 10-50m	5-20pips	CNY=CFXS	Proper documentation required. Trading hours: 9:30-23.30 Beijing
Forwards	Forwards	USD 45-60bn	USD 20-40m	5-20pips	CNYF=	Tenors up to 3 years are available. Liquid tenors are below 1 year.
CNY offshore						
Forwards	NDF	USD 1-2bn	USD 20m	30pips	PNDF	Offshore entities can access non-deliverable CNY through NDF. USD settled NDF on CNY are available up to ten years and are liquid for tenors less than two years.
CNH offshore						
Spot	Spot	USD 15-25bn	USD 20m	5-10pips	CNH=D2	CNH is CNY traded and deliverable offshore, primarily in Hong Kong. There is no fixing rate set by the authorities.
Forwards	Forwards	USD 17.5bn	USD 50m	Up to 3m: 5-15pips, 6m to 1y: 10-20pips	BGCHKCNY	CNH forward curve is liquid up to 1 year.
Options	FX option	USD 2.5bn	USD 50-100m	0.3 vol	TTDE	Options are available for tenors up to three years and are liquid for tenors up to one year.

Source: Reuters

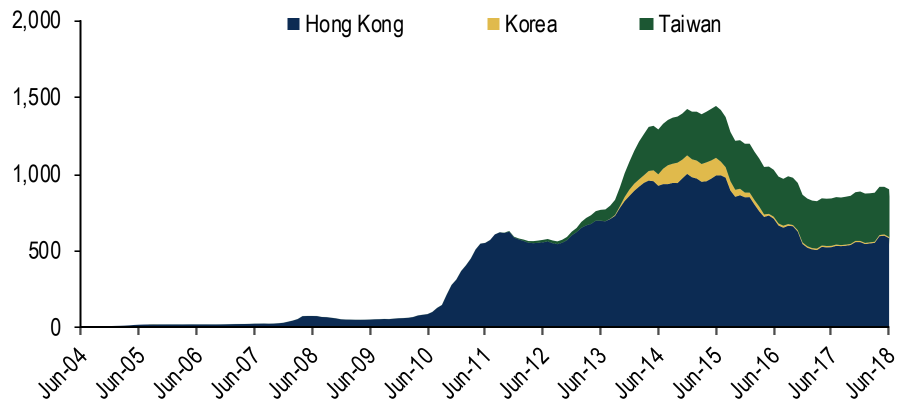
The daily central parity rates are the weighted average of rates submitted by market makers and published on Reuters page SAEC. The central parity rates submitted are expected to (1) maintain stability in the RMB against a basket of currencies using weights from the CFETS index, the IMF's Special Drawing Rights (SDR) basket and the Bank of International Settlement's basket, and (2) account for the 16:30 closing rate in Beijing.

CNH market

The CNH refers to the offshore deliverable RMB market. The CNH is traded freely and there are no official restrictions on who uses the CNH and how the CNH is used outside China. The CNH was created by China in Hong Kong to internationalize the CNY. CNY internationalization means to assist non-residents to use the CNY as a medium of exchange and a store of value for on-balance sheet and off-balance sheet activities. China increased the number of offshore CNY centers and strengthened existing ones in 2015. The first CNY clearing bank in Latin America was established in Chile and by the end of the year, 20 economies have established or are scheduled to appoint a CNY clearing bank (see CNH Primer: Growing pains for details).

The origin of the CNH market was on 18 November 2003, when Hong Kong announced that banks could conduct personal renminbi business on a trial basis, following approval by the PBoC and China's State Council. The next key milestone occurred in July 2007 when the China Development Bank (CDB) completed its first renminbi bond issuance in Hong Kong. This marked the start of the dim sum bond market and the establishment of financial intermediation between Hong Kong and the mainland.

Chart 17: Offshore RMB deposits (RMBbn)



Source: BofA Merrill Lynch Global Research, CEIC

CNH spot. Established in August 2010, the CNH spot market is open to all corporates and institutions as long as they comply with the banking regulations of Hong Kong. Market liquidity has improved as corporate trade settlements have supplied CNY liquidity to the markets. The liquidity improvement was also helped by the rule changes by the Hong Kong Monetary Authority (HKMA), dropping limits to the net open position and conducting 7-day repo to provide liquidity if requested by banks.

CNH forwards. Since its inception, the CNH DF market has been speculated to displace the CNY NDF market. The development of CNH options and a wider CNY trading band (which raises basis risks from the CNY NDF because it is set against the USD/CNY fix) meant corporates can hedge efficiently with the CNH DF market.

The CNH forward curve is based on the USD and CNY deposit differentials in the offshore market. The CNH forward curve trades typically above the onshore CNY curve at the front end, as the CNY interest rate is higher than the USD. The higher offshore renminbi deposit rates are typically a function of the thinner liquidity and CNH demand imbalance than the onshore market. The estimated average daily turnover in this market has seen high growth and is now USD5-10bn.

Liquidity in the CNH DF market has improved while that of the CNY NDF deteriorated. The daily turnover in the CNH DF market is USD17.5bn and the average trade size is USD25mn. Tenors are liquid up to one year.

CNH CCS. The CNH CCS market opened in September 2010. It developed after the HKMA started to relax rules on CNY net open positions in July 2011. Consequently, the CCS curve reflected market interest rates more efficiently than before. The CNH CCS is fixed against USD 3M London Interbank Offered Rate (Libor).

The initial participants of the CNH CCS market were corporates, who used the market to hedge their CNH liabilities. The range of main participants has broadened and now includes banks, asset managers, hedge funds, and high net worth individuals. The CNH CCS market is now also used for trading purposes. The increase in participants and use of the CHS CCS market has narrowed bid-offer spreads, reduced transaction costs, and increased liquidity.

Daily turnover in the CNH CCS market rose to USD1.0bn with an average trade size of USD20mn. Liquidity has improved since inception and is strong between the one and five year tenors.

CNH IRS. The CNH IRS market was introduced in July 2010. The benchmark fixing rate is the 3M CNH HIBOR and it was introduced on 24 June 2013. Prior to that, the fixing benchmark rate for the CNH IRS was the onshore 3M SHIBOR. But the segmentation between the onshore and the offshore market meant the 3M SHIBOR did not effectively reflect the money market conditions in the offshore market.

Tenors up to 10 years are quoted for the CNH IRS market. Liquidity is low and demand for the product is limited because (1) USD and HKD is usually a cheaper source of funding and hedging for offshore corporates, and (2) hedging needs are usually handled by the CNY NDIRS market. Opportunities in the CNH IRS market will depend on the development of the offshore CNY bond market in Hong Kong and the liberalization of offshore bank access to the onshore bond market. The ultimate purpose of the CNH IRS market is for bond issuers and investors to hedge their interest rate risks.

Dim sum bonds. Dim sum means dumplings in Cantonese and translates as “the heart’s little treasures”. Dim sum bonds are CNH-denominated bonds issued offshore market and settled in CNH.

Global dim-sum bond issuance fell from CNY581bn to CNY424bn in 2015 as the decline in offshore CNY deposits made it difficult for corporates to raise capital. Dim sum bond issuance had also been limited by development of the Panda bond market. Panda bonds are CNY-denominated bonds issued by a non-Chinese issuer and sold in mainland China. Non-Chinese corporates that need CNY for their business operations may prefer to issue Panda bonds over dim-sum bonds to avoid approvals required for remitting offshore CNY. But there are still many hurdles to access onshore funding, and so, the dim-sum bond market may not be rapidly replaced by the Panda bond market.

China’s Ministry of Finance (MoF) issued its first CNH CGBs in Hong Kong on 28 September 2009. A CNH sovereign bond curve started following the CNY5bn issuance of 3, 5 and 10-year Chinese government bonds by the mainland’s MoF on 1 December 2010. The MoF extended the curve to 15 years in 2012 and started a target issuance to central banks and sovereign wealth funds. Since 2013, the MoF has conducted two CNH CGB bond auctions in Hong Kong each year.

In the primary market, most of the CNH CGBs issued so far have a three-year tenor. The share of long-tenor bonds has gradually increased as the MoF sought to extend the yield curve by issuing long-dated bonds. The daily turnover is CNH20-300mn and average trade size is CNH5-50mn.

Table 18: ICE BofA Merrill Lynch Dim Sum Bond Index reference list

Ticker	All maturities:
CNHJ	Dim Sum Index
CJHG	Dim Sum Government Index
CJHC	Dim Sum Corporate Index
CJHQ	Dim Sum Agency Index
CJHP	Dim Sum Policy Bank Index
CNIJ	Dim Sum Investment Grade Index
One year and longer indices:	
CNOH	1+ Year Dim Sum Index
CNHG	1+ Year Dim Sum Government Index
CNHC	1+ Year Dim Sum Corporate Index
CNHQ	1+ Year Dim Sum Agency Index
CNHP	1+ Year Dim Sum Policy Bank Index
CNIH	1+ Year Dim Sum Investment Grade Index

Source: ICE BofAML Indices accessible by IND page on Bloomberg.

Local/external debt ratings

	Local	External
2018	A1/A+/A+	A1/A+/A+
2017	A1/A+/A+	A1/A+/A+
2016	Aa3/AA-/A+	Aa3/AA-/A+
2015	Aa3/AA-/A+	Aa3/AA-/A+
2014	Aa3/AA-/A+	Aa3/AA-/A+
2013	Aa3/AA-/A+	Aa3/AA-/A+
2012	Aa3/AA-/AA-	Aa3/AA-/A+
2011	Aa3/AA-/AA-	Aa3/AA-/A+
2010	Aa3/AA-/AA-	Aa3/AA-/A+
2009	A1/A+/AA-	A2/A+/A+
2008	A1/A+/AA-	A2/A+/A+
2007	A1/A/AA-	A2/A/A+
2006	-/A/A+	A2/A/A
2005	-/A-/A+	A2/A-/A-
2004	-/BBB+/A	A2/BBB+/A-
2003	-/BBB/A	A2/BBB/A-
2002	-/BBB/A	A3/BBB/A-
2001	-/BBB/A	A3/BBB/A-
2000	-/BBB/-	A3/BBB/A-

Source: , Bloomberg , Moody's, S&P, Fitch

Conventions
Bonds

Quote: Yield to maturity

Settlement: T+0/1

Basis: Act/365

Coupon frequency: Semi-annual above 10-year, annual below 7-year (and above 1y); one payment at maturity below 1-year

IRS
Fixing: Various products: 7d repo fix, 3M Shibor, 1y benchmark deposit, 1y benchmark lending

Coupon frequency: quarterly, floating/fixed Act/365

CNH CCS
Fixing: 3m USD LIBOR

Coupon frequency: quarterly

USD day count Act/360, local Act/360

Bloomberg pages
FX rates

CNY Curncy ALLQ<GO>

Cross section of China markets

OTC CNY <GO>

Reuters pages
PBoC pages, Reserve Requirements

<PBOC>

PBoC SAFE fixings

<SAEC>

7-day repo fixing

<CNREPOFIX=CFXS>

Useful official websites

The People's Bank of China (PBOC)

www.pbc.gov.cn

State Administration of Foreign Exchange (SAFE)
www.safe.gov.cn

National Development and Reform Commission
www.ndrc.gov.cn

China Banking Regulatory Commission
www.cbrc.gov.cn

China Securities Regulatory Commission
www.csrc.gov.cn

Ministry of Commerce
www.mofcom.gov.cn

Useful market websites
China Central Depository & Clearing Company
www.chinabond.com.cn

China FX Trade System
www.chinamoney.com.cn

China Securities Depository and Clearing Company
http://www.chinaclear.cn

Shanghai Interbank Offered Rate
http://www.shibor.org

*Links are to third-party websites, and do not contain BofAML Global Research.

Hong Kong

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Overview

Hong Kong is one of three Currency Board regimes in Asia, along with Macau and Brunei. It is viewed as having one of the deepest and most liquid capital markets, free from any capital restrictions. As such, the HKD Currency Board remains a credible and robust regime.

Hong Kong Monetary Authority

Monetary policy

Objectives

The Hong Kong Monetary Authority (HKMA) was established on 1 April 1993 through the merger of the Office of the Exchange Fund with the Office of the Commissioner of Banking. The HKMA's functions and objectives are (1) to maintain currency stability within the framework of the linked exchange rate system; (2) to promote the stability and integrity of the financial system, including the banking system; (3) to help maintain Hong Kong's status as an international financial center, including the maintenance and development of Hong Kong's financial infrastructure; and (4) to manage the Exchange Fund.

These functions and objectives are generally common to central banks around the world. However, unlike many central banks, the HKMA does not issue banknotes; currently, three commercial banks (the Hong Kong and Shanghai Banking Corporation, the Standard Chartered Bank and the Bank of China) are responsible for banknotes. Also, the HKMA does not act as banker to the government, even though most fiscal reserves are held by the Exchange Fund, which the HKMA manages. Historically, commercial banks serve that role.

Legal framework

The Hong Kong Monetary Authority was established after the Legislative Council passed amendments to the Exchange Fund Ordinance in 1992, empowering the financial secretary to appoint a monetary authority.

The powers, functions and responsibilities of the monetary authority are set out in the Exchange Fund Ordinance, the Banking Ordinance, the Deposit Protection Scheme Ordinance, the Clearing and Settlement Systems Ordinance, and other relevant

Table 19: Key facts

Name	Hong Kong Monetary Authority
Founded	1 April 1993
Governor	Norman Chan
Board members	N/A
Autonomous	High degree of autonomy within the relevant statutory powers conferred upon, or delegated to, the Hong Kong Monetary Authority
Government representative on board	Financial secretary
Terms	N/A
Inflation target	No; currency board target range centered on HKD7.8 = USD1
Latest move	25bp hike

Source: Hong Kong Monetary Authority

Table 20: Key links*

[Main page]
[The Chief Executive's Committee]
[Statistics]
[Reports]
[Presentations and speeches]
[Legal framework]
[Financial Services and Treasury Bureau]
[Census and Statistics Department]

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

ordinances. The division of functions and responsibilities in monetary and financial affairs between the financial secretary and the monetary authority is set out in an Exchange of Letters between them dated 25 June 2003. This also discloses the delegations made by the financial secretary to the monetary authority under these ordinances.

The Exchange Fund Ordinance establishes the Exchange Fund under the control of the financial secretary. According to the Exchange Fund Ordinance, the fund shall be used primarily to affect the exchange value of the Hong Kong dollar. It may also be used to maintain the stability and integrity of Hong Kong's monetary and financial systems, with a view to maintaining Hong Kong as an international financial center.

The monetary authority is appointed under the Exchange Fund Ordinance to assist the financial secretary in performing his/her functions under the Exchange Fund Ordinance and to perform other functions as assigned by other ordinances or by the financial secretary.

Decisions

Article 110 of the Basic Law—often referred to as Hong Kong's constitution—includes the statement that "the Government of Hong Kong shall, on its own, formulate monetary and fiscal policies". In essence, it is the Hong Kong government that determines monetary policy.

More specifically, the authority rests first with the financial secretary, since the Exchange Fund Ordinance puts the financial secretary in control of the Exchange Fund, which, in effect, provides the resources to conduct monetary policy. It is the monetary authority that carries out monetary policy on a day-to-day basis, and in accordance with any delegations. However, this does not mean the monetary authority is divorced from formulating policy; rather the opposite, since the monetary authority has a major influence in determining policy through close liaison with the financial secretary and membership of the Advisory Committee.

The Hong Kong arrangement, and the monetary authority's status in particular, is unusual internationally and may be unique compared with the more typical setup of a central bank established as a distinct corporate entity. But the decision-making process may not be that different from other jurisdictions, with the broad framework set by the government and the central bank executing the policy in a transparent and accountable fashion. Hong Kong does not have such a precisely defined framework of autonomy for the central bank, unlike some other jurisdictions, which is sometimes regarded as a necessary formal safeguard to monetary stability. However, this distinction is less significant under the firmly rule-based currency board system that Hong Kong operates, in our view.

Table 21: The chief executive and deputy chief executive of the HKMA

Name	Date originally appointed	Background	Known policy stance
Norman T.L. Chan	Oct 2009	BA in sociology, Chinese University of Hong Kong; ex-vice-chairman, Standard Chartered Bank Asia; current chief executive of the HKMA	Adopts proactive and appropriate measures through the provision of countercyclical fiscal actions to support the economy.
Eddie Yue	Sep 2007	Appointed executive director in 2001; current deputy chief executive of the HKMA	Prefers to use macro-prudential measures to manage bouts of peg pressure.
Arthur Yuen	Jan 2010	Hong Kong University of Science and Technology - School of Business and Management; current deputy chief executive of the HKMA	Prefers to use macro-prudential measures to manage bouts of peg pressure.
Howard Lee	Jan 2018	Appointed senior executive director in 2016; current deputy chief executive of the HKMA	No clear known policy stance.

Source: Hong Kong Monetary Authority

The current board

Norman Chan was appointed chief executive of the HKMA on 1 October 2009. Previously, he served as the executive director and deputy chief executive of the HKMA (1993-2005). During his 13 years with the HKMA, Chan steered a number of major financial policies and initiatives, including the development of Hong Kong's financial infrastructure, the introduction of RMB banking services in Hong Kong and financial cooperation among central banks in Asia. He played a key role in the government's market operations in 1998 that helped keep Hong Kong's financial system stable.

Monetary/exchange policy regime and instruments

The overriding objective of Hong Kong's monetary policy is currency stability. That is defined as a stable external exchange value of the currency, in terms of its exchange rate in the foreign exchange market against the US dollar, and within a band of HK$7.75-7.85 to US$1.

The monetary system's structure is characterized by currency board arrangements requiring the monetary base to be at least 100% backed by US dollar reserves held in the Exchange Fund, and changes in the monetary base to be 100% matched by corresponding changes in US dollar reserves. The monetary base comprises certificates of indebtedness (CoIs), notes and coins, the aggregate balance, and exchange fund bills and notes. Banks are required by law to buy CoIs in exchange for issuing HKD notes and depositing the necessary USD backing with the Exchange Fund. The aggregate balance represents the balance of clearing accounts held by banks with the HKMA.

Under Hong Kong's monetary policy regime, the Fed's monetary policy has a major and direct influence on monetary conditions in Hong Kong. However, it was certainly not the Fed that determined Hong Kong should operate a policy of this nature. It was Hong Kong's choice, and no permission is required from Washington or New York to continue or discontinue it.

Credit regulation functions

In view of the increasing risk of a property price bubble, the HKMA has introduced several rounds of countercyclical macro-prudential measures since October 2009 to strengthen risk management of banks in the property mortgage lending business. The objective of these measures has been to strengthen the resilience of the banking sector against a severe adjustment in property prices.

There are renewed signs of overheating in the property market so far in 2017. Property prices continued to increase since the start of the year and remained above the recent peak recorded in September 2015. In addition, transaction volume for residential properties nearly doubled from around 3,300 units in January to 6,100 units in June 2017. As a result, the HKMA introduced new countercyclical measures to strengthen the risk management of banks.

Round of measures that were introduced in May 2017, included (1) lowering the maximum loan-to-value (LTV) allowed for borrowers with existing mortgages by 10%, ie, from 50-60% to 40-50% depending on the transaction size; (2) lowering the maximum debt-servicing ratio (DSR) for borrowers whose income is mainly derived from outside HK by 10% to 30%; (3) raising the risk-weight floor to 25% from 15% for new residential mortgage loans granted by banks when they calculate capital adequacy ratios.

Current policy stance

The current policy objective remains currency stability, which is maintained through an automatic interest rate adjustment mechanism and the HKMA's firm commitment to honor the convertibility undertakings (CUs).

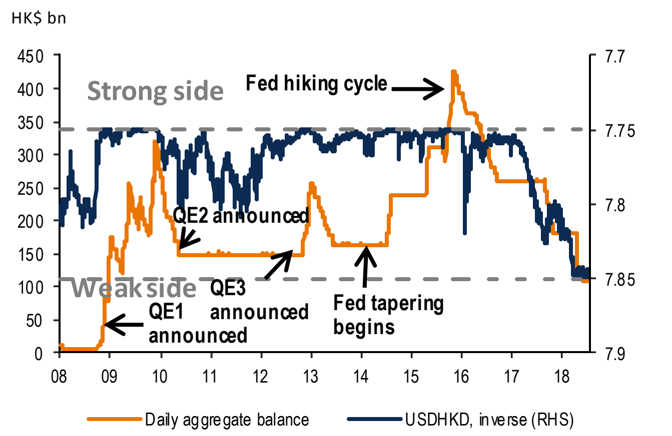
Data and information dissemination

The HKMA hosts irregular press conferences to announce changes in guidelines, updates on macro-prudential measures or comments regarding latest market-moving news. The meeting minutes are usually released at the same time.

There is a formal commitment from the chief executive of the HKMA to appear before the Panel on Financial Affairs of the Legislative Council three times a year to brief members and to answer questions about the HKMA's work. Representatives from the HKMA attend Legislative Council Panel meetings from time to time to explain and discuss particular issues, and committee meetings to assist members in their scrutiny of draft legislation.

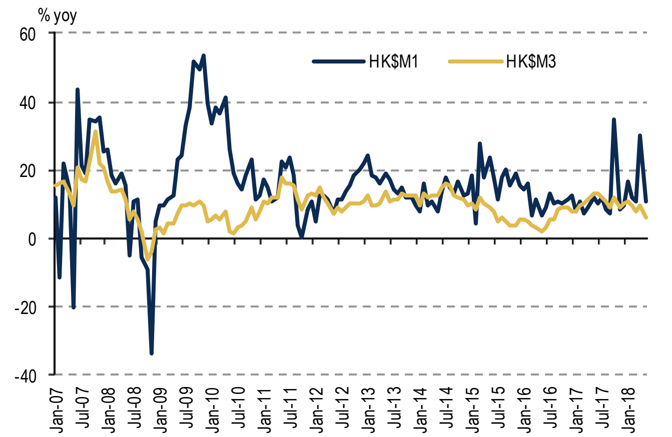
The HKMA publishes monthly monetary and banking statistics, as well as half-yearly/annual updates on economic and financial conditions. However, the Census and Statistics Bureau is primarily responsible for disseminating Hong Kong's economic statistics, including the national accounts.

Chart 18: HKMA constantly tracks capital flows into and out of HK



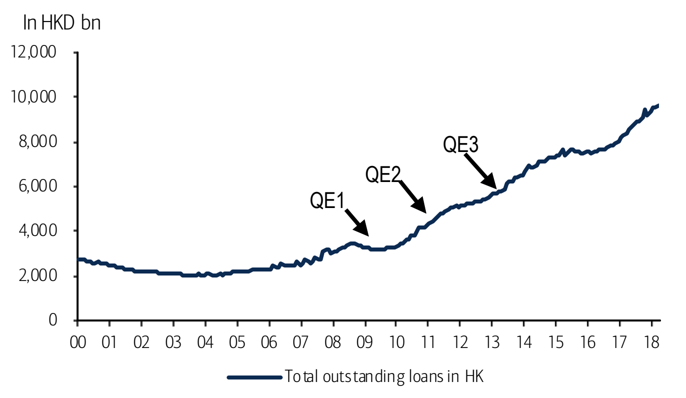
Source: CEIC

Chart 19: Monetary aggregates



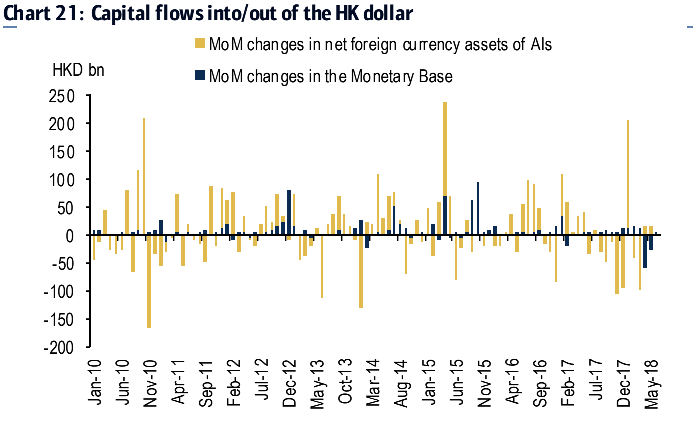
Source: CEIC

Chart 20: Total loans outstanding in Hong Kong



Source: CEIC

Chart 21: Capital flows into/out of the HK dollar



Source: CEIC

Bond market

Exchange Fund Bills and Notes. The HKMA issues Exchange Fund Bills (EFBs) and Exchange Fund Notes (EFNs), which are guaranteed by the government. 91-day bills and 182-day bills are issued weekly. 364-day bills are issued monthly. The only EFN now issued is the two-year note and the auctions are held quarterly. EFNs with maturities greater than two years were not issued since January 2015, although contributors are still required to prove quotes for designated tenors of three years and above. EFBs and EFNs are usually used as collateral for OMOs and are owned by banks for their liquidity needs. Market makers of specified instruments (SIs) can cover short positions in EFBs and EFNs with a long position of SIs, or vice-versa, under the fungibility condition. SIs comprise Hong Kong government bonds (HKGBs) and Hong Kong iBonds.

Negotiable Certificates of Deposit (NCD). NCDs are issued by banks and financial institutions and may be on a fixed or floating rate. Issuance is conducted through private placement or public syndication.

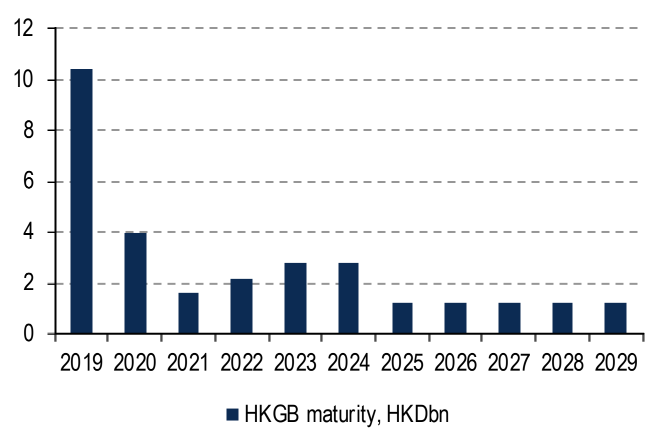
Hong Kong Special Administrative Region (SAR) Government Bonds. The HKGB program was initiated in 2004, after not issuing any bonds since 1984, to develop the benchmark bond market further. Two-year, three-year, five-year and 10-year bonds are issued under the institutional bond issuance program each year. Retail bond issuances are also offered. Unlike Exchange Fund paper, government bonds are not backed by FX reserves and do not form part of the monetary base. The bonds represent an unsecured liability and cannot be used as collateral against the Discount Window.

The Hong Kong Mortgage Corporation. Issuance began in 1998 as a means to fund mortgage purchases from the secondary market. Owned by the government through the Exchange Fund, the 1998 HKD20bn Debt Issuance Program (DIP) was established to raise funds in the institutional market for general financing requirements (developing the mortgage market, home ownership). The program doubled to HKD40bn in 2003 and in 2004 was extended to the retail market for HKD20bn. Later in June 2007, a USD3bn Medium-Term Note (MTN) Program was established to enable the HKMC to issue notes in multiple currencies.

Auction and placement mechanism. EFBs are issued by competitive tender on a bid-yield basis (minimum bid HKD500,000). EFBs are issued at discount in denominations of HKD500,000 in computerized book entry form. Announcements of tender results are made on *Reuters* (HKMAOOD and HKMAOOE). Settlement is completed on the first business day after the relevant tender day.

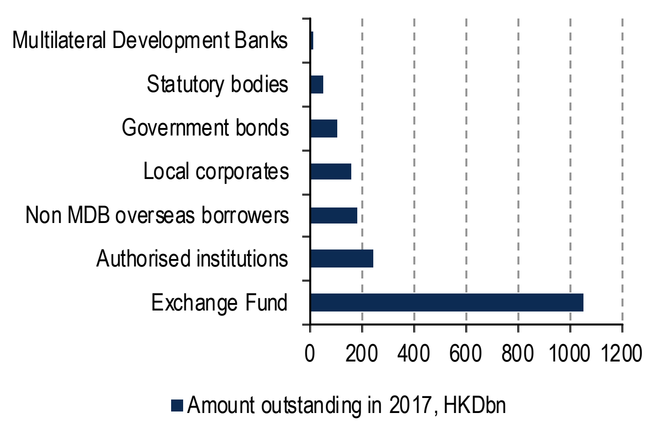
EFNs are issued by competitive tender on a bid-price basis or by non-competitive

Chart 22: Maturity profile of Hong Kong government bonds



Source: Bloomberg

Chart 23: Outstanding debt instruments



Source: CEIC

tender, subject to a minimum bid of HK$50,000. Competitive tenders must be submitted through Recognized Dealers, which are appointed as Eligible Market Makers by 10:30am on the relevant tender day. Tender results will be announced no later than 3:00pm on the relevant tender day. Settlement will be effective on the first business day after the relevant tender day.

Derivatives market

Interest rate swaps. These swaps are very actively traded and very liquid, with tenors ranging up to 15 years, though beyond 10 years liquidity is less abundant. There are no restrictions on foreign investors to the IRS market. The 3-month HIBOR fixing provides the reference rate for the floating leg. The effective date is T+0 for orders placed before 11am and T+1 for orders placed after 11am.

Basis swaps represent cash-flow exchanges between 3m floating USD LIBOR against 3m floating HKD HIBOR. They are typically used for corporate liability hedging and investor asset swapping, and are liquid out to five years in normal conditions.

Swaptions. Actively quoted and traded in Hong Kong with a market in caps, floors and generic swaptions.

Table 22: Summary statistics of Hong Kong derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-ask spread	Bloomberg / Reuters Reference
Interest rate swaps				
1-year	HKD 3-4bn	HKD 150k DV01	2bp	HDSW1/ HKABHIBOR
5-year	HKD 2-3bn	HKD 100k DV01	2bp	HDSW5/ HKABHIBOR
10-year	HKD 500m-1bn	HKD 50k DV01	2bp	HDSW10/ HKABHIBOR
Basis swaps				
1-year	HKD 2-3bn	HKD 100k DV01	2bp	HDBS / HKABHIBOR
Swaptions				
1x5	HKD 50m*	HKD 500mn	3 vol	HDSP015 Curncy
5x5		HKD 60mn	3 vol	HDSP055 Curncy

Source: Bloomberg, Reuters. *Estimated from the broker market and client trading.

FX market

The HKD has been linked to the USD since 1983 with the objective of maintaining a stable external value of the HKD against other major currencies. Since 18 May 2005, the HKD has been operating on a two-way convertibility undertaking range between 7.75 and 7.85 against the USD. On 12 April 2018, USD/HKD touched 7.85 for the first time since the two-way convertibility undertaking range was introduced.

Table 23: Hong Kong FX market vital statistics and characteristics

FX Products	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
HKD Onshore						
Spot	HKD Spot	USD 6.0bn	USD 20mn	HKD 0.0002	HKD=D2	No restrictions, accessible to both onshore and offshore entities.
Forwards	Forwards	USD 6.0bn	USD 50mn	HKD 0.0002-HKD 0.0020	HKDF=	Forwards are available for tenors up to ten years and are liquid for tenors less than one year.
Options	FX Options	USD 250m	USD 50-100m	0.3 vol	TTDE	Options are available for tenor up to two years and are liquid for tenor up to one year.

Source: Reuters

Investor base

The key holders of EFBs and EFNs are banks given their use as collateral with the HKMA Discount Window. Depending on the bank's classification, banks' are subject to at least one of the following: the liquidity coverage ratio (LCR), net stable funding ratio (NSFR), liquidity maintenance ratio (LMR) and core funding ratio.

The supply of Hong Kong bonds is low relative to demand. Pension funds and insurance companies receive rising contributions from scheme members and policy holders. The main pension funds are the Mandatory Provident Fund and Occupational Retirement Schemes Ordinance (ORSO).

Table 24: Asset allocation of Hong Kong's Mandatory Provident Fund

	Deposits and cash	Debt	Equity	Total
Hong Kong	11	9	39	**59**
Japan	0	1	3	**4**
Asia	0	1	9	**10**
North America	0	5	10	**15**
Europe	0	3	10	**13**
Total	**11**	**19**	**71**	**100**

Source: CEIC

Rules, regulations capital controls and taxation

Article 112 of the Basic Law embodies Hong Kong's laissez faire approach to free capital flows and commitment to the Currency Board system. The Securities and Futures Commission (SFC) is an independent non-governmental body charged with regulating the securities and futures market. In addition to regulating a broad range of markets, the SFC also regulates investment products offered to the public, listed companies and the Hong Kong Exchanges and Clearing Limited.

Government-issued debt and EFB/Ns are not subject to taxation in the form of capital gains, stamp duty or withholding tax on interest income. This is also the case for eligible multilateral organizations that issue HKD debt. In the case of corporate bonds, there is a profit tax of 16.5% and 15.0% applicable to corporations and unincorporated businesses, respectively.

Clearing and settlement

Section 4 of the Clearing and Settlements Systems Ordinance (CSSO) gives designation and oversight to the HKMA. There are three clearing and settlement systems in Hong Kong. The first is the Central Moneymarkets Unit (CMU). It is a central securities depository unit operated by the HKMA. The CMU provides clearing, settlement and custodian services for HKD debt securities, including ETBs and ETNs. It is linked to the HKD Real Time Gross Settlement System (RTGS) that provides end of day Delivery Versus Payment (DVP) and this has been extended to USD, EUR and RMB RTGS. Overseas investors can opt to settle through Euroclear, Clearstream or CMU, if they have an account.

The second and third systems are operated by the Hong Kong Exchanges and Clearings Limited (HKEX): the Central Clearing and Settlement System (CCASS) and the Derivatives Clearing and Settlement System (DCASS). The CCASS provides clearing, settlement, and depository services for exchange traded securities. The DCASS is the clearing and settlement products for derivatives products of HKEX.

Table 25: Summary of Hong Kong bond markets and products

Instrument	Exchange Fund Bills	Exchange Fund Notes
Issuer	Hong Kong Monetary Authority	Hong Kong Monetary Authority
Currency	HKD	HKD
Tenor	91, 182 and 364 days	2 years
Interest rate/coupon	Issued at discount	Semi-annual
Coupon payments	Zero	Fixed
Day count calculation	Act/365	Act/365
Amortization schedule	Bullet	Bullet
Form	Registered	Registered
Amount outstanding	HKD 1,018,913m (June 2018)	HKD 35,000m (June 2018)
Secondary Market		
Trading	OTC	OTC
Quotation convention	Yield	Price
Settlement	T+0/ T+1 (before/after 11:00 HKT)	T+0/ T+1 (before/after 11:00 HKT)
Average daily turnover	HKD 12,029m	HKD 365m
Bid/offer spread	3-10bp	5-10bp
Average trade size	HKD 100-300m	HKD 100m
Clearing mechanism	Central Money markets Unit (CMU)/ Euroclear/ Clearstream	Central Money markets Unit (CMU)/ Euroclear/ Clearstream
Major players	Banks	Banks
Trading hours	9:00-12:00 and 14:00-16:00 (Hong Kong)	9:00-12:00 and 14:00-16:00 (Hong Kong)
Regulations		
Restrictions on foreign investment	No restrictions	No restrictions
Custodian	Central Money Markets Unit (CMU)	Central Money Markets Unit (CMU)
Withholding tax	None	None
Capital gains tax	None	None
Entry/Exit tax	None	None
Primary Auctions		
Auction style	Competitive tender on a bid-yield basis	Competitive tender on a bid-price basis or non-competitive tender
Average issue size (per month)	HKD 200-250bn	HKD 400m
Minimum amount of tender	HKD 500,000	HKD 50,000
Bidders	Eligible market makers only	Competitive tender: Eligible market makers and retail investors through eligible market markets. Non-competitive tender: Retail investors through Hong Kong Securities Clearing Company Limited.

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	Aa2/AA+/AA+	Aa2/AA+/AA+
2017	Aa2/AA+/AA+	Aa2/AA+/AA+
2016	Aa1/AAA/AA+	Aa1/AAA/AA+
2015	Aa1/AAA/AA+	Aa1/AAA/AA+
2014	Aa1/AAA/AA+	Aa1/AAA/AA+
2013	Aa1/AAA/AA+	Aa1/AAA/AA+
2012	Aa1/AAA/AA+	Aa1/AAA/AA
2011	Aa1/AAA/AA+	Aa1/AAA/AA
2010	Aa1/AAA/AA+	Aa1/AAA/AA
2009	Aa2/AA+/AA	Aa2//
2008	Aa2/AA+/AA	-
2007	Aa2/AA/AA	-
2006	Aa3/AA/AA-	-
2005	A1/AA-/AA-	-
2004	A1/A+/AA-	-
2003	-/A+/AA-	-
2002	-/A+/AA-	-
2001	-/A+/AA-	-
2000	-/A/A+	-

Source: , Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Clean price for HKGBs and EFNs, Yield for EFBs
Settlement: T+1
Basis: Act/365
Coupon frequency: Semi-annual

IRS

Fixing: 3m HIBOR
Coupon frequency: quarterly, floating/fixed Act/365

Basis swap

Fixing: 3m USD LIBOR/ 3m HIBOR
Coupon frequency: quarterly USD day count Act/360, local Act/365

Bloomberg pages

HKD CURNCY <GO> ALLQ<GO>
OTC HKD<GO> - HK market monitor
HKMA <GO> - HKMA page
GBHK <GO> HK government bonds
HKMC <GO> - HK Mortgage Corporation
HIBO <GO> - HIBOR fixing

Reuters pages

HIBOR= HIBOR fix
HKMAOOB – HKMA Aggregate Balance
HKMAOOD – Bills and Notes tenders
HKDISC1 – Chronology of discount rate
HKEFB – EF Bills issuance schedule
HKEFN – EF Notes issuance

Useful official websites

Hong Kong Monetary Authority (HKMA)
www.info.gov.hk

Financial Services and Treasury Bureau
http://www.fstb.gov.hk/

Invest Hong Kong
www.investhk.gov.hk

Hong Kong Government Bond Program
www.hkgb.gov.hk

Mandatory Provident Fund
http://www.mpfa.org.hk/eindex.asp

Useful market websites

HK Securities and Futures Commission
http://www.sfc.hk/sfc/html/EN

HK Exchanges and Clearing Limited
http://www.hkex.com.hk/eng/index.htm

Hong Kong Association of Banks
www.hkab.org.hk

Central Money markets Unit
https://www.cmu.org.hk/cmupbb_ws/eng/page/wmp0100/wmp010001.aspx

Hong Kong Mortgage Corporation Limited
www.hkmc.com.hk/eng/

HK Interbank Clearing Limited
http://www.hkicl.com.hk/clientbrowse.do?docID=119&lang=en

HK Institute for Monetary Research
http://www.hkimr.org/index.asp

*Links are to third-party websites, and do not contain BofAML Global Research.

India

Aastha Gudwani
DSP Merrill Lynch (India)

Indranil Sen Gupta
DSP Merrill Lynch (India)

Rohit Garg
Merrill Lynch (Singapore)

Overview

At current exchange rates, India's local government bond market is around US$757.7bn (June 2018 outstanding). Local investors are the dominant market participants. In recent years, the government has increased foreign participation limits significantly and incrementally, broadening the investor base in the government bond market. The restrictions around freer foreign participation mean foreign investors are involved mainly in the offshore non-deliverable swap market, where they can take views on the path of monetary policy, inflation and growth. Liquidity in the non-deliverable overnight index swaps (OIS) market has improved significantly in recent years.

Reserve Bank of India

Objectives

The Reserve Bank of India (RBI) is in charge of the monetary policy framework that follows a flexible inflation targeting regime. The stated objective of the monetary policy is to maintain price stability while keeping in mind the objective of growth. The RBI is responsible for ensuring adequate flow of credit to productive sectors of the economy and financial stability. In its role as regulator and supervisor of the financial system, the RBI is responsible for maintaining public confidence in the system, protecting depositors' interests and providing cost-effective banking services to the public.

The RBI manages foreign exchange by facilitating external trade and payment, and promoting orderly development and maintenance of the FX market in India through the Foreign Exchange Management Act of 1999. Officially, INR is free and the RBI only intervenes to smooth volatility, but it is really a dirty float with FX intervention loosely targeting a real effective exchange rate band. The RBI also issues currency to provide the public an adequate and quality supply of currency notes and coins.

The RBI serves as a banker to the government, performing merchant banking functions for the central and state governments. It is a banker to banks as well, maintaining banking accounts of all scheduled banks.

Legal framework

The central bank's functions are laid out in the RBI Act, 1934. Its preamble enjoins the RBI to "regulate the issue of banknotes and the keeping of reserves with a view to securing monetary stability and generally to operate the currency and credit system of the country to its advantage". The primary objective of the monetary policy is to maintain price stability while keeping in mind the objective of growth. Price stability is a necessary precondition to sustainable growth.

In May 2016, the RBI Act, 1934 was amended to provide a statutory basis for the implementation of the flexible inflation targeting framework. The amended RBI Act also provides for the inflation target to be set by the Government of India, in consultation with the RBI, once in every five years. Accordingly, the Central Government has notified in the Official Gazette 4% Consumer Price Index (CPI) inflation as the target for the period from 5 August 2016 to 31 March 2021 with the upper tolerance limit of 6% and the lower tolerance limit of 2%. The Central Government notified the following as factors that constitute failure to achieve the inflation target: the average inflation is more than the upper tolerance level of the inflation target for any three consecutive quarters; or the average inflation is less than the lower tolerance level for any three consecutive quarters. Prior to the amendment of the RBI Act in May 2016, the flexible inflation targeting framework was governed by an Agreement on Monetary Policy Framework between the Government and the RBI of 20 February 2015.

Amendment of RBI Act paves way for an independent MPC

Budget 2016 had proposed to set up a Monetary Policy Committee (MPC) by amending the RBI Act, 1934 through a Finance Bill to give statutory backing to the monetary policy agreement between the government and the RBI. This was passed in the May 2016 budget session of the parliament. According to this amendment, the monetary policy is now set by a six-member MPC rather than singularly by the RBI governor. The MPC has the following features.

- The government, in consultation with the RBI, now fixes the inflation target in terms of CPI inflation once every five years that would form the basis of the MPC's policy action. For the current five years, the target has been set at CPI inflation of 4% +/- 2%. The MPC has six members, including the governor (chairperson), deputy governor in charge of the monetary policy, an RBI official (appointed by the RBI board) and three members appointed by the government.

- In addition to determining the policy rate, all questions that come up before any meeting of the MPC are be decided by a majority vote. This could include decisions on liquidity and exchange rate management. The operating framework is fine-tuned and revised depending on the evolving financial market and monetary conditions, while ensuring consistency with the monetary policy stance. The liquidity management framework was last revised significantly in April 2016.

Decisions

According to the new monetary policy agreement between the government and the RBI, the governor, and in his absence the deputy governor in charge of the monetary policy, determine the policy rate and any other monetary measures to achieve the inflation target. The Financial Markets Department handles day-to-day liquidity management operations.

Table 26: Key Facts

Name	Reserve Bank of India
Founded	1-Apr-35
Governor	Urjit. R. Patel
Deputy Governors	N. S Vishwanathan, Viral Acharya, M. K Jain, BP Kanungo
Autonomous	Yes
Government representative on board	Yes, two from the Finance Ministry
Terms	As appointed by the government
Inflation target	4%+/-2%
Latest move	Hike (by 25bp in Aug 2018)

Source: RBI

Table 27: Key Links*

Main page
Board members
Calendar, communiqués and minutes
Statistics
Reports
Presentations and speeches
Legal framework
English version
Ministry of Finance
National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.

Source: BofA Merrill Lynch Global Research

Current MPC

Governor Urjit Patel, a distinguished economist, heads the RBI's MPC. Apart from him, Dr. Viral Acharya and Dr. Michael Patra also form a part of the MPC, representing the RBI. There are three external members from academia: Dr. Pami Dua, Dr. Chetan Ghate and Dr. Ravindra Dholakia, who also form the MPC. Each member is appointed for a non-recurring four-year term. In the event of a tie, the governor (also the chairperson of the MPC) has a veto.

Table 28: MPC details

MPC members	Background
Dr. Urjit Patel	Governor of the Reserve Bank of India – Chairperson, *ex officio*
Dr. Viral Acharya	Deputy Governor of the Reserve Bank of India, in charge of Monetary Policy
Dr. Michael Patra	Executive Director, the Reserve Bank of India
Dr. Pami Dua	Director, Delhi School of Economics
Dr. Chetan Ghate	Professor, Indian Statistical Institute (ISI)
Dr. Ravindra Dholakia	Professor, Indian Institute of Management, Ahmedabad

Source: RBI

Urjit Patel's committee

The RBI constituted an expert committee to revise and strengthen the monetary policy framework, chaired by Dr. Urjit R. Patel in September 2013. The committee submitted its report in January 2014 and some of its recommendations have been implemented already. These include adoption of headline CPI inflation as the nominal anchor; explicit recognition of the glide path for disinflation; transition to a bi-monthly monetary policy cycle; progressive reduction in access to overnight liquidity under the liquidity adjustment facility (LAF) at the fixed repo rate and corresponding increase in access to liquidity through term repos; and introduction of longer tenor term repos.

Monetary policy regime and instruments

The RBI pursues price stability, growth, exchange rate stability and financial stability objectives. The relative emphasis is contextual. Inflation forecasts are now based on CPI, although the RBI also monitors wholesale price index inflation and core inflation.

The simultaneous coexistence of multiple monetary policy transmission channels necessitates an array of monetary policy – quantum and rate – instruments. In line with Urjit Patel's committee recommendations, the RBI has moved toward a progressive reduction in access to overnight liquidity under the liquidity adjustment facility at the fixed repo rate and, correspondingly, has increased access to liquidity through term repos. It has also introduced longer tenor term repos. These variable term repo and fixed-rate repo auctions along with reverse repo auctions and marginal standing facility (MSF) under the liquidity adjustment facility serve as the main monetary policy instruments.

Changes in the LAF term repo, fixed repo, the bank rate and reverse repo rates signal the RBI's interest rate stance, and alter the price of primary liquidity. Liquidity operations usually try to encase call rates in a corridor defined by the LAF reverse repo (25bp below the repo rate) and the MSF rate (25bp above the repo rate). While reverse repo is used to park excess market liquidity with the RBI, the MSF provides a safety valve against unanticipated liquidity shocks.

The Patel report recommended the operating target be shifted gradually to the 14-day repo rate from the overnight call rate. The 14-day term repo will then become the main policy instrument. The RBI will continue to manage liquidity and meet the demand for banking system liquidity using a mix of term repos, overnight repos, open market operations (OMO) in government paper, the MSF and changes in the cash reserve ratio (CRR), currently set at 4%.

The RBI also uses the statutory liquidity ratio (SLR) for monetary management. It has over the years reduced the SLR to 19.5% now from over 35% in the 1990s. In addition, the RBI uses the Market Stabilization Scheme for the monetary management of capital flows. As of now, the RBI intends to take liquidity to neutral, while keeping a neutral monetary policy stance.

Exchange rate regime and instruments

Although the RBI officially only contains currency volatility, the exchange rate regime is really a managed float. It intervenes in the FX market by outright transactions, swaps, forwards and forward swaps. It also tightens/eases regulations with respect to banks' net-open positions, as well as hedging requirements to stabilize the FX market. In addition, the Urjit Patel committee has recommended that "the RBI's strategy should be to build an adequate level of foreign exchange reserves, adequacy being determined not only in terms of its existing metrics, but also in terms of intervention requirements set by past experience with external shocks and a detailed assessment of tail events that materialized in the country experiences".

Credit regulation functions

The Banking Regulation Act of 1949 empowers the RBI to inspect and supervise commercial banks. Its focus has shifted gradually from micro regulation of banks' day-to-day activities to macro supervision, with a view to ensuring regulations are adhered to in an environment where bank managements have the freedom to make all commercial decisions based on their own judgment.

On-site inspection of banks is carried out annually. The Annual Financial Inspection (AFI) is based on statutorily mandated areas of solvency, liquidity and operational health of the bank. It is based on the internationally adopted 'capital adequacy, asset quality, management, earnings, liquidity and system and control' (CAMEL) model. A focused off-site surveillance function was initiated in 1995 for domestic operations of banks to monitor their financial health with two on-site inspections. This helps identify banks that show financial deterioration and would be a source for supervisory concerns.

Current policy stance

The RBI's current policy stance is governed by the MPC. As of now, the stance of the MPC is neutral. The idea is to have 4% CPI inflation in the medium term on a durable basis. And in line with that objective, keeping in mind the backdrop pf growth, the RBI MPC adopted this stance.

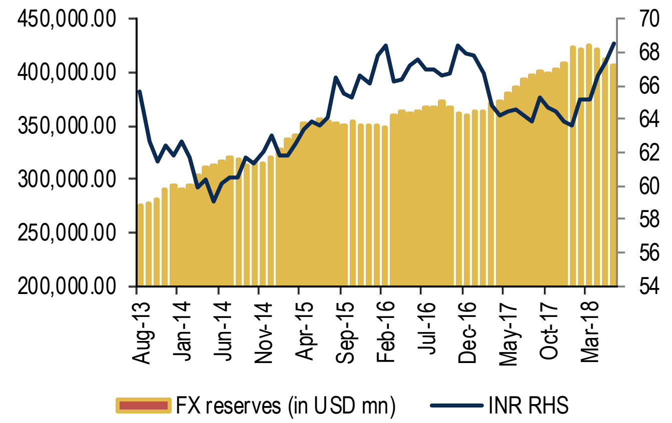
After a long hiatus, the RBI MPC, contrary to our expectations has been raising rates. There were two successive rate hikes of 25bp each in June and August 2018. We expect the RBI MPC to stay on long hold as shallow recovery is likely to get further protracted with higher lending rates, especially when inflation is peaking off.

Meetings, data and information dissemination

The RBI announces monetary policy reviews once every two months. Details of the policy decisions and the considerations behind the move are made available in a monetary policy statement released on the RBI website, followed by conference calls with the media and market participants. A monetary policy report is released bi-annually as an assessment report.

The RBI's website provides a full range of information about the most recent publications, speeches, press releases and circulars. Of note, relevant press releases and circulars are posted in 13 local languages. Key reports include the Statutory Annual Report and the Report on Trend and Progress of Indian Banking; the annual Handbook of Indian Statistics and the study of state budget finances. The half-yearly Financial Stability Report and Report on FX Reserves; and the monthly Bulletin and its Weekly Statistical Supplement, which also presents the RBI's balance sheet as of last but one Friday.

Chart 24: FX reserves and INR



Source: BofA Merrill Lynch Global Research estimates, Bloomberg, CEIC

Exhibit 1: Liquidity remains tight

Source: BofA Merrill Lynch Global Research estimates, RBI

Monetary policy

Background. The RBI sets policy rates six times a year, with repo being the key benchmark policy rate. The RBI conducts day-to-day liquidity management through the Liquidity Adjustment Facility (LAF), which involves maintaining the overnight interbank call money market rate between the Marginal Standing Facility (MSF) and the reverse repo rates. Currently, the repo rate at 6.5% is fixed at 25bp above the reverse repo rate (6.25%) by a policy directive. The overnight rate (floating leg of the IRS fixing) is around the repo rate because of prudent liquidity management by the RBI. However, when liquidity deficits are especially acute, like during the tax payment season at the end of March, the overnight rate can go much higher than the repo rate occasionally, to fine-tune, which the RBI has now started to do variable tenor term repos.

Policy framework. The nominal anchor of the monetary policy is headline CPI inflation. As of now, the repo rate signals the monetary policy stance. In a tightening cycle the overnight is likely to be anchored slightly above the repo rate. But in a rate cut cycle, the overnight rate can go to as low as the reverse repo rate. The talk to include a special deposit facility (SDF) to address this issue is already underway. This requires amendment to the RBI Act and would mark the floor of all rates. The RBI's main objectives include maintaining price stability and ensuring an adequate flow of credit to the productive sectors.

Base rate and other key rates. Repo is the rate for banks that apply overnight loans from the RBI. Reverse repo is the rate banks get by placing surplus liquidity with the RBI overnight. Eligible securities to be used as collateral to obtain overnight funding from the RBI include gold, cash and G-Secs. If a bank runs out of eligible collateral, it can resort to the RBI's MSF.

Open market operations. OMO is a liquidity management tool. The RBI can announce OMO anytime taking into account the situation of systemic liquidity and the RBI's monetary policy stance. As of now, in line with the RBI's neutral monetary policy stance, the liquidity stance is neutral as well. The RBI has been doing OMO buys so far to meet the liquidity needs of the system, but we expect them to step it up and provide around US$50bn of durable liquidity in FY19.

Lending and deposit facilities. These function as daily liquidity management tools. Liquidity imbalances are managed via release or absorption of liquidity at the respective rates. The RBI has proposed the creation of a standing deposit facility to fine-tune liquidity adjustments; this requires an amendment to the RBI act, which is pending.

Reserve requirements. The RBI has a cash reserve ratio (CRR) requirement for banks (currently 4%). This refers to the proportion of customer deposits and notes that each commercial bank must hold as minimum cash reserves. When the RBI needs to absorb excess liquidity, it can choose to raise the CRR by curtailing the lending capacity of the banks, used only when the excess liquidity is assessed to be permanent. The RBI also imposes a statutory liquidity ratio (SLR), which is the stipulated amount of government securities (as a proportion of their net demand and time liabilities) that banks need to hold at all times (currently 19.5%). The SLR is intuitively inversely proportion to fiscal consolidation and fiscal discipline, and provides a natural demand for G-sec.

Fiscal policy and debt issuance

India follows an April to March financial year system and relies heavily on domestic bond issuance to finance its fiscal deficit. In April 2018, the medium-term framework for investments by FPIs in G-sec was reviewed. The new guidelines stated that the limit for FPI investment in G-secs was increased by 0.5% to 5.5% of outstanding stock of securities in 2018-19 and to 6% of outstanding stock of securities in 2019-20. The limit for FPI investment in State Development Loans (SDLs) was unchanged at 2% of outstanding stock of securities. The overall limit for FPI investment in corporate bonds was fixed at 9% of outstanding stock. These limits are fixed in rupee terms.

The fiscal deficit, which trended upward to a peak of 6.5% in FY10 from 2.5% in FY08, has shown credible signs of reversal in the past two years. The deficit for FY18 came in at 3.5% of GDP, and Finance Minister Arun Jaitley has said he would continue to follow fiscal discipline. Mr. Jaitley has pushed for measures, such as higher disinvestment and implementation of the goods and services tax, to improve government revenues. In FY19 the fiscal deficit is expected to fall further to 3.3%, at the central level. We, however, expect some (~30bp) slippage. The general government fiscal deficit (the combination of state and center) remains high due to a few states announcing farm loan waivers and a revamp announced for power distribution companies (DISCOMS).

Bond market

Total bond issuances for FY18 (both center and state) are INR8.25tn. There have been net FII outflows from Indian debt so far in 2018 worth US$6.24bn.

Rules, regulations, capital controls, taxation

Foreign investors can invest INR4,443.23bn in debt instruments. Currently, the limits are INR2.0tn for government securities and INR2,44323tn for corporate bonds. Since July 2014, the cap on FII participation in G-Sec primary market auctions has increased by US$5bn to US$25bn and that for investment in long-term bonds in the secondary

Table 29: FY19 should see excess demand in G-sec market

1.Borrowing (a+b) in INR bn	**8840**
a. Center	4540
b. States	4300
2.Total demand (c+d+e) in INR bn	**8394**
c. Bank demand (net)	4194
d. FII	455
e. Others (excl FII)	3745
3. RBI's OMO needed to balance G-Sec mkt (1-2) in INR bn	**446**
4. Total RM creation by RBI in US$ bn	**37**
5. FX intervention in US$ bn	**-20**
6. RBI injection for liquidity (=4-5) in US$ bn	**57**
7. Govt. buyback Rsbn	**7**
8. RBI OMO/Govt buyback/MSS T-Bill maturity (@Rs70/USD for FY19)	**3990**
9. Excess G-Sec demand = (8-3)	**3544**

Source: BofA Merrill Lynch Global Research, RBI, Ministry of Finance

Table 30: Revised limits for FPI participation in G-sec, SDL and corporate bonds

In Rs Crore	G-Sec-General	G-Sec-Long Term	SDL - General	SDL-Long Term	Corporate Bonds	Total Debt
Current Limit	191,300	65,100	31,500	13,600	244,323	545,823
Revised Limit for the HY Apr-Sep, 2018	207,300*	78,700	34,800	7,100	266,700	594,600
Revised Limit for the HY Oct 2018-March, 2019	223,300*	92,300	38,100	7,100	289,100	649,900

Source: BofA Merrill Lynch Global Research estimates, RBI, * includes INR 4700 crore one-time addition to limit to provide for inclusion of coupon investment amount in utilization.

market has been reduced by US$5bn to US$5bn. Within the corporate bond limit, US$25bn is earmarked for the infrastructure sector and US$1bn for QFIs in the non-infrastructure sector. The remaining is for FIIs in the non-infrastructure sector. Investment limits for G-secs may be increased by up to 5% of the government's annual gross issuance excluding buybacks. Investment limits for corporate bonds will be reviewed when 80% of the existing limits are used. In May 2013, India reduced the withholding tax on government and corporate bonds to 5% from 20% for interest income. If fixed-income assets are held for less than a year, a short-term capital gains tax of 10% is also levied. However, if the resident country of the FII has completed a tax treaty with India, it may be exempt from many of these taxes.

Bond market

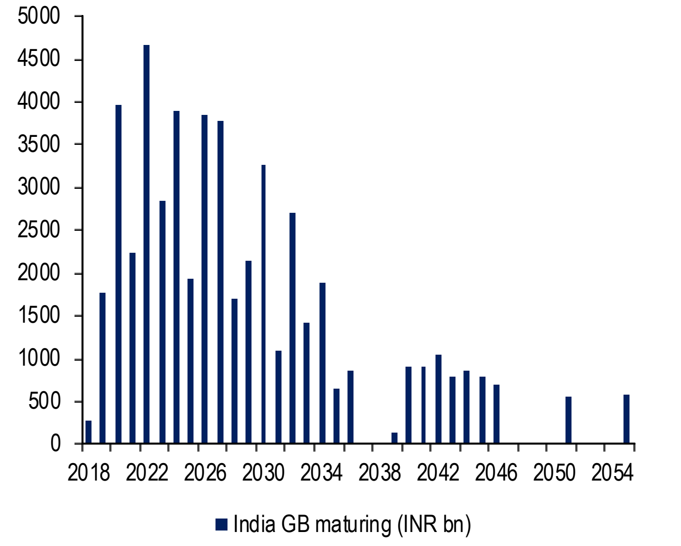
India's government bond issuance totaled INR5.88tn in FY18. Bonds trade through two platforms: 1) the NDS OM order matching system managed by the Clearance Corporation of India Limited (CCIL), where 80-85% of the market volumes go through; and 2) an interbank broker market. Foreign institutional investors cannot trade through the NDS OM system; they must trade through an onshore licensed broker. Foreigners can hold up to US$43bn of G-secs and up to US$51bn of corporate bonds.

Money market. The main instrument in the money market is the Treasury bill issued by the RBI on behalf of the government. Other instruments where volume is increasing rapidly include certificates of deposit (CD) issued by banks with tenors of less than a year and development finance institutions with tenors of 1-3 years. There is also a growing commercial paper (CP) market, which is a discount instrument issued by corporates to raise short-term funds.

Treasury bills. The RBI issues Treasury bills on behalf of the government with tenors of 91, 181 and 364 days. The 91-day bills are issued every Wednesday, with the other two tenors auctioned on alternate Wednesdays. They are zero-coupon instruments issued at a discount to face value and are the main money-market instrument in India.

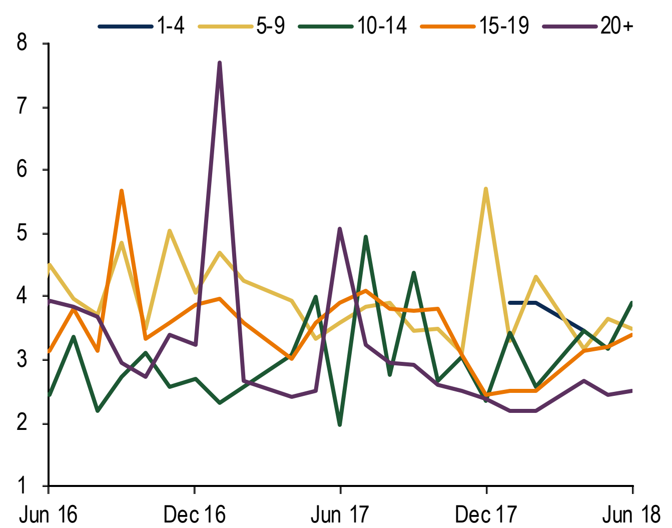
Government bonds (G-sec). The RBI issues bonds on behalf of the government, which are used primarily to finance the government budget deficit. Maturities are in the range of 2-30 years. The bonds are issued as securities bearing a fixed coupon paid semi-annually. Primary dealers underwrite these issues with a minimum underwriting commitment (MUC), which provides a buffer to the market since the RBI cannot participate in the primary market. Auctions usually take place every Friday.

Chart 25: Maturity Profile of India government bonds (INRbn)



BofA Merrill Lynch Global Research, RBI

Chart 26: Bid to-cover ratio



Source: BofA Merrill Lynch Global Research, RBI

The RBI also conducts liquidity injecting OMO via the secondary market for government bonds, or by changing the schedule for primary auctions when needed. Through these actions the RBI can often have an important impact on the bond market. For example, when liquidity is tight and the RBI steps in to buy bonds, the bond market is likely to find some support from these operations.

Inflation Indexed bonds. The RBI issued its first-ever IIBs on 4 June 2013, at a real yield of 1.44%. The investor response, especially from retail investors, was not favorable and the bonds have now been discontinued.

Public sector undertaking (PSU) bonds. Public sector corporations issue these bonds, in which the federal or state governments have a majority stake. Maturities are typically 2-10 years and some of the issues have an explicit government guarantee from the state or federal government.

Auction and placement mechanism. Treasury bills are issued via auctions, though government securities can be issued on tap or through OMO as well. The auctions are normally French or Dutch, with the main difference being that all winning bidders are filled at the cut price/yield in the Dutch auction rather than their individual bids. Most PSU bonds are issued via private placements.

Derivatives market

Interest rate swaps (IRS). The main yield curve is the onshore overnight indexed swap (OIS) curve. These trade at tenors of up to five years, benchmarked against the Mumbai Interbank Offer Rate (MIBOR), which is published by the National Stock Exchange. Tenors beyond five years tend to be illiquid and traded irregularly. For offshore investors, the non-deliverable OIS is reasonably liquid, also out to five-year tenors. At times, there is a spread between onshore OIS and offshore NDOIS rates because of differences in flows, which cannot automatically be arbitraged because of the degree of market segmentation. Daily volumes in the onshore OIS market average about INR100bn.

Table 31: Summary statistics of India derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-ask spread	Reuters reference notes
Interest rate swaps OIS				
1-year	INR50bio	USD5k	2-3bp	IN00O/N Index
5-year	INR30bio	USD10k	2-3bp	IN00O/N Index
10-year	INR500mio	USD5k	5-7bp	IN00O/N Index
Interest rate swaps MIFOR				
2-year	INR2bio	USD2k	20-25bp	MIFOR=
5-year	INR1bio	USD5k	20-30bp	MIFOR=
10-year	Very rarely	USD5k	30-40bp	MIFOR=
ND Interest rate swaps				
1-year	INR20bio	USD5k	2-3bp	IRSWN1 Curncy
5-year	INR25bio	USD10k	2-3bp	IRSWN5 Curncy
10-year	INR500mio	USD5k	5-7bp	IRSWN10 Curncy
Cross-currency swaps				
	Market prices out of mifor curve	NA	NA	NA

Source: Reuters

FX market

Since 1993, India has been following a managed float exchange rate regime that reflects market demand and supply conditions. While the RBI does not institute a fixed target or preannounced band, the value of the rupee is tracked using the real effective exchange rate (REER), based on the currencies of India's major trading partners (USD, EUR, GBP, JPY, CNY and HKD). Thus, the RBI's stated policy is to intervene only to contain too much volatility.

The RBI announces a daily reference rate for INR against USD, EUR, GBP and JPY. It also monitors exchange rate movements, and at times of excessive market fluctuation, intervenes to maintain external competitiveness. The rupee is fully convertible in the current account. INR purchases can be executed with necessary document proofs. However, INR is only partially convertible in the capital account. It is not convertible in the capital account unless approved by the central bank.

Table 32: India FX market vital statistics and characteristics

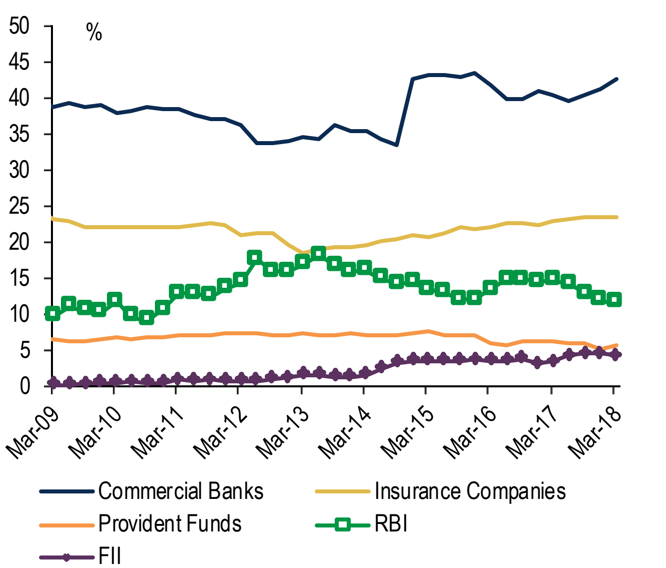
FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
INR Onshore						
Spot	INR Spot	USD5.0-6.0bn	USD3-10mn	INR 0.005-0.03	INR = D2	▪Trading hours: 9:00 -17:00 (Mumbai)
Forwards	INR Forwards	USD4-5bn	USD5-15mn	INR 0.02-0.05	INRF=	Forwards on INR are available and liquid up to 1 year
Options	FX Options	USD50-100mn	USD15mn	0.4-1.0 vol	INRVOL	▪FX Options on INR are available till tenor of 5 years and are liquid for tenor shorter than 2 years.
INR Offshore						
Forwards	NDF	USD1.5-2.0bn	USD5-20mn	INR0.02-0.10	PNDF	▪INR is non-deliverable.
					PNDG	▪Offshore entities can access the market through NDF.
Options	NDO	USD350-400mn	USD10-30mn	0.4-1.0 vol	TTDE	Dollar settled NDO on INR are available till tenor of 5 years and are liquid for tenor shorter than 2 years.

Source: Reuters

Investor base

Among local investors, banks, insurance companies and fund managers are the major investors in government bonds. Eligible foreign investors for the Indian debt market include Foreign Institutional Investors (FIIs), Qualified Foreign Investors (QFIs) and long-term investors registered with the Securities and Exchange Board of India (SEBI), Sovereign Wealth Funds (SWFs), multilateral agencies, pension and insurance, and central banks of other countries. Net FII investment into Indian debt was US$23bn in

Chart 27: Major holders of GoI bonds



BofA Merrill Lynch Global Research; RBI

Table 33: Ownership breakdown of GoI bonds (as of March 2018)

	% of total share
Total Govt Bond Outstanding	**100%**
Commercial Banks	42.68
Non-Bank PDs	0.29
Insurance Companies	23.49
Mutual Funds	1
Co-operative Banks	2.57
Financial Institutions	0.9
Corporates	0.91
Provident Funds	5.88
RBI	11.62
Others	6.3
Total Local holders	**95.6**
FIIs	**4.4**

Source: BofA Merrill Lynch Global Research; RBI

2018 and so far during 2018 is around US$6.24bn.

Rules, regulations, capital controls, taxation

Foreign investors can invest INR5946bn in debt instruments. Currently, the limits are INR3.28tn for government securities and INR2.667tn for corporate bonds. Within G-secs/SDLs, long-term FPIs have a special allocation of INR858bn. Within the corporate bond limit, a special category for long-term FPIs has been opened up just for investment in infrastructure bonds and is INR95bn.

Investment limits for G-secs may be increased by up to 5% of the government's annual gross issuance excluding buybacks. Investment limits for corporate bonds will be reviewed when 80% of the existing limits are used.

In May 2013, India reduced the withholding tax on government and corporate bonds to 5% from 20% for interest income. If fixed-income assets are held for less than a year, a short-term capital gains tax of 10% is also levied. However, if the resident country of the FII has completed a tax treaty with India, it may be exempt from many of these taxes.

Clearing and settlement

The CCIL is the central counterparty for all transactions in G-sec. Trades are settled on a delivery vs payment (DVP) basis and the CCIL guarantees all trades using the Settlement Guarantee Fund, which is financed out of margins paid by all market participants.

Table 34: Summary of India bond markets and products

Instrument	Treasury bill (ITB)	Treasury bond (IGB)
Issuer	Government of India	Government of India
Currency	INR	INR
Principal	INR25,000	INR10,000
Tenor	91, 182, 364 days	2-30 years
Interest rate/coupon	Issued at discount	Fixed
Coupon Payments	Zero	Semiannual
Day Count Calculation	Actual/365	30/360
Amortization Schedule	Bullet	Bullet
Form	Registered	Registered
Amount outstanding	INR4.1tn (as of Jun 2015)	INR41tn (as of Jun 2015)
Secondary Market		
Trading	OTC and NSE trading	OTC
Quotation Convention	OTC (yield to 2 decimals); NSE (yield to 4 decimals)	Clean price to 4 decimals
Settlement Period	T+1	T+1
Average Daily Turnover	INR2-3bn	INR20-400bn
Bid/offer spread (0-5Y)	2-3bp	3-5bp, 1bp for liquid benchmark bonds
Bid/offer spread (5Y+)		3-5bp, 1bp for liquid benchmark bonds
Average trade size	INR250mn	INR50mn
Clearing Mechanism	Clearing Corporation of India Ltd (CCIL)	Clearing Corporation of India Ltd (CCIL)
Major players	Primary Dealers, banks	Primary Dealers, banks
Trading hours	9:00-17:00 (Mumbai)	9:00-17:00 (Mumbai)
Bidders	Primary Dealers, banks	Primary Dealers, banks, non-residents
Regulations		
Restrictions on Foreign Investment	Only SEBI registered FII can invest.	Only SEBI registered FII can invest. Investment limit is INR30bn.
Custodian	Local custodian required for foreign investors	Local custodian required for foreign investors
Withholding Tax	Foreigners subject to max 5% withholding tax on interest income	Foreigners subject to max 5% withholding tax on interest income
Capital gains Tax	FIIs exempted from April 2015	FIIs exempted from April 2015
Primary Auctions		
Auction Style	Multiple price auction method	Multiple price auction method for existing issues and yield based auction method for new issuances
Average Issue Size	INR80-150bn	INR10-50bn
Minimum Amount of Tender	INR25,000	INR10,000

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	Baa2/BBB-u/BBB-	Baa2/BBB-u/BBB-
2017	Baa2/BBB-u/BBB-	Baa2/BBB-u/BBB-
2016	Baa3/BBB-u/BBB-	Baa3/BBB-u/BBB-
2015	Baa3/BBB-u/BBB-	Baa3/BBB-u/BBB-
2014	Baa3/BBB-u/BBB-	Baa3/BBB-u/BBB-
2013	Baa3/BBB-u/BBB-	Baa3/BBB-u/BBB-
2012	Baa3/BBB-u/BBB-	Baa3/BBB-u/BBB-
2011	Baa3/BBB-u/BBB-	Baa3/BBB-u/BBB-
2010	Baa3/BBB-/BBB-	Ba1/BBB-/BBB-
2009	Baa3/BBB-/BBB-	Ba2/BBB-/BBB-
2008	Baa3/BBB-/BBB-	Ba2/BBB-/BBB-
2007	Baa3/BBB-/BBB-	Ba2/BBB-/BBB-
2006	Baa3/BB+/BBB-	Ba2/BB+/BBB-
2005	Baa3/BB+/BB+	Ba2/BB+/BB+
2004	Baa3/BB/BB+	Ba2/BB+/BB+
2003	Ba1/BB/BB	Ba2/BB+/BB+
2002	Ba2/BB/BB	Ba2/BB+/BB+
2001	Ba2/BB/BB	Ba2/BBB-/BB+
2000	Ba2/BB/BB+	Ba2/BBB/BBB-

Source: , Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+1
Basis: 30/360
Coupon frequency: Semi-annual

IRS

Fixing: OIS – O/N MIBOR; NDOIS – O/N MIFOR
Coupon frequency: Quarterly, floating/fixed Act/365

CCS

Fixing: 6m USD LIBOR or 6M MIFOR
Coupon frequency: Semi-annual USD day count Act/360, local Act/365

Bloomberg pages

INR Curncy ALLQ<GO> FX rates
OTC INR <GO> - Market monitor
RBIN <GO> - Reserve Bank of India
RBIM <GO> - India government bonds
INMO <GO> - Government borrowing program

Reuters pages

IN/RBI – Reserve Bank of India page
IN/BENCH – Benchmark bonds, bills, fixes
IN/FINMDA – Money market association

Useful official websites

Reserve Bank of India (RBI)
www.rbi.org.in

Ministry of Finance
www.finmin.nic.in

Ministry of Commerce
http://commerce.nic.in/

Ministry of Statistics and Program Implementation
http://mospi.nic.in/Mospi_New/site/home.aspx

Directorate General of Foreign Trade
http://www.dgft.gov.in/

Securities and Exchange Board of India
http://www.sebi.gov.in

Useful market websites

National Stock Exchange of India
http://www.nseindia.com/

The Clearing Corporation of India
www.ccilindia.com

Association of Mutual Funds in India
www.amfiindia.com

Fixed Income Money Markets and Derivatives Association
www.fimmda.org

*Links are to third-party websites, and do not contain BofAML Global Research.

Indonesia

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Overview

Indonesia's local debt market is about US$182.23bn in government and corporate bonds (June 2018 figures, Asian Development Bank data). Indonesia is one of Asia's key local bond markets due to its larger market, higher relative yield and investment grade status. As of June 2018, total outstanding local government bonds were estimated at US$154bn. Despite this, hedging opportunities are restricted because the IRS market is illiquid, leaving short-dated non-deliverable forward FX as a proxy hedge against sudden capital reversal and bond market dislocation.

Bank Indonesia

Objectives

Bank Indonesia (BI) is an independent state institution with a single overarching objective of establishing and maintaining rupiah stability, which has two features: (1) stability against goods and services, reflected via the inflation rate, and (2) stability of the exchange rate against foreign currencies. To achieve its objective, BI has the autonomy to prescribe and implement monetary policy, regulate and safeguard Indonesia's payment system, and regulate and supervise the national banking system. However since 31 December 2013, BI has transferred its banking regulatory and supervisory functions to the new Financial Services Authority (Otoritas Jasa Keuangan – OJK).

BI formally adopted an inflation targeting framework in July 2005, with monetary policy stance reflected in the policy rate (BI rate) at the monthly Board of Governors meeting until August 2016. The BI 7-day repo rate has since replaced the BI rate as the policy rate. BI also conducts monetary controls, such as open market operations in the money market, stipulates minimum reserve requirements, and manages credit and financing. BI manages the nation's foreign exchange reserves. The central bank employs macro-prudential monitoring to oversee and maintain financial system stability.

Legal framework

Bank Indonesia acts stipulate the central bank's functions and duties, as well as policy instruments and options it can use to achieve its objectives and govern the payment and banking systems. The acts also set out the structure and responsibilities of the Board of Governors, as well as regulations for the nomination and appointment of members.

Table 35: Key facts

Name	Bank Indonesia
Founded	1953
Governor	Perry Warjiyo
Board members	6
Autonomous	Yes
Government representative on board	N/A
Terms	5 years; may be re-elected for second term
Inflation target	3.5%±1%
Latest move	Hike by 25bps (15 Aug 2018)

Source: Bank Indonesia, CEIC

Table 36: Key links*

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
Statistics
Reports
Presentations and speeches
Legal framework
English version
Ministry of Finance
National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

Decisions

The Board of Governors presides over Bank Indonesia and consists of a governor, a senior deputy governor, and at least four, but no more than seven, deputy governors. The governor leads the board, while the senior deputy governor acts as the vice-governor. If the governor and senior deputy governor are absent, they appoint one of the deputy governors to preside over the board.

The governor and senior deputy governor are nominated by the president, while deputy governors are nominated by the governor. The nominees are appointed to their designated roles only upon approval by the House of Representatives. A member of the Board of Governors is appointed for a five-year term and can be reappointed for the same office for a second term.

The Board of Governors convenes at least once a month to assess the general monetary policy. Ministers representing the government may attend and have the right to speak at the meeting, but have no voting rights. A meeting is also held at least once a week to evaluate the implementation of monetary policies or to prescribe other policies.

A Board of Governors meeting is lawful if attended by more than half the members of the board. In the event members of the board are unable to reach an agreement, the governor has the authority to make the final decision. To prevent a conflict of interest and maintain BI's independence, members of the Board of Governors are prohibited from having direct or indirect interests in any companies, holding positions concurrently in other entities (unless required by his/her tasks as a member of the board), and holding a position in the management or being a member of a political party.

The current board

Bank Indonesia Governor Perry Warjiyo took office in May 2018. Warjiyo served as the Deputy Governor from 2013 to 2018. He was also the former Assistant Governor for monetary, macro-prudential and international policies after serving as the Executive Director of Bank Indonesia's Department of Economic Research and Monetary Policy. For a brief period from 2007 until 2009, Perry Warjiyo served as the Executive Director of the IMF.

Since Warjiyo's accession as Governor, BI has raised the policy rate by a cumulative 100bp, adding to the 25bp hike in Ex-Governor Martowardojo's last meeting as BI responded to increased pressure on the domestic currency.

Table 37: Board members

Name	Date originally appointed	Current term ends	Term limit ends	Background	Known policy stance
Perry Warjiyo	May 2018	May 2023	May 2028	PhD in monetary and international financial economics, Iowa State University; former deputy & assistant governor of BI, International and Monetary Policy	Pragmatic. Hiked policy rate aggressively since taking charge.
Mirza Adityaswara	Sep 2013	Sep 2018	Sep 2023	Master's in applied finance, Macquarie University; former managing director at Mandiri Securities; and chief economist at Bank Mandiri Group	Expressed the need to maintain stability so as to support growth, while expecting growth to pick up gradually.
Erwin Rijanto	May 2015	May 2020	May 2025	Master's in economics, University of Illinois; former Deputy Head of Governor's Bureau and former Deputy Head of Indonesian Debt Restructuring Agency	…
Sugeng	Jan 2017	Jan 2022	Jan 2027	PhD in economics, Gadjah Mada University; former head of BI office in New York; former expert staff of BI Board of Governors	…
Rosmaya Hadi	Jan 2017	Jan 2022	Jan 2027	Master's in social politics, University of Indonesia; former head of BI regional office of West Java	…
Dody Budi Waluyo	Apr 2018	Apr 2023	Apr 2028	MBA, University of Colorado; former assistant governor and head of economic & monetary policy department	…

Source: Bank Indonesia website

Monetary policy regime and instruments

Bank Indonesia formally adopted its inflation targeting framework in July 2005, before which base money was used as the monetary policy target. Under its inflation targeting framework, BI announces inflation targets for specific periods. The current inflation target range is 3.5%±1% (ie, 2.5-4.5%). Until recently, BI's monetary policy stance was reflected in the setting of the policy rate (BI rate) at the monthly Board of Governors meeting. On 15 April 2016, BI reformulated its policy rate from the BI rate into the 7-day (reverse) repo rate to improve the effectiveness of monetary policy transmission.

The implementation of this new policy rate took effect on 19 August 2016, alongside a symmetrical and narrower interest rate corridor, where the floor (discount facility rate) and ceiling (lending facility rate) will be 75bp below and above the BI 7-day (reverse) repo rate. This enhancement of the monetary operation framework is expected to improve policy signaling with the 7-day (reverse) repo rate becoming the primary reference for interest rates. This is also expected to improve monetary transmission through a stronger impact on short-term money market rates and bank rates.

To maintain adequate liquidity and interest rate stability, BI continues to optimize other monetary operations, namely FASBI, repo O/N and fine tune operations (fine tune contraction and expansion in open market operations). A fine tune operation (FTO) is a transaction, in the context of OMO, to affect banking liquidity in the short term, as necessary. BI also relies on instruments such as regulating credit or financing to achieve its monetary policy objectives.

Exchange rate regime and instruments

Indonesia has followed a managed float exchange rate regime since 1999. BI seeks to maintain a stable rupiah to support export growth. The IDR has displayed high beta characteristics relative to other Asian currencies from time to time.

BI intervenes in the FX market occasionally to check uneven variations in the exchange rate. To do that, the central bank has accumulated substantial exchange reserves. BI drew down on reserves to defend the rupiah during the 2013 taper tantrum, causing FX reserves to fall below the US$100bn threshold in 2H13. BI rebuilt its reserves position to US$115bn by March 2015, allowing the rupiah to weaken and via USD bond auctions. However, global volatility (including the RMB devaluation and Fed hike episodes) over the last year exerted additional pressure on the currency. The currency has now stabilized at the IDR14,600/USD level. FX reserves have decreased gradually over 2018 and stood at US$118bn in July 2018.

Credit regulation functions

Bank Indonesia determines procedures for bank establishment and licensing, and has

Table 38: Meetings and releases in 2018

	Monetary policy meeting	Monetary policy minutes
Jan	Wed,17 Jan – Thu, 18 Jan	Thu, 18 Jan
Feb	Wed, 14 Feb – Thu, 15 Feb	Thu, 15 Feb
Mar	Wed, 21 Mar – Thu, 22 Mar	Thu, 22 Mar
Apr	Wed, 18 Apr – Thu, 19 Apr	Thu, 19 Apr
May	Wed, 16 May – Thu, 17 May	Thu, 17 May
May	Wed, 30 May	Wed, 30 May
Jun	Thur, 28 Jun – Fri, 29 Jun	Fri, 29 Jun
Jul	Wed, 18 Jul – Thu, 19 Jul	Thu, 19 Jul
Aug	Wed, 15 Aug – Thu, 16 Aug	Thu, 16 Aug
Sep	Wed, 26 Sep – Thu, 27 Sep	Thu, 27 Sep
Oct	Tue, 22 Oct – Wed, 23 Oct	Wed, 23 Oct
Nov	Wed, 14 Nov – Thu, 15 Nov	Thu, 15 Nov
Dec	Wed, 19 Dec – Thu, 20 Dec	Thu, 20 Dec

Source: Bank Indonesia

the authority to regulate and establish regulations governing banking operations and activities. It coordinates closely with the Capital Market and Financial Institution Supervisory Board (Bapepam-LK) as the non-bank financial institution supervisory body to maintain overall financial system stability. Bapepam-LK is responsible for supervising and regulating capital markets, non-bank financial institutions, general and life insurers, and pension funds.

In 2012, BI issued Regulation No.14/18/PBI/2012, concerning the provision of minimum capital for commercial banks, in accordance with their risk profiles. Banks with a risk profile rating of 1 need to maintain minimum capital amounting to 8% of risk weighted assets (RWA), while those with a higher risk profile rating of 4 or 5 will have to maintain minimum capital of 11-14% of RWA.

To stimulate domestic demand in the midst of a weak global economy, BI recently, in June 2016, also eased the macro-prudential policy. It relaxed the loan-to-value (LTV) ratio and financing-to-value (FTV) ratio to 85% from 80% for a second mortgage loan and to 80% from 70% for a third mortgage loan for an apartment/home with a floor area of 22-70m^2. Further slight loosening of LTV was done in June 2018.

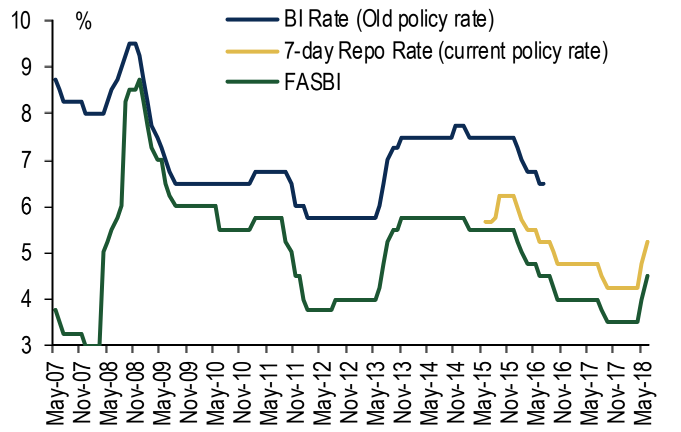
Current policy stance

Bank Indonesia is expected to remain hawkish as the pressure on the IDR is expected to continue. While the policy rate has already been hiked by as much as 125bp from 4.25% to 5.50%, in just over three months, further hikes are expected this year and the next, in line with US Fed's rate hikes. The aggressive tightening stance comes as the economy remains lukewarm and inflation well within the policy target.

Meetings, data and information dissemination

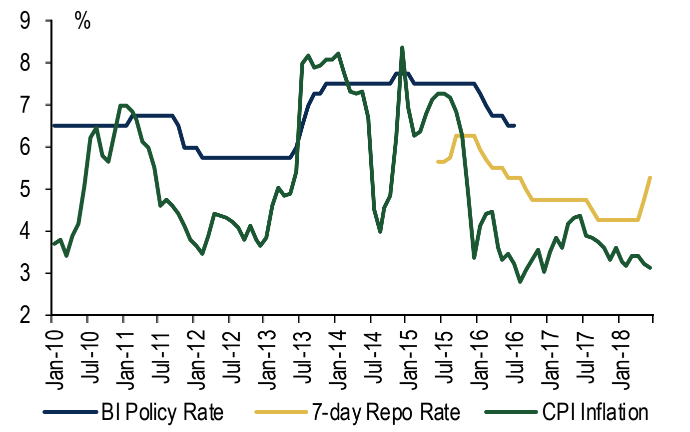
The Board of Governors meeting takes place monthly, usually in the third week of the month. A press release is published after each meeting. Conference calls are held in some months, usually at 6pm (HKT) on the day. BI publishes its Monetary Policy Review within a week (in local language only; English version is published with a delay) of the Board of Governors meeting. The publication provides a deep-dive into BI's latest evaluation of monetary conditions. A shorter policy statement is published immediately after the policy meeting.

Chart 28: BI policy rate and overnight deposit facility rate



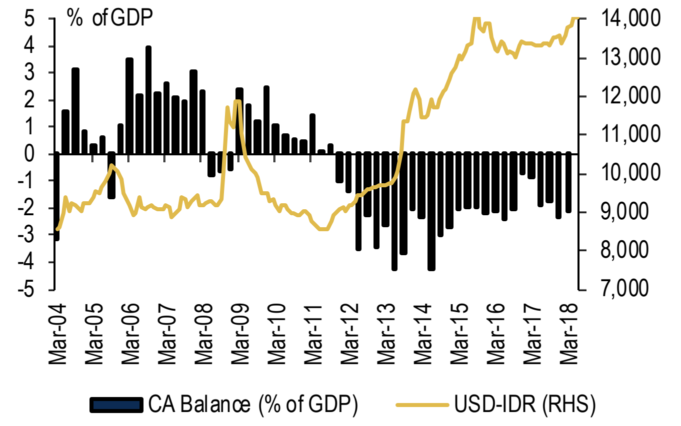
Source: Bloomberg, CEIC

Chart 29: BI policy rate and CPI inflation



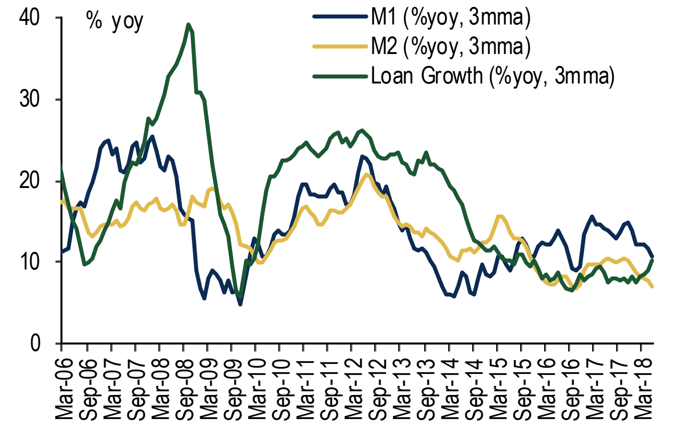
Source: CEIC

Chart 30: Current account balance and FX rate



Source: BofA Merrill Lynch Global Research, CEIC

Chart 31: Money supply and loan growth



Source: BofA Merrill Lynch Global Research, CEIC

Fiscal policy and debt issuance

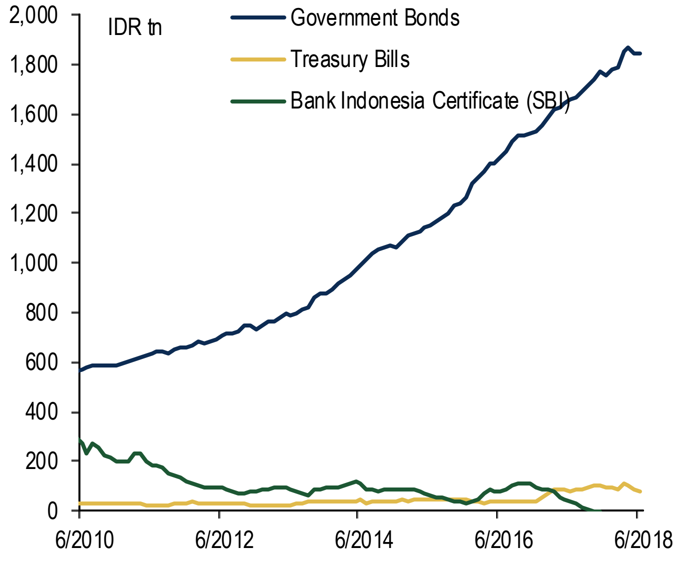
Indonesia's fiscal deficit for 2017 came in at 2.5%. Plunging global oil prices have been a stroke of good luck for President Joko "Jokowi" Widodo, providing ample fiscal room to expand infrastructure investment by cutting back energy subsidies. With the appointment of Sri Mulyani Indrawait as the Minister of Finance in July 2016, fiscal policy and budget credibility has been enhanced significantly. This improvement eventually led S&P to upgrade Indonesia's sovereign rating to investment grade in May 2017. For 2018, Indonesia penciled in a fiscal deficit target of 2.19% of GDP, which looks very much achievable given the Jan-Jul run rate.

Bond market

Indonesia's local government bond market is estimated at US$154bn in outstanding bonds (June 2018 figures, ADB data). There are four broad categories of bonds: Treasury bonds, recap bonds (variable and fixed), Treasury bills (SBIs) and retail bonds.

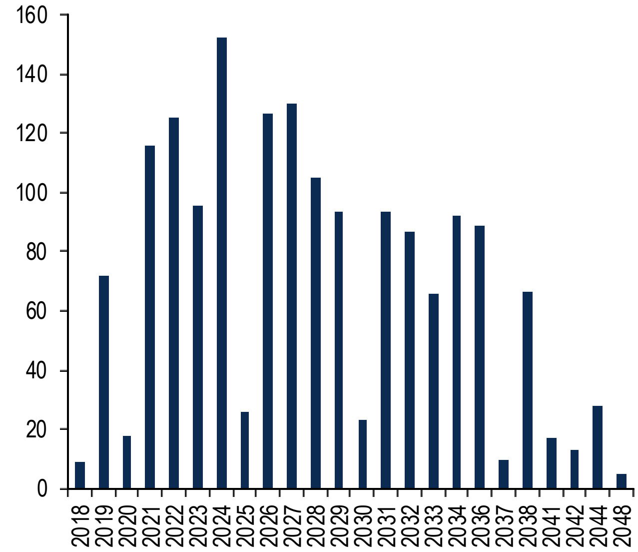
Bond trading occurs through two key platforms: (1) the more liquid Indonesian Government Securities Trading System (IGSTS) provided by the Indonesia Stock Exchange and (2) the Fixed Income Trading System (FITS) via the Surabaya Stock Exchange.

Chart 32: Outstanding Indonesia securities



Source: CEIC

Chart 33: Maturity profile of Indonesia government bonds (IDR tn)



Source: Bloomberg

Apart from retail bonds, which are limited to Indonesian retail investors in the primary market, foreigners are allowed to participate in the primary and secondary markets of the other debt papers.

The money market. Open market operation tools such as SBIs, term deposits, repo and reverse repo, as well as standing facilities such as the deposit facility, lending facility and repo SBI, make up the money market. The shortest money market instrument in terms of tenor is interbank call money, which is announced twice a day for liquidity measures. There are similar instruments in the Sharia version.

Bank Indonesia has now stopped issuing SBI bills and instead issuing SDBI for liquidity operations. SDBI are essentially SBI bills that foreigners cannot access.

SBI bills. Sertifikat Bank Indonesia is the central bank's policy instrument for absorbing excess liquidity in the financial markets. In a rising interest rate environment and recovering confidence in the rupiah, SBIs became a very popular carry instrument for foreign investors also wanting to benefit from a strengthening rupiah. In 2015, BI took issue with the distortion to its policy instrument, extended the holding period and stopped issuing 3m and 6m SBIs. However, BI has restarted issuance of SBI Bills since July 2018.

Treasury bills. SPNs were introduced in 2007 and initially planned to be an alternative investment instrument to SBIs. The main difference is the issuer. SBIs are central bank papers, while SPNs are fiscal tools used for government funding. SPNs are issued in 3m, 6m and 1y tenors.

Treasury bonds. Also known as Surat Utang Negara (SUNs), Treasury bonds are issued by the Ministry of Finance to fund the government's budget deficit. However, these bonds originated from recapitalization bonds, which were issued during the Asian financial crisis to 35 troubled banks. There are two types of Treasury bonds: fixed-rate and variable. Maturities range from bills (3, 6 and 9 months) to bonds (1, 3, 5, 7, 10, 15, 20 and 30 years).

Corporate debt. The corporate debt market is small but growing. Bond issuance is limited primarily to domestic entities. It consists of two types of instrument: state agency bonds and private corporate bonds issued by state-owned companies and domestic private companies, respectively. The maturity range for both is typically 5-8 years. Most bonds issued by private corporations are listed on the Indonesia Stock Exchange (IDX). The majority of secondary market trading is done via the Fixed Income Trading System bond trading platform. Foreign investors are allowed to participate in the corporate debt market with no investment limit.

Auction and placement mechanism. Government bond auctions can be competitive, noncompetitive or a combination of both. Amounts to be allotted by competitive and noncompetitive bids are announced prior to auction. If competitive or noncompetitive bids exceed or fall below target amounts, the split may be adjusted to accommodate demand.

The Ministry of Finance makes prior announcements on pricing method, multiple or uniform. Under the multiple pricing method, allotments are at the price submitted by the individual bidder. Under the uniform pricing method, allotments are at the weighted-average bidding price.

Auction dates are announced by the Directorate General of Budget Financing and Risk Management. Indicative auction dates for bonds are announced about a month ahead of time, but details are announced a week prior to the auction date. Usually, government bonds are auctioned on Tuesdays.

Derivatives market

Interest rate swaps. The market is illiquid and underdeveloped and does not represent a viable hedging alternative for investors. Efforts are currently underway to develop an OIS market with BI introducing IndONIA as a reference for short-term interest rate transactions.

FX market

The Indonesian rupiah is not fully convertible and can only be tradable on a non-deliverable basis in the offshore market. Indonesia has been following a managed float exchange rate regime since 1999. Bank Indonesia seeks to maintain a stable rupiah in an effort to anchor inflation expectations and credibility. The currency has been under depreciating pressure and from time to time has displayed high beta characteristics relative to other Asian currencies.

Bank Indonesia intervenes occasionally in the foreign exchange market to check uneven variations in the exchange rate. To do that, it has been accumulating substantial exchange reserves to achieve stability. Regulations are also in place to curb speculative capital flows that may cause excessive currency volatility.

Table 39: Vital statistics and characteristics of Indonesia's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
IDR Onshore						
Spot	IDR Spot	USD500mn	USD3-10mn	IDR5-20	IDR=	Proper documentation required. Trading hours: 0800-1600 (Jakarta)
Forwards	IDR Forwards	USD400mn	USD5-20mn	IDR5-50	IDRF=	-NA
IDR Offshore						
Forwards	NDF	USD600-800mn	USD5-10mn	IDR5-30	PNDF PNDG	IDR is non-deliverable currency. Offshore entities can access the market through NDF. USD settled NDF on IDR are available to 10y and are liquid up to 2y.
Options	NDO	USD100-150mn	USD10-30mn	0.6-1.5 vol	TTDE	Dollar settled NDO on IDR are available to 5y and are liquid up to 1y

Source: Reuters

Investor base

Major investors into the Indonesian debt market consist of banks, foreigners and pension funds. Foreign holding of Indonesian government bonds (37.8% as of end-June

2018) is more than that of banks (21%). Foreign investors have been dominated by real money accounts, which allocate around 80% of the holdings in tenors beyond five years.

The banks' holding share has declined steadily from over 80% 10 years ago to 21% now, as the original use of recapitalization bonds has faded and banks have turned to lending as bond yields have become less economically attractive. Banks can be divided broadly into two categories: state and private. Private banks tend to have a more even split between their investment and trading bond accounts, which makes them more active in the secondary market. State banks have a much higher allocation (above 70%) of bond holdings in their investment accounts, which makes them more passive as buy and hold investors, and more active in the primary market.

Insurance companies are dominated by Jamsostek and Taspen, the two state bodies. Their focus is largely in the back-end, beyond 10y tenors, and they play an active role in the primary market, adopting a buy-to-hold investment policy.

Table 40: Ownership breakdown of Indonesian government bonds (as of June 2018)

	IDR (tn)	as % of Total
Total Govt Bond Outstanding	**2197**	
Banks	461	21%
Govt Institutions	210	10%
Mutual Fund	111	5%
Insurance Company	173	8%
Pension Fund	219	10%
Individual	62	3%
Others	130	6%
Total Local Holders	**1367**	**62%**
Foreign Holders	**830**	**38%**

Source: BofA Merrill Lynch Global Research, Indonesia DMO

Rules, regulations capital controls and taxation

The rules and regulations for the bond market are governed mainly by BI and BAPEPAM, the Capital Market and the Financial Institution Supervisory Board under the Ministry of Finance. BAPEPAM is responsible for granting licenses, setting rules and regulations, supervising market participants, and establishing capital market accounting standards. It has the authority to issue government debt securities with prior approval from the People's Legislative Assembly. Bank Indonesia stipulates and administers regulations regarding the issuance, sale and purchase of these debt instruments. Generally, there are no restrictions on foreign investors owning government or corporate bonds.

However, in 2002, BI introduced measures restricting Indonesian banks from conducting the following IDR transactions with nonresidents:

- Transferring IDR to offshore banks for any reason other than payments related to economic activities.
- Providing credit, overdrafts or fund placements in IDR.
- Purchasing securities in IDR issued by nonresidents.
- Inter-office transactions in rupiah.
- Equity participation in IDR.
- Interest and capital gains on bonds coursed through the Indonesia Stock Exchange are subject to a single final withholding tax of 20%. Interest and capital gains from bond transactions not reported to the IDX are subject to general income taxes (30% maximum) after a preliminary withholding tax of 15% is deducted. Both the interest income and capital gain tax liabilities can be mitigated contingent on tax treaties with Indonesia. Interest income tax of 20% or tax treaty rates is applicable in the case of SBI and T-bills.

Clearing and settlement

The settlement is governed by the Capital Market Law and the BAPEPAM's regulations. The settlement of all government bonds is scripless and conducted through the Scripless Securities Settlement System (BI-SSSS). Transactions are settled via delivery of securities. PT Kustodian Sentral Efek Indonesia (KSEI) conducts the clearing and settlement of corporate bonds through the Fixed Income Trading System. Settlement in the derivatives market is on a cash basis. The Indonesian Clearing and Guarantee Corporation (KPEI) acts as the counterparty for settling and liquidating an open position upon contract maturity.

Table 41: Summary of Indonesia bond markets and products

Instrument	**Sovereign bonds**	**Fixed rate bonds (FR)**	**Sertifikat Bank Indonesia (SBI; T-bills)**
Issuer	Republic of Indonesia	Republic of Indonesia	Bank Indonesia
Currency	IDR	IDR	IDR
Principal			IDR100,000 (par)
Tenor	2-30 years	2-30 years	SBI (9m); T-bills (3m, 1y)
Interest rate/coupon	Fixed	Fixed	Issued at discount
Coupon Payments	Semiannual	Semiannual	Zero Coupon
Day Count Calculation	Actual/Actual	Actual/Actual	Actual/360
Amortization Schedule	Bullet	Bullet	Bullet
Form	Scripless	Scripless	Scripless
Amount outstanding (Mar 2015)	IDR1,257tn		IDR96tn
Secondary Market			
Trading	OTC or Indonesian Government Securities Trading System (IGSTS) provided by the IDX.	OTC or Indonesian Government Securities Trading System (IGSTS) provided by the IDX.	OTC
Quotation Convention	Price	Yield	Yield
Settlement Period	Typically T+2 or T+3	Typically T+3 (or negotiated)	Typically T+3 (or negotiated)
Average Daily Turnover	USD200-500mn		
Bid/offer spread (0-5Y)	2-7bp	2-3bp	
Bid/offer spread (5Y+)	2-5bp	3bp	
Average trade size	USD1-2mn		
Clearing Mechanism	Bank Indonesia Scripless Securities Settlement System (BI-SSS); DVP Settlement	Bank Indonesia Scripless Securities Settlement System (BI-SSS); DVP Settlement	Bank Indonesia Scripless Securities Settlement System (BI-SSS); DVP Settlement
Major investors	Banks, securities companies, money market brokers	Banks, securities companies, money market brokers	Banks, securities companies, money market brokers
Trading hours	Mon-Thu: 9:30-noon and 13:30-17:00 Fri: 9:30-11:00 and 2:00-5:00 (Jakarta time)	Mon-Thu: 9:30-noon and 13:30-17:00 Fri: 9:30-11:00 and 2:00-5:00 (Jakarta time)	Mon-Thu: 9:30-noon and 13:30-17:00 Fri: 9:30-11:00 and 2:00-5:00 (Jakarta time)
Bidders	Auction Participants. Retail investors should submit applications through Auction Participants designated by the Ministry of Finance	Participating banks	Auction Participants designated by the Ministry of Finance
Regulations			
Restrictions on Foreign Investment	Not Restricted	Not Restricted	Not Restricted
Custodian	Local custodian required for individual investors	Local custodian required for individual investors	Local custodian required for individual investors
Withholding Tax	Interest and capital gains on bonds coursed through the Indonesia Stock Exchange (IDX) are subject to a single, final withholding tax of 20%.	Interest and capital gains on bonds coursed through the Indonesia Stock Exchange (IDX) are subject to a single, final withholding tax of 20%.	Interest and capital gains on bonds coursed through the Indonesia Stock Exchange (IDX) are subject to a single, final withholding tax of 20%.
Capital gains Tax	Interest and capital gains from bond transactions not reported to the IDX are subject to general income taxes (30% maximum) after a preliminary withholding tax of 15% is deducted.	Interest and capital gains from bond transactions not reported to the IDX are subject to general income taxes (30% maximum) after a preliminary withholding tax of 15% is deducted.	Interest income tax of 20%, or tax treaty rates.
Entry/Exit Tax	None	None	None
Primary Auctions			
Auction Style	Competitive tender using multiple price method or noncompetitive bid at weighted average competitive price.	Private placement by Government to banks participating in recapitalization.	Dutch-style yield auction, in which successful bidders are allotted securities at a uniform yield.
Average Issue Size	IDR7tn	IDR7tn	
Minimum Amount of Tender	IDR1mn	IDR1mn	IDR50mn

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	Baa2/BBB-/BBB	Baa2/BBB-/BBB
2017	Baa3/BBB-/BBB	Baa3/BBB-/BBB-
2016	Baa3/BB+/BBB-	Baa3/BB+/BBB-
2015	Baa3/BB+/BBB-	Baa3/BB+/BBB-
2014	Baa3/BB+/BBB-	Baa3/BB+/BBB-
2013	Baa3/BB+/BBB-	Baa3/BB+/BBB-
2012	Baa3/BB+/BBB-	Baa3/BB+/BBB-
2011	Ba1/BB/BBB-	Ba1/BB+/BBB-
2010	Ba2/BB-/BB+	Ba2/BB/BB+
2009	Ba2/BB-/BB	Ba2/BB-/BB
2008	Ba3/BB-/BB	Ba3/BB-/BB
2007	Ba3/BB-/BB-	Ba3/BB-/BB-
2006	B1/B+/BB-	B1/BB-/BB-
2005	B2/B+/BB-	B2/B+/BB-
2004	B2/B/B+	B2/B+/
2003	B3/CCC+/B+	B2/B/
2002	B3/CCC/B	B3/CCC+/
2001	B3/B-/B-	B3/CCC/

Source: , Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: Variable, usually T+2 or T+3
Basis: Act/365
Coupon frequency: Semi-annual or quarterly

CCS

Fixing: 6m USD LIBOR
Coupon frequency: Semi-annual, USD day count Act/360, local Act/360

Bloomberg pages

IDR Curncy ALLQ<GO> FX rates
OTC IDR<GO> – Market monitor
EXNI<GO> – Local bond broker page
BIJA<GO> - Bank Indonesia FX and MM page
BIPU<GO> - Bank Indonesia rates and bonds page
JIBO<GO> – Jakarta Interbank Borrowing page

Reuters pages

BIJA – Bank Indonesia page
BIFA – Bank Indonesia FX reserves
BILINK – Bank Indonesia web links

Useful official websites

Bank Indonesia (BI)
www.bi.go.id

Ministry of Finance
www.depkeu.go.id

Ministry of Industry and Trade
www.kemenperin.go.id

Debt Management Office
http://www.dmo.or.id/en/index.php?section=1

Capital Market and Financial Institution Supervisory Board
www.bapepam.go.id/

Indonesia State Pension Fund
www.jamsostek.co.id/

Taspen Employee Pension Fund
http://www.taspen.com/

Indonesia Deposit Insurance Corporation
http://www.lps.go.id/

Useful market websites

Indonesia Stock Exchange
www.jsx.co.id

Indonesia Exchange
www.idx.co.id

*Links are to third-party websites, and do not contain BofAML Global Research.

Korea

Ronald Man
Merrill Lynch (Hong Kong)

Kathleen Oh
Merrill Lynch (Hong Kong)

Overview

The size of Korea's local debt market, government and corporate, was USD2.06tn in March 2018. Korea's swap and bond market is one of the most liquid and well developed in the region. The 3y Korea Treasury Bonds (KTB) futures have high liquidity and are exempt from withholding tax, which is attractive for foreign investors, who are large investors in this product. Net issuance of KTB fell to KRW29.8tn in 2017 from KRW31.8tn in 2016. The KRW3.9tn supplementary budget passed in May 2018 was funded by the 2017 fiscal account and public funds' surpluses, and would not require additional KTB issuance.

Bank of Korea

Objectives

The Bank of Korea (BoK) formulates and implements monetary and credit policies to pursue the twin objectives of price and financial stability. Price stability from a medium-term perspective (inflation targeting) has been the main focus of the BoK's monetary policy decisions, while financial stability has been regaining importance in its policy deliberation. The BoK sets an explicit inflation target on a three-year basis in consultation with the government, and implements monetary policy to achieve this target by using the base rate (7-day repo rate) as its policy rate.

The BoK performs the typical functions of a central bank, issuing banknotes and coins, formulating and implementing monetary and credit policies, and serving as the bankers' and the government's bank. It also operates and oversees payment and settlement systems and manages the nation's foreign exchange reserves. It conducts some supervisory functions for financial institutions as well.

Legal framework

The BoK was established on 12 June 1950 under the Bank of Korea Act, which establishes the legal ground for the central bank's formation and operation, and sets out the bank's purpose, powers, duties and organizational structure.

The act has been amended 11 times since its enactment in May 1950. In the sixth amendment in December 1997, the BoK's objectives were changed from stabilizing monetary value and maintaining the soundness of the banking and credit system to the single objective of maintaining price stability. In accordance with the revision, the BoK introduced an inflation targeting regime in 1998, which it has operated since. Also, the revision explicitly stipulated neutral formulation and autonomous implementation of monetary and credit policies, and the central bank's independence.

Table 42: Key facts

Name	The Bank of Korea
Founded	12 June 1950
Governor	Juyeol Lee
Board members	7
Autonomous	Yes
Government representative on board	None*
Terms	4 years, except Senior Deputy Governor (3 years); consecutive reappointment possible
Inflation target	2% (2016-2018)
Latest move	25bp rate hike to 1.50% (30 Nov 2017)

*The deputy minister of the MoSF has the right to speak at the MPC meeting.
Source: Bank of Korea

Table 43: Key links*

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
Statistics
Reports
Presentations and speeches
Legal framework
Ministry of Finance
National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

The act was revised in 2012 to include personnel hearing by the national assembly before a new governor is appointed by the president. The first hearing in March 2014 for the present governor and the second hearing in March 2018 for his reappointment proceeded smoothly. The latest revision on terms of the board members in March 2018 specifies that in the case of a delay in appointing a new member, the term of the new member will be deemed to start immediately upon completion of the predecessor's term as opposed to the previous practice of overlooking the period before the new member starts in the office as part of his/her service period. This is to promote effective and timely rotation of service by each member.

Decisions

The Monetary Policy Committee (MPC) is the policy-making body of the BoK responsible for formulating monetary and credit policies and making major decisions concerning the operation of the central bank. Resolutions at an MPC meeting are adopted by a simple majority with a quorum of five members. The board members shun media contact, except for the governor who frequently speaks for the central bank, including in the post-MPC press conference.

The MPC consists of seven members representing various groups in the national economy. The governor, who serves as MPC chairman concurrently, is appointed by the president following deliberation by the State Council and a Personnel Hearing in the National Assembly. The senior deputy governor is appointed by the president on the recommendation of the governor. Five other members are appointed by the president on recommendations by the Ministry of Strategy and Finance (MoSF), the governor of the BoK, the chairman of the Financial Services Commission (FSC), the chairman of the Korea Chamber of Commerce and Industry, and the chairman of the Korea Federation of Banks. The members serve on a full-time basis, and no member may be discharged from office against his or her will.

The current board

The current MPC chairman and BoK governor is Juyeol Lee. He joined the BoK in 1977 and left it in 2012 after serving as senior deputy governor as his last post. He worked as an advisor at the Hana Institute of Finance and as a distinguished professor in Yonsei University in 2012-14. He earned a master's degree in economics from Pennsylvania State University.

Governor Lee was expected to be a neutral figure in the dove-hawk spectrum, albeit with an emphasis on inflation concerns following the conservative central bank tradition, when he took the office. Although still viewed as hawkish relative to market sentiment, he has been seen complaisant to the market expectations. His term ends on 31 March

Table 44: Board members

Name	Date originally appointed	Current term ends	Term limit ends	Background	Known policy stance
Juyeol Lee, Governor	Apr 2014	Mar 2022	Mar 2022	Master's in economics, Pennsylvania State University; Former senior deputy governor of BoK	Broadly neutral, with emphasis on inflation by BoK tradition, and thus mildly hawkish relative to market sentiment.
Myun Shik Yoon, Senior Deputy Governor	Aug 2017	Aug 2020	Aug 2020	Masters of Business Administration, University of Colorado, Former deputy governor of BoK	No clear preferences expressed, but expected to be mildly hawkish based on his public comments
Dong Chul Cho	Apr 2016	Apr 2020		PhD in economics, University of Wisconsin-Madison; Former chief economist at KDI	Viewed as dovish based on his dissent vote against a rate hike in favor of no change at November 2017 meeting
Seung Beom Ko	Apr 2016	Apr 2020		PhD in economics, American University; Former standing commissioner at FSC	Viewed as dovish based on previous careers at FSC and MoSF
Il Houng Lee	Apr 2016	Apr 2020		PhD in economics, Warwick University; Former president of KIEP.	Viewed as hawkish based on his previous comments and his dissent vote in favor of a rate hike at July 2018 meeting
In Seok Shin	Apr 2016	Apr 2020		PhD in economics, Stanford University; Former president of KCMI	Viewed as dovish based on his previous comments prior to joining the MPC
Jiwon Lim	May 2018	May 2022		PhD in economics, University of North Carolina at Chapel Hill; Former chief Korea economist at JP Morgan	No publicly known position yet, but viewed to focus on market communication based on her previous career at a global bank

Source: BoK

2022 upon his reappointment in April 2018.

On 21 April 2016, four MPC members began their four-year term during the period when the previous administration promoted growth-driven economic policy. Three of the four then-new members were deemed to show dovish or neutral-to-dovish stance.

Seung Beom Ko was recommended by the chairman of the FSC, Jong Yong Yim, and is considered to take a more dovish stance in light of his past careers at the FSC and the MoSF and while at the FSC, his policy position in favor of deregulation over DTI to avoid a hard-landing in the housing market in 2012.

Dong Chul Cho, who was recommended by the MoSF, is viewed to take a dovish stance. Cho voted against a rate hike decision from 1.25% to 1.50% in November 2017 as a dissent in favor of no change. He is known to support a growth-driven policy stance. He previously served as a chief economist at the Korea Development Institute (KDI), a government think-tank, when the pro-growth administration was in place.

Il Houng Lee, who was recommended by BoK Governor Juyeol Lee, is viewed as taking a more hawkish stance. Before appointment as a MPC member, he expressed his views about the limitations of a low-interest rate policy in boosting economic growth without structural reforms. He said the BoK would eventually have to follow the footsteps of the Fed when the Fed continues its rate hikes. More recently, he voted in favor of a rate hike at the July 2018 MPC meeting against the no-change decision.

Other board members include In Seok Shin, who was recommended by the Korea Chamber of Commerce and Industry and is seen more or less dovish by the market. The newest member, Jiwon Lim, who joined after Jun-ho Ham in May 2018, recommended by the Korea Federation of Banks, has yet to express a clear policy stance while she is viewed to focus on market communication based on her previous career at a sell-side investment bank.

Monetary policy regime and instruments

The BoK sets an explicit inflation target on a three-year basis in consultation with the government, and implements monetary policy to achieve this target by using the base rate (7-day repo rate) as its policy rate. The target indicator has shifted between the headline Consumer Price Index (CPI) inflation rate and the core inflation rate in the past. Currently, the year-over-year headline CPI inflation rate is used as the target indicator, and the single-point inflation target is set at 2% for 2016-18.

The base rate is the BoK's operational target and is the reference rate the BoK uses in repo transactions. The MPC sets the policy rate at its meeting (beginning in 2017, it holds the MPC meeting every six to seven weeks instead of monthly meetings (ie, eight meetings in a year) and the BoK steers the overnight call rate toward the announced policy rate level, using its policy instruments such as open-market operations (OMO).

Table 45: Meeting and release schedules in 2018

	Monetary policy meeting	Monetary policy minutes	Economic report to Congress
Jan	Thursday, 18 Jan	Tuesday, 6 Feb	
Feb	Thursday, 27 Feb		Monetary Policy Report
Mar		Tuesday, 20 Mar	
Apr	Thursday, 12 Apr		Monetary Policy Report
May	Thursday, 24 May	Tuesday, 2 May	
Jun		Tuesday, 12 Jun	Financial Stability Report
Jul	Thursday, 12 Jul		Monetary Policy Report
Aug	Thursday, 31 Aug	Tuesday, 31 Jul	
Sep		Tuesday, 18 Sep	
Oct	Thursday, 18 Oct		Monetary Policy Report
Nov	Thursday, 30 Nov	Tuesday, 6 Nov	
Dec		Tuesday, 18 Dec	Financial Stability Report

Source: BoK

Lending and deposit facilities and reserve requirements are additional monetary policy instruments available to the central bank.

Exchange rate regime and instruments

With the enactment of the Foreign Exchange Control Act in 1961 and the first revision of the Bank of Korea Act, some functions, including foreign exchange policy formulation, were transferred to the government. As a result, the BoK came to pursue only certain kinds of foreign exchange business approved by the MoSF.

The BoK is authorized to formulate prudential regulations on foreign exchange bank funding and foreign currency funds use; to handle overall management of the foreign exchange market; to review and make *ex post facto* administration of foreign exchange transactions; to operate the Foreign Exchange Information System; and to conduct joint examinations of foreign exchange banks.

The BoK maintains the principle that the exchange rate should be determined by the interaction of the demand for and supply of foreign exchange. However, the bank has been known to accumulate large amounts of international reserves and, on occasion under the MoSF's directive, use reserves to smooth any large currency fluctuations not caused by underlying economic fundamentals. In order to promote foreign exchange market transparency, the MoSF announced its intention to publish net transaction data of foreign exchange intervention in May 2018. The ministry plans to publish the first report in March 2019 (semi-annually on 2H18 and 1H19; quarterly from 3Q19).

Credit regulation functions

The BoK operates lending and deposit facilities to control the availability of banking institution funds. The bank's lending and deposit facilities consist of aggregate credit ceiling loans, liquidity adjustment loans and deposits, intraday overdrafts, and special loans. Currently, it is operating a bank intermediated lending facility to provide subsidized loans to promising SMEs and start-ups that meet pre-specified qualifications.

The BoK also imposes reserve requirements on deposits and other liabilities of banking institutions. This system was introduced to protect depositors, but it can be used, if considered necessary, to control the funds available to banks through a reserve requirement ratio adjustment as well. Should an institution's reserves fall short of its legal reserve requirements, which are computed monthly, the institution must pay a penalty of 2% of the amount of the average deficiency during the applicable period.

Current policy stance

The BoK shifted its policy stance to a gradual removal of monetary accommodativeness since end-2017 from previous two years of monetary easing. After making five rate cuts to the policy rate to a new record-low level of 1.25% (last one at the MPC meeting on 9 June 2016), the BoK signaled a shift to its policy focus to normalization and intention to remove financial imbalance by making a rate hike in November 2017. Expectation on gradual but further rate hike looms in 2018 while higher external uncertainties from the global trade front pose risks. In view of one hawkish member – Il Houng Lee – voting for a rate hike in July MPC meeting based on constructive macro data and concern on increasing risks to financial imbalance, we confirmed the BoK's determination for a rate normalization sooner than later. For now, we expect a gradual rate hike scenario with one hike each year in 2018 and 2019.

Meetings, data and information dissemination

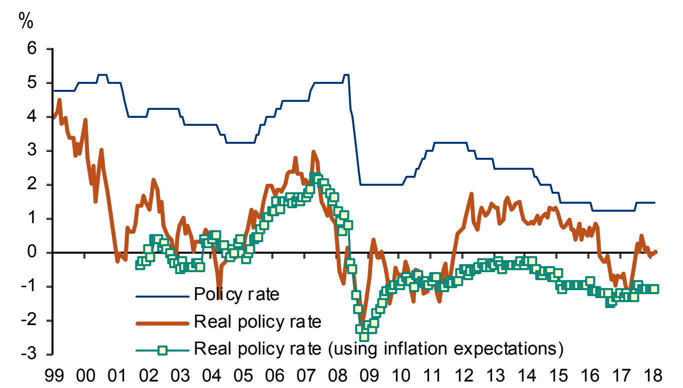
The MPC meetings consist of regular and extraordinary meetings. Regular meetings are held on the second and fourth Thursdays of each month. An extraordinary meeting can be called by the chairman when he/she deems it necessary, or when at least two members request such a meeting. The dates of the MPC meetings for monetary policy decision making (eg, the base rate) for this year are in Table 45. Immediately after the main meeting, the governor holds a press conference to explain the details of the committee's decision. The minutes are released around three weeks after the meeting. Starting 2017, the MPC meetings for monetary policy decision are held eight times a year instead of every month.

The Bank of Korea Act stipulates the central bank prepares and submits reports to the National Assembly on the implementation of its monetary and credit policies (Monetary Policy Report) and macro-financial stability conditions (Financial Stability Report) at least twice a year. Beginning 2016, the Monetary Policy Report has been published four times a year (vs two times a year previously). The BoK is required to publish an annual report describing its business status, monetary policy and the government's foreign exchange policy. The BoK publishes a variety of business reports and economic analyses.

Market drivers

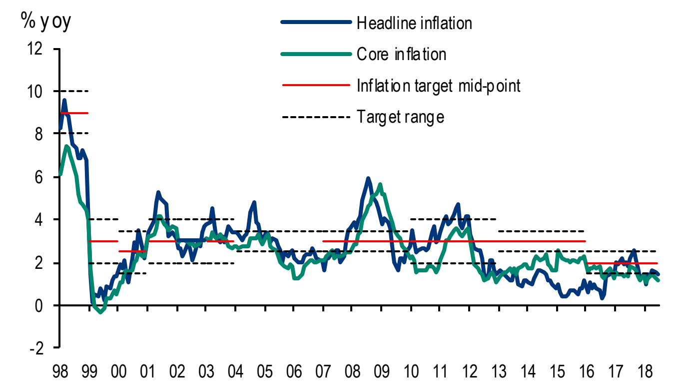
The key market drivers are export growth, CPI inflation, industrial production and GDP growth. The inflation target is set over a mid-term horizon, which gives the BoK considerable flexibility in conducting policy. The central bank takes into account of the inflation target and the growth outlook when conducting policy. South Korea is a very open economy, so global developments feature and the exchange rate are considerations in the BoK's monetary policy decision-making process. The BoK has acted in the FX market to reduce excessive short-term volatility.

Chart 34: Nominal and real rate



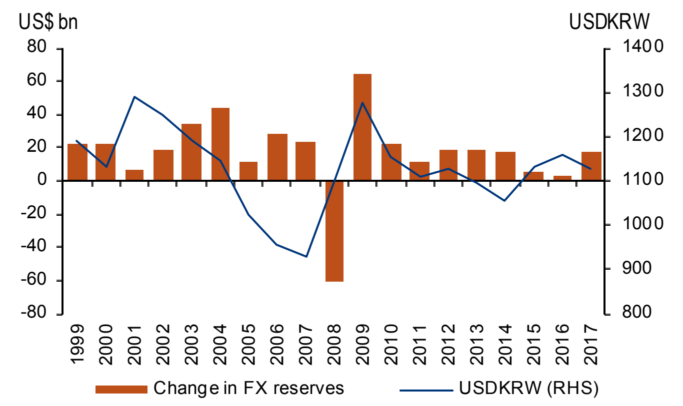
Source: BofA Merrill Lynch Global Research, BoK, CEIC

Chart 35: Inflation targets and ranges



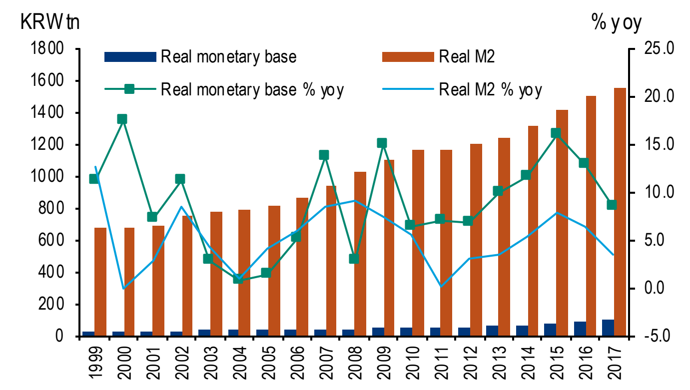
Source: BofA Merrill Lynch Global Research, BoK, CEIC

Chart 36: FX rate and reserves



Source: BofA Merrill Lynch Global Research, BoK, CEIC

Chart 37: Monetary aggregates



*Real money stock data are deflated by Consumer Price Index with base year of 1998.
Source: BofA Merrill Lynch Global Research, BoK, CEIC

Bond market

Korea has the one of the largest local government bond markets in Asia. As of April 2018, the outstanding value of Korean Treasury Bonds (KTBs) was KRW578tn (USD516bn) and the outstanding value of monetary stabilization bonds (MSBs) was KRW174tn (USD156bn). Foreign investors hold 14% of outstanding KTBs and 12% of MSBs outstanding as of April 2018. In January 2011, the government re-imposed a 14% withholding tax on interest income and a 20% capital gain tax on foreign holdings of KTB and MSBs to limit speculative inflows.

Korea Treasury Bonds. KTBs are issued monthly with benchmark issues at 3y, 5y, 10y, 20y and 30y points on the yield curve, of which 3y KTBs tend to be the most liquid part of the curve. 50y KTBs are issued on an ad-hoc basis. KTB futures are traded actively at 3y and 10y tenors. KTB futures for the 5y tenor are also available, although liquidity is less than the other tenors. The MoSF has issued 50y KTBs since 2016 because of strong demand for duration from local investors such as insurance companies.

Inflation-linked bonds. These were first issued in 2007 with the yield linked to headline CPI. These bonds tend to be illiquid. There are now five issues of KTBi (2020, 2021, 2023, 2025, 2026 and 2028 maturities). The principal of KTBi securities has been guaranteed by the government since June 2010. Each primary dealer (PD) cannot buy more than 25% of the amount it bought in the 10Y KTB auction of that month.

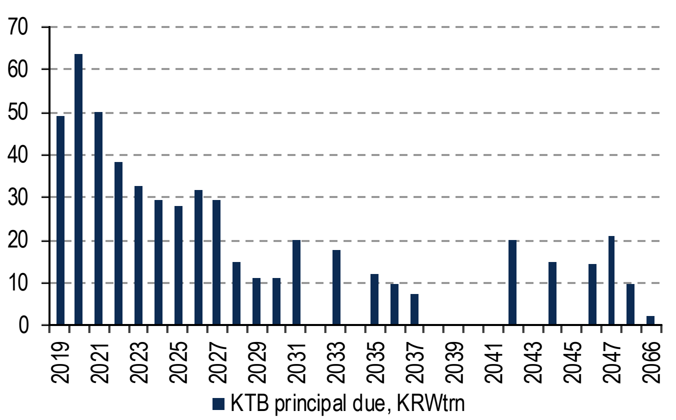
Corporate bonds. These are issued by non-financial private companies through public offerings underwritten by financial institutions. The typical maturity is five years.

Money market. The BoK issues monetary stabilization bonds (MSBs) to form benchmark yields for short-term interest rates and to manage liquidity. Outstanding MSBs have gradually declined 8% since recording a record high in July 2015.

Certificate of deposits. Banks tend to access the money market for short-term funding by issuing certificates of deposit (CDs). Issuance of CDs has fallen since the Financial Supervisory Service (FSS) announced in 2010 that CDs will not be included in banks' loan-to-deposit ratio. The 91-day CD rate is the main reference rate for the swap market, being the floating leg for interest rate swap contracts including forward rate agreements (FRAs).

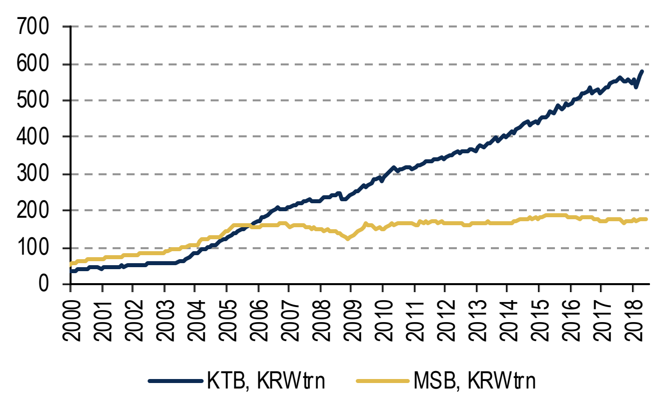
Auction and placement mechanism. KTBs are issued for financing government projects and social welfare schemes. They are fixed-coupon bonds with semi-annual interest payments and maturities of 3, 5, 10, 20, 30 and 50 years. KTBs, with the exception of the 50y KTB, are issued monthly according to the auction calendar announced at the beginning of the month.

Chart 38: Maturity profile of Korea Treasury Bonds



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 39: Outstanding KTB and MSB



Source: BofA Merrill Lynch Global Research, CEIC

Derivatives market

Interest rate swaps. The onshore IRS curve has good liquidity out to 10 years with the 91-day CD rate as the reference floating leg for IRS contracts, and has thin liquidity beyond 10 years up to 20 years. The main participants in the market are local banks, local issuers of debt and foreign investors. Structured note issuers are particularly active in hedging duration risk and receive IRS beyond 5y tenors.

Cross-currency swaps. The cross currency swap (CCS) market is quoted out to 10 years at least and liquidity is good out to five years. CCS activity is dominated by offshore debt issuers who receive the CCS to hedge interest-rate risk, and by local exporters–notably shipbuilders–that have future export receipts and receive the CCS curve. USD liquidity can come under stress during periods of global risk aversion and widen the basis between the CCS and the IRS. Thus, a number of measures, such as limits on domestic banks' net foreign open positions, have been introduced by officials to dampen the potential impact of USD liquidity squeezes on the onshore market.

Forward rate agreements. Forward rate agreements (FRAs) are used by corporates and investors to hedge against movements in the base rate set by the BoK, while longer tenors are used to hedge long-term assets or liabilities. FRAs usually trade between clients and market makers, and are rarely traded in the interbank market.

KTB futures. The 3y KTB futures contract is one of the most liquid bond futures contracts in the world. Contracts expire March, June, September and December. One contract size is KRW100mn. Each contract is made up of a basket of bonds, which is usually three KTBs: two 3y and one 5y tenors. Foreign investors are a major player in the 3y KTB futures market. Local securities companies also tend to hold significant intra-day positions. The KTB futures market allows investors to express short duration views.

FX market

The exchange rate regime in Korea is classified by the IMF as a floating rate regime. KRW is fully convertible and is tradable offshore on a non-deliverable forward (NDF) basis. The FX market opens from 09:00 to 15:30.

The MoSF determines the FX policy in Korea and has the right, under the Foreign Exchange Transaction Act (FETA), to delegate part of its regulatory authority to the BoK. The BoK has acted in the FX market to reduce excessive short-term movements.

Investor base

Insurance companies are the largest local investors in KTBs, followed by pension funds and foreigners. Strong demand for duration by domestic life insurance companies has supported demand for back-end KTBs since 2016. While the decomposition of foreign

Table 46: Summary statistics of Korea products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-ask spread	Bloomberg Reference
Interest rate swaps				
1-year	KRW 1-2trn	5-10k DV01	1bp	KWSWO1 Curncy
5-year	KRW 1-2trn	5-10k DV01	1bp	KWSWO5 Curncy
10-year	KRW 1-2trn	5-10k DV01	1bp	KWSWO5 Curncy
Non-deliverable interest rate swaps				
1-year	KRW 1trn	5-10k DV01	1bp	KWSWNI1 Curncy
5-year	KRW 500bn	5-10k DV01	1bp	KWSWNI5 Curncy
10-year	KRW 300bn	5-10k DV01	1bp	KWSWNI10 Curncy
Cross currency swaps				
1-year	KRW 100-150mn	5k DV01	5bp	KWSWN1 Curncy
5-year	KRW 100-150mn	5k DV01	10bp	KWSWN5 Curncy
10-year	KRW 100-150mn	5k DV01	10bp	KWSWN10 Curncy
Swaptions				
1x5	KRW 300bn*	KRW 100bn	1.5 vol	KWSP015 Curncy
5x5		KRW 50bn	1.5 vol	KWSP055 Curncy

Source: Bloomberg. *Estimated from the broker market and client trading.

Table 47: Vital statistics and characteristics of Korea's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
KRW Onshore						
Spot	KRW Spot	USD 8.0-10.0bn	USD 3-5m	KRW 0.1	KFTC01	Trading hours: 09:00-15:30 (Seoul)
Swap	KRW FX Swap	USD 9.0bn	USD 50m	KRW 0.1-0.5	KFTC23	-
KRW Offshore						
Forwards	NDF	USD 4.0-5.0bn	USD 5m	KRW 0.3-0.5 (0.3 during spot hours, 0.5 after spot hours)	PNDF PNDG	KRW is non-deliverable currency. Offshore entities can access the market through NDF. USD settled NDF on KRW are available for tenors up to 10 years and are liquid for tenor less than 1 year.
Options	NDO	USD 500m	USD 50-100m	0.4 vol	-	USD settled NDO on KRW are available for tenors up to two-years and are liquid for tenor up to one-year.

Source: Reuters

holdings of KTBs is no longer available, China became the largest foreign holder of Korean bonds in February 2016.

Rules, regulations, capital controls and taxation

In January 2011, the authorities reintroduced a withholding tax of 14% on interest income plus 1.4% local tax (bringing total withholding tax to 15.4%) on nonresident investments in KTBs and MSBs. Foreign investors are subject to a 20% capital gains tax or 10% of gross sale proceeds, whichever is lower, unless reduced by a preferential tax treaty. Foreign investors are required to open a foreign currency investment account and a nonresident Korean currency investment account. They may appoint an onshore/local custodian to operate their account.

Clearing and settlement

The Korea Securities Depository (KSD), the country's sole central securities depository, conducts the clearing and settlement of securities. It is under the supervision of the Ministry of Strategy and Finance, the Financial Supervisory Commission (FSC), and the Financial Supervisory Service. The purchase or sale of securities by nonresident investors is settled physically at the KSD or at a custodian bank. The original order is placed with a local broker or standing proxy. Transactions settle T+1 in most cases, but up to T+3 when a foreign investment is involved. The BoK administers the payments system and uses a real-time gross settlement system known as the BoK Financial Wire Network (BoK-WIRE).

Table 48: Holders of KTB as of December 2017

	Holdings, KRWtrn	% of total
Insurance	214.4	41.7
Pension funds	122.0	23.7
Foreigners	75.4	14.7
Investment Trust	37.4	7.3
Bank	34.4	6.7
Government	12.6	2.5
Banking corporation	7.7	1.5
Other corporates	7.0	1.4
Individual	2.7	0.5
Private equity	0.9	0.2
Total	**514.6**	**100.0**

Source: Infomax

Table 49: Summary of Korea bond markets and products

Instrument	Korean Treasury Bonds (KTB)	Monetary Stabilization Bonds (MSB)	Inflation-linked KTB (KTBi)
Issuer	Ministry of Strategy and Finance (MoSF)	Bank of Korea	Ministry of Strategy and Finance (MoSF)
Currency	KRW	KRW	KRW
Tenor	3, 5, 10, 20, 30, 50 years	91 days, 182 days, 1 year, 2 years	10 years
Interest rate/coupon	Fixed	Discount (91 days and 182 days) and coupon (1 year and 2 years)	Fixed
Coupon Payments	Semi-annual for issues since 2003, quarterly for issues before 2003	Quarterly	Semi-annual
Day Count Calculation	Act/Act	Act/Act	Act/Act
Amortization Schedule	Bullet	Bullet	Bullet
Form	Bearer	Bearer	Bearer
Amount outstanding	KRW 578trn (as of April 2018)	KRW 174tn (as of April 2018)	KRW 11trn (as of April 2018)
Secondary Market			
Trading	Korea Exchange (KRX) and OTC via securities firms	Korea Exchange (KRX) and OTC via securities firms	OTC
Quotation Convention	Yield (to 3 decimals)	Yield (to 3 decimals)	Yield (to 3 decimals)
Settlement Period	T+1	T+1	T+1
Average Daily Turnover	KRW 6-10trn	KRW 3-6trn	KRW 10-20bn
Bid/offer spread (0-5Y)	1bp up to KRW 30bn, 1-2bps off the run	1bp	5bps
Bid/offer spread (5Y+)	1bp up to KRW 30bn, 1-2bps off the run	NA	5bps
Average trade size	KRW 10bn	KRW 10bn	KRW 10bn
Clearing Mechanism	Korea Securities Depository (KSD)	Korea Securities Depository (KSD)	Korea Securities Depository (KSD)
Major players	Banks, Pension Funds, Insurance, Securities Firms, Investment Trust	Banks, Pension Funds, Insurance, Securities Firms, Investment Trust	Banks, Pension Funds, Insurance, Securities Firms, Investment Trust
Trading hours	9:00-15:30 (Seoul)	9:00-15:30 (Seoul)	9:00-15:30 (Seoul)
Regulations			
Restrictions on Foreign Investment	No restrictions but foreign investors are required to register and obtain an Investment Registration Certificate (IRC) with the Financial Supervisory Board (FSB)	No restrictions but foreign investors are required to register and obtain an Investment Registration Certificate (IRC) with the Financial Supervisory Board (FSB)	No restrictions but foreign investors are required to register and obtain an Investment Registration Certificate (IRC) with the Financial Supervisory Board (FSB)
Custodian	Require appointment of a standing proxy for trading and designation of a local custodian	Require appointment of a standing proxy for trading and designation of a local custodian	Require appointment of a standing proxy for trading and designation of a local custodian
Withholding Tax	15.4%	15.4%	15.4%
Capital gains Tax	Foreign investors are subject to 20% capital gains tax or 10% of gross sale proceeds, whichever is lower. Residents are taxed at 15%. Tax may be further reduced by preferential tax treaty	Foreign investors are subject to 20% capital gains tax or 10% of gross sale proceeds, whichever is lower. Residents are taxed at 15%. Tax may be further reduced by preferential tax treaty	Foreign investors are subject to 20% capital gains tax or 10% of gross sale proceeds, whichever is lower. Residents are taxed at 15%. Tax may be further reduced by preferential tax treaty
Primary Auctions			
Auction Style	Multi-price modified Dutch auction	Dutch style auction	Option of primary dealer in 10Y KTB option. Issue rate is the sum of the highest accepted rate in the 10Y KTB auction and a spread.
Average issue size (per month)	KRW 8-9trn	KRW 12-14trn	KRW 200bn
Minimum Amount of Tender	KRW 10,000	KRW 10,000	KRW 10,000
Bidders	Resident and nonresident individuals and institutional investors through custodian banks and foreign exchange banks.	Resident and nonresident individuals and institutional investors through custodian banks and foreign exchange banks.	Resident and nonresident individuals and institutional investors through custodian banks and foreign exchange banks.

Source: ADB, Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	Aa2/AA/AA-	Aa2/AA/AA-
2017	Aa2/AA/AA-	Aa2/AA/AA-
2016	Aa2/AA/AA-	Aa2/AA/AA-
2015	Aa2/AA-/AA	Aa2/AA-/AA-
2014	Aa3/AA-/AA	Aa3/A+/AA-
2013	Aa3/ AA-/AA	Aa3/A+/AA-
2012	Aa3/ AA-/AA	Aa3/A+/AA-
2011	A1/A+/AA	A1/A/A+
2010	A1/A+/AA	A1/A/A+
2009	A2/A+/AA	A2/A/A+
2008	A2/A+/AA	A2/A/A+
2007	A2/A+/AA	A2/A/A+
2006	Baa1/A+/AA	A3/A/A+
2005	Baa1/A+/AA	A3/A/A+
2004	Baa1/A+/AA-	A3/A-/A
2003	Baa1/A+/AA-	A3/A-/A
2002	Baa1/A+/AA-	A3/A-/A
2001	Baa1/ A+/A	Baa2/BBB+/BBB+
2000	Baa1/A/A	Baa2/BBB/BBB+

Source: , Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+1
Basis: Act/Act
Coupon frequency: Semi-annual or quarterly

IRS

Fixing: 91-day CD
Coupon frequency: Quarterly fixed/floating Act/365

Bloomberg pages

KRW Curncy ALLQ<GO> – FX rates
OTC KRW<GO> – Market monitor
BOK<GO> – Bank of Korea
KORMSB<CORP> – Monetary stabilization bonds
NDFB<CORP> – Korea Treasury Bonds
KSDA<GO> – Benchmark bond yields
KBPM<GO> – Korea Bond Pricing and CD rates

Reuters pages

BOK01 – BOK market interest rates
KBP01 – Korea Bond Pricing & KMCC
KFTC/MENU – SMBS FX fixing & volumes
KRCD91=BOKK 91CD fixing
MTMAV – Closing benchmark yields

CCS

Fixing: 6m USD LIBOR
Coupon frequency: Semi-annual USD day count Act/360, local Act/365

Useful official websites

Bank of Korea (BOK)
www.bok.or.kr

Ministry of Strategy and Finance
www.mosf.go.kr

Korea Treasury Bonds
http://ktb.mosf.go.kr/eng/

Ministry of Foreign Affairs and Trade
www.mofat.go.kr

Ministry of Commerce, Industry and Energy
www.mke.go.kr

Financial Supervisory Service
http://english.fss.or.kr/fss/en/main.jsp

Korea National Statistics Office
www.kostat.go.kr

National Pension Service
www.nps.or.kr

National Tax Service
www.nts.go.kr

Useful market websites

Korea Bond Web
www.bondweb.co.kr

Korea Futures Exchange
www.krx.co.kr

Korea Securities Dealer Association
www.ksda.or.kr

Korea Financial Investment Association
http://www.kofia.or.kr

Korea Capital Market Institute
http://www.kcmi.re.kr

*Links are to third-party websites, and do not contain BofAML Global Research.

Malaysia

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Overview

Malaysia's bond market was US$339bn at end-June 2018, of which the government bond market accounted for 52.7%. Malaysia's bonds benefit from no withholding taxes or capital gains tax. It also offers thriving Islamic bond and money markets. As of June 2018, foreigners held 40.1% of outstanding Malaysia Government Securities (MGS).

Bank Negara Malaysia

Objectives

Bank Negara Malaysia (BNM) was established in 1959 under the Central Bank of Malaysia Act 1958, which was repealed by the Central Bank of Malaysia Act 2009 (CBA), effective November 2009. BNM is a statutory body wholly owned by the Malaysian government. It reports to the Ministry of Finance and keeps the minister informed of matters pertaining to monetary and financial sector policies.

The central bank's main monetary policy objective is to keep inflation "low and stable" in the long term, thereby preserving the purchasing power of the ringgit. BNM is also responsible for bringing about financial system stability. It has the authority to regulate and supervise financial institutions, and to provide oversight over money and foreign exchange markets. It is also the sole authority in issuing currency and managing the country's international reserves.

Legal framework

A number of legislations set out the functions and duties of BNM and its board. CBA stipulates the functions of BNM, and gives the central bank the necessary power and instruments to achieve its mandates. The Exchange Control Act 1953 lists BNM's duties and restrictions in relation to gold, currency, payments, securities, debts and others. The Banking and Financial Institutions Act 1989 provides laws for the licensing and regulation of institutions conducting banking, financing, merchant banking, discount house and money-broking business. The Islamic Financial Services Act 2013 authorizes BNM to regulate and supervise Islamic financial institutions, payment systems and other relevant entities, as well as oversight of the Islamic money market and Islamic foreign exchange market. The new government in Malaysia has ambitions to further legalize the independence of BNM, but there has not been much information on this front as yet.

Other legislations in place include the Insurance Act 1996, Takaful Act 1984, Development Financial Institutions Act 2002, Payment Systems Act 2003 and Money

Table 50: Key facts

Name	Bank Negara Malaysia
Founded	1959
Governor	Datuk Nor Shamsiah binti Mohd Yunus
Board members	9
Autonomous	Yes
Government representative on board	Secretary General of Treasury, Ministry of Finance
Terms	Governor 5 years; deputy governors and directors 3 years
Inflation target	-
Latest move	Hold (10 May 2018)

Source: Bank Negara Malaysia

Table 51: Key links*

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
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Reports
Presentations and speeches
Legal framework
English version
Ministry of Finance
National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

Services Business Act 2011. The Financial Services Act 2013 was published in March 2013 and provides for the regulation and supervision of financial institutions, payment systems, and other relevant entities.

Decisions

BNM's board of directors consists of a governor, three or fewer deputy governors and at least five but not more than eight directors. The governor leads in managing the central bank and has the authority to decide on any matters as provided under CBA. In the absence of the governor, or the inability of the governor to act, a deputy governor selected by the board, on recommendation of the Board Governance Committee, is given the authority to make decisions on behalf of BNM. The board of directors is statutorily required to meet at least once a month. The governor chairs the board.

The governor is appointed by the Yang di-Pertuan Agong, the head of state, while the deputy governors are appointed by the Minister of Finance. Directors are appointed by Yang di-Pertuan Agong (the monarch and head of state) on the advice of the finance minister. BNM's governor is appointed for a five-year term and can be reappointed. Deputy governors are appointed for three-year terms and are eligible for reappointment. There are no limitations to the number of terms they may serve.

Introduced in 2002, the Monetary Policy Committee (MPC) is responsible for formulating monetary policies, as well as policies for the conduct of monetary policy operations. The MPC consists of the governor, deputy governors and at least three but not more than seven assistant governors. These members may be directors on the board, in addition to other officers appointed by the board on recommendation from the Board Governance Committee. Assistant governors are appointed for a term not exceeding three years and can be reappointed.

The new Governor

The current BNM Governor Datuk Nor Shamsiah Mohd Yunus returned to the central bank on 1 July 2018, after previously serving as deputy governor under Tan Sri Dr Zeti Akhtar Aziz. Nor Shamsiah has worked with the central bank for 30 years and was involved primarily in overseeing the banking sector. Apart from banks, her area of supervision covered insurance and takaful companies, financial intelligence and enforcement, and talent management. She rejoined BNM after a brief stint at the IMF in Washington DC, where she was the assistant director of Monetary and Capital Markets Department.

Monetary policy regime and instruments

In accordance with the CBA, BNM's monetary policy objective is as follows: "In promoting monetary stability, the bank shall pursue a monetary policy which services

Table 52: Board of Directors and key directors formulating Malaysia's monetary policy

Name	Date originally appointed	Current term ends	Background
Nor Shamsiah binti Mohd Yunus, governor	Jul-18	Jul-23	Former deputy governor under Tan Sri Dr Zeti Akhtar Aziz; previous stint in BNM 1987-2015
Shaik Abdul Rasheed bin Abdul Ghaffour, deputy governor	Jul-16	Jul-19	Former assistant governor for monetary policy and economics & alternate executive director of the SEAsia voting group on the IMF executive board
Chew Cheng Lian (Jessica), deputy governor	Jan-18	Jan-21	Former assistant governor for regulation sector at BNM; joined BNM in 1993.
Nazrul Hisyam bin Mohd Noh, secretary to the board and assistant governor	Feb-11	Feb-20	Master's degree, University of Cambridge, Former director of corporate communications department
Norzila binti Abdul Aziz, assistant governor	Nov-09	Nov-18	Former director of the investment operations and financial market department
Donald Joshua Jaganathan, assistant governor	Feb-11	Feb-20	Former director of the finance department
Marzunisham bin Omar, assistant governor	Feb-11	Feb-20	Seconded as Executive Director at International Monetary Fund (2015-2017)
Abu Hassan Aishari bin Yahaya, assistant governor	Feb-11	Feb-20	Former secretary to the board of BNM
Datuk Ahmad Hizzad bin Baharuddin, assistant governors	Nov-14	Feb-20	Former Director of several departments in Bank Negara Malaysia including Payment Systems Policy, Financial Sector Development and Islamic Banking and Takaful.
Mohd. Adhari bin Belal Din, assistant governor	May-15	May-18	Former director of strategic human capital department
Tan Nyat Chuan, assistant governor	May-18	May-21	Former director of internal audit department

Source: BNM, BofA Merrill Lynch Global Research the interests of the country with the primary objective of maintaining price stability giving due regard to the developments in the country". To achieve that, BNM uses the overnight policy rate (OPR) to influence the overall level of interest rates in the economy.

The MPC is the body responsible for formulating monetary policy and the policies to conduct monetary operations. It consists of 7-11 members, with the governor as chairman of the committee. The governor and deputy governors remain members of the MPC as long as they hold office. Members, other than governors and deputy governors, are appointed by BNM's board of directors from among senior officials at the bank with relevant expertise. The Board Governance Committee may also recommend external members to the MPC.

BNM can opt to use the statutory reserve requirement to control money supply, or issue government papers – Bank Negara Monetary Notes (BNMN) – through open-market operations. The bank can also manage liquidity through transactions in the conventional and Islamic interbank money markets.

Exchange rate regime and instruments

Malaysia has been operating a managed float exchange rate regime since 21 July 2005, with MYR strength determined by market fundamentals. Prior to the current managed float system, BNM operated a fixed exchange rate regime, with MYR pegged to USD.

Promoting exchange rate stability remains a primary objective for the central bank. BNM monitors the nominal effective exchange rate (NEER) against an undisclosed basket of currencies to ensure MYR remains close to its par value. The system allows free flow of payments and transfers on the current account, but controls and restrictions are in place for the capital account.

Credit regulation functions

BNM is the key authority responsible for the financial stability and supervision of the financial sector. Other relevant authorities include the Labuan Financial Services Authority (LFSA), the Securities Commission of Malaysia (SC) and the Malaysia Deposit Insurance Corporation (PIDM). Laws like the Banking and Financial Institutions Act 1989, Insurance Act 1996 and the Islamic Banking Act 1983 set regulations for financial institutions in Malaysia. In 2013, BNM issued the Financial Services Act 2013 (FSA) and Islamic Financial Services Act 2013 (IFSA) to strengthen supervision of the financial sector.

The central bank publishes guidelines on lending and deposit rates. There are also laws governing the forms of consumer credit in Malaysia, including the Banking and Financial Institutions Act 1989, the Hire-Purchase Act 1967, the Moneylenders Act 1951 and the Islamic Banking Act 1983.

BNM has a Joint Policy Committee (JPC) to deliberate on cross-cutting issues to ensure proper coordination of policies that may impact the domestic financial system and the broader economy. The JPC is activated when the MPC or the Financial Stability Committee (FSC) escalates an issue that has implications on monetary and financial stability. Since its inception in 2010, several decisions have been made, such as (1) introducing a maximum loan-to-value (LTV) ratio of 70% for the third housing loan; (2) introducing maximum hire purchasing financing of nine years; and (3) increasing real property gains tax to 10% for sale of property within two years of purchase, and to 5% for sales between two and five years.

Table 53: Meetings and releases in 2018

	Monetary policy meeting	Monetary policy minutes
Jan	Thu, 25 Jan	Thu, 25 Jan
Mar	Wed, 07 Mar	Wed, 07 Mar
May	Thu, 10 May	Thu, 10 May
Jul	Wed, 11 Jul	Wed, 11 Jul
Sep	Wed, 05 Sep	Wed, 05 Sep
Nov	Thu, 08 Nov	Thu, 08 Nov

Source: BNM website.

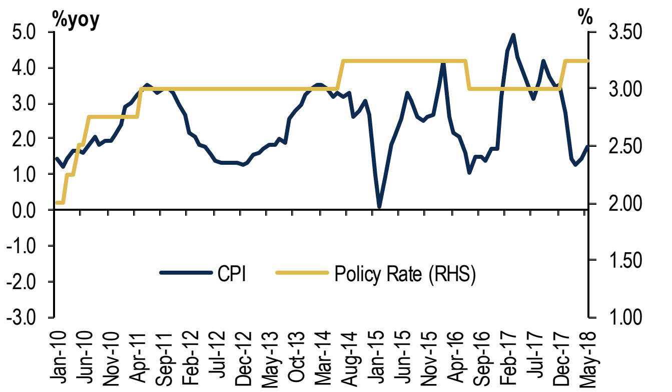
Current policy stance

The OPR has been maintained at an accommodative 3.25% since January this year. Given the outlook for growth and inflation, BNM is expected to stay on a prolonged hold over 2018-19. Uncertainties cloud the near-term outlook for the economy and markets due to both external risks arising from trade tensions and domestic policy shifts following a historic change in government. We expect growth at 5.3% and 4.7% over 2018-19 – moderating from 5.9% in 2017. In the very near term, growth could be supported by higher consumption associated with the election spending and boost from the zero-rating of GST. However, we see growth at a below-potential and below-consensus 4.7% in 2019 as investment growth bears the brunt of new policies to review mega infrastructure projects. Meanwhile, inflation is expected to remain subdued with the central bank warning that it could turn negative in a few months, before picking up gradually into mid-2019.

Meetings, data and information dissemination

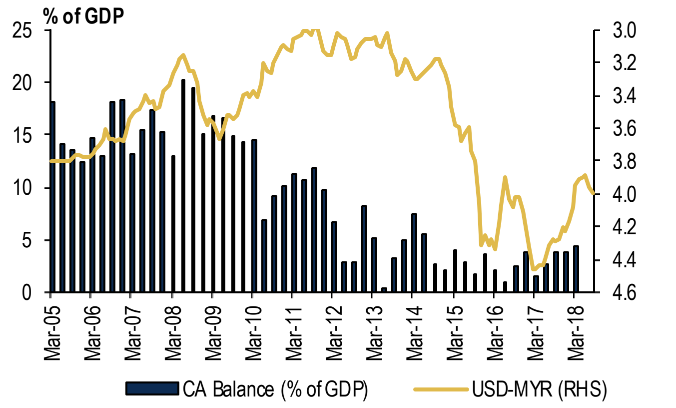
The MPC is required to hold six regularly scheduled meetings a year; additional meetings may be convened if necessary. The MPC typically meets once every two months to review economic and financial conditions, and to decide on appropriate monetary policy. A monetary policy statement is issued on the same day as the MPC meeting, at 3pm local time. The central bank also releases a Monthly Statistical Bulletin with information on the latest banking, liquidity, capital market and macroeconomic situations. The bulletin is typically published with a one-month lag.

Chart 42: Inflation and Overnight Policy Rate



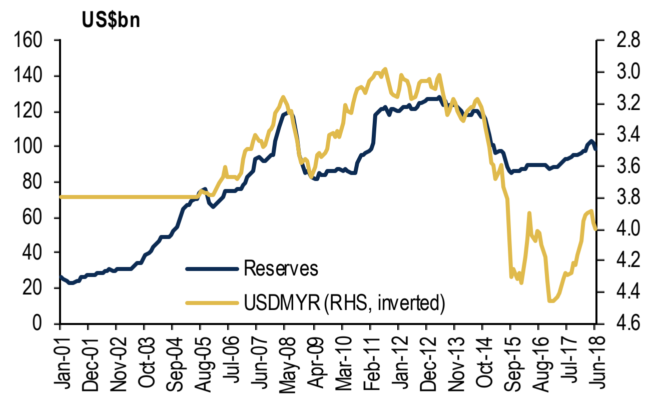
Source: BofA Merrill Lynch Global Research, CEIC

Chart 43: Current account balance and FX rate



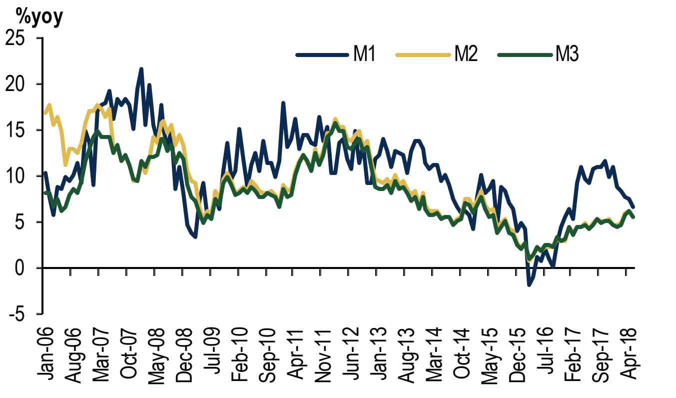
Source: BofA Merrill Lynch Global Research, CEIC

Chart 40: Exchange rate and FX reserves



Source: BofA Merrill Lynch Global Research, CEIC

Chart 41: Money supply growth



Source: BofA Merrill Lynch Global Research, CEIC

Bond market

We expect Malaysia to issue MYR103.5bn of government bonds in 2018, less than the MYR107.5bn issued in 2017. Malaysia balances its financing needs between local and external debt issuance and the use of private placements. External Islamic issues, *sukuks*, are very popular.

Money market. The conventional money market consists of an interbank market and another market intermediated through discount houses. The key instruments are overnight and call money, T-bills, short-dated government securities, bankers' acceptances and negotiable certificates of deposit (NCDs) to a lesser extent. Interbank transactions are limited to overnight, 7-day and 1-month funding needs among commercial and merchant banks. The key benchmark money market rate is the 3-month KLIBOR (Kuala Lumpur Interbank Offered Rate), which is the polled average of 12 banks' quotes announced each day at 11am local time. The 3-month tenor is the reference fix for the floating leg of the interest rate swaps.

The Islamic Interbank Money Market (IIMM) serves the Islamic banking system and has a full range of instruments: Mudarabah Interbank Investments, Wadiah Acceptance, Government Investment Issues, BNM-I notes, sell and buyback agreements, as well as Islamic versions of accepted bills, negotiable instruments, debt securities and BNM *sukuks* (SBNMI). For details, see http://iimm.bnm.gov.my/index.php?ch=4&pg=4&ac=22

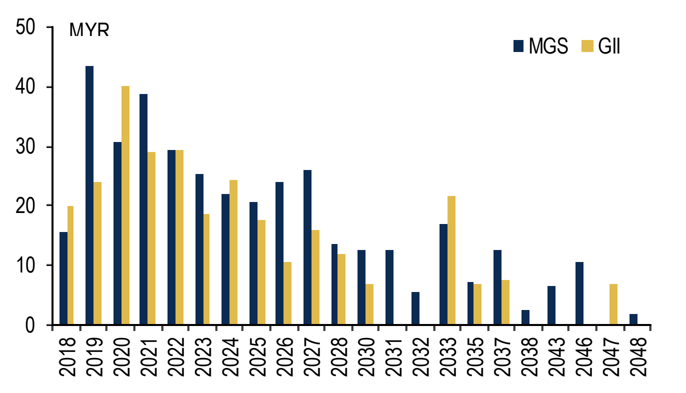
Negotiable instruments of deposit (NIDs). These money market instruments are issued by banks and authorized depository institutions, typically used for short-term repos, traded in a liquid secondary market, and not subject to withholding tax. Minimum maturity for NIDs is one month, usually for an odd number of days, and goes up to 10 years. However, short-dated tenors are the most actively traded.

Malaysian Government Securities. MGS are fixed-rate, semi-annual coupon bonds with bullet repayment. The issuance is outlined in an annual calendar with issuance size announced a week prior. The tenors go out to 20 years with the 3, 5 and 10-year MGS the benchmark issues. Switch auctions are also used to maintain liquidity along the curve. Bank Negara Malaysia also introduced Callable MGS in 2006 (MGSC).

Malaysian Government Investment Issues. GIIs are long-term dividend paying *sukuks* intended for development financing. Maturities for these issues are 3, 5, 7 and 10 years. They are priced on the principle of *Bai' Al-Inah*, where the government sells a specified portion of its assets and repurchases these assets at the original value plus profit at a later date. This profit is defined as a weighted average yield achieved in a competitive tender.

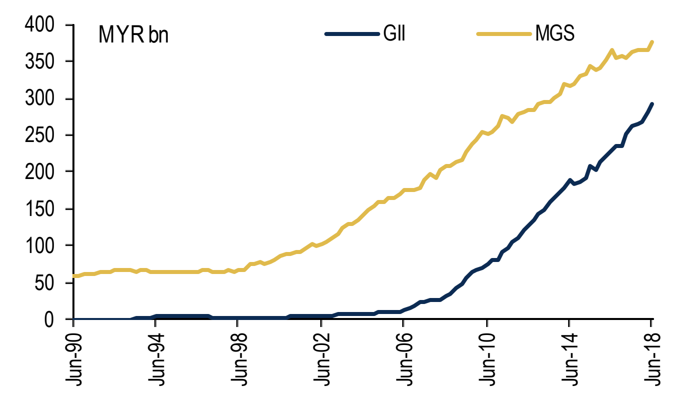
BNM Treasury bills. Bank Negara Malaysia issues these government bills weekly at a discount through competitive auction with 3, 6 and 12-month maturities. Auctions are typically Thursday and issues Friday. T-bills are traded actively in the secondary market.

Chart 44: Maturity profile of Malaysian government bonds (MYR bn)



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 45: Outstanding government debt (MYR bn)



Source: BofA Merrill Lynch Global Research, CEIC

BNM monetary notes. Created in 2006, these notes are designed to manage liquidity in the conventional and Islamic markets and replace previous BNM bills and negotiable notes. Maturities range from three weeks to three years and can be coupon or discount based. The notes are issued twice a week and the calendar is released every two weeks.

Corporate bonds and private debt. There are two broad categories: Khazanah Bonds and Cagamas Papers. Khazanah represents the government's investment arm, which usually issues zero-coupon paper under the Islamic principle of *Murabahah* with tenors of 3, 5, 7 and 10 years.

Cagamas bonds are unsecured bearer bonds issued by the national mortgage corporation. In general, there are five types of issues, ranging from fixed-rate bonds (up to 10-year maturity) to floating rate bonds (up to 10-year maturity), with rates pegged to 3-month and 6-month KLIBOR, and Cagamas short-term notes, less than 12 months maturity, issued at discount or with coupon.

Auction and placement mechanism. BNM issues MGS and GII via competitive auction on behalf of the government to finance its development expenditure. MGS are long-term, fixed-rate, coupon-bearing bonds with bullet repayment of principal upon maturity. Coupon payments are made semi-annually.

Derivatives market

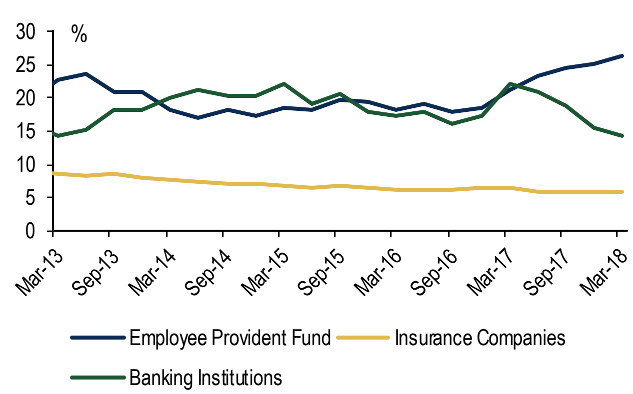
Interest rate swaps. Three-month KLIBOR is the reference fixing for the floating leg. Tenors and liquidity range up to 10 years and are actively traded. Relative to futures, IRS provide a better interest rate hedging instrument. Foreign investor access is typically done through non-deliverable NDIRS as access to the onshore market is restricted to hedging underlying bond exposures.

Cross currency swaps. CCS are less liquid than IRS, but tenor extends to 10 years. Onshore access for foreign investors is limited to bond hedging purposes.

KILBOR futures. Liquidity remains wanting and turnover is low. KLIBOR futures are based on 3-month KLIBOR and on the typical quarterly cycle: March, June, September and December. Contract size is RM1mn, with the maximum number of net long or net short positions limited to 5,000 contracts for all months combined.

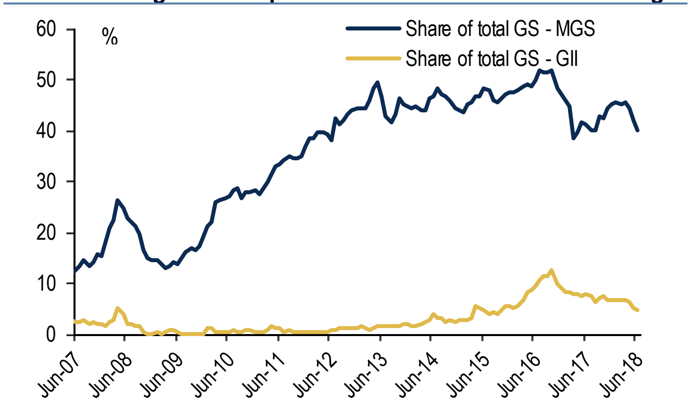
MGS bond futures. 3-month, 3-year and 5-year tenors are available. The minimum contract size varies from RM100,000 for the 3-year and 5-year tenors to RM1,000,000

Chart 46: The key local investors in the Malaysian government securities markets



Source: BofA Merrill Lynch Global Research, CEIC

Chart 47: Foreign ownership of MGS and GII as % of total outstanding



Source: BofA Merrill Lynch Global Research, Bloomberg

for the 3-month tenor. However, poor liquidity makes them an unattractive hedging proposition[9].

Table 54: Summary statistics of Malaysia derivative products and their markets

Product	Average daily trading volume	Average transaction size	Bid-ask spread	Bloomberg Reference
Interest rate swaps				
1-year	450mm	100mm	2bp	MYSW1Y Index
5-year	500mm	50mm	4bp	MYSW5Y Index
10-year	50mm	30mm	4bp	MYSW10Y Index
ND Interest rate swaps				
1-year	450mm	100mm	2bp	MRSWQO1
5-year	500mm	50mm	4bp	MRSWQO5
10-year	50mm	30mm	4bp	MRSWQO10
Cross-currency swaps -				
onshore	NA	USD20mn	20bp 5y tenor	NA
offshore	NA	USD20mn	10bp 1-3y tenor	NA
	NA	USD20mn	25bp 3y plus	NA

Source: Bloomberg

Investor base

Bank Negara Malaysia supplies data on foreign purchases of local bonds with a two-month lag, which is tracked as a lagging indicator of foreign demand for Malaysian local debt. As of March 2018, the largest investors in outstanding Malaysian Government Bonds were foreigners (46%) and Employees Provident Fund (26%).

Malaysia has benefitted from the structural trend of the diversification of sovereign wealth fund/central bank reserves into Asia. It is one of the largest bond markets in Asia and has the advantage of being fully open to foreign investors and Euroclearable, and there is no withholding tax applied to either T-bill or MGS/GII transactions, with Malaysia being part of the Citigroup WGBI index.

Rules, regulations, capital controls and taxation

Foreign investors can access the onshore local fixed income market, and are required to have a local custodian. FX and interest hedging is allowed, but must match the underlying notional and maturity date of the asset. There is no withholding tax on interest income or capital gains.

Table 55: Ownership breakdown of Malaysian Government bonds (as of March 2018)

	MYR (bn)	% share of total
Total MGS	**363.7**	**100%**
Employees Provident Fund	95.6	26%
KWAP	11.7	3%
Insurance companies	21.3	6%
Central Bank of Malaysia	4.7	1%
Banking institutions	52.3	14%
Development financial institutions	0.5	0%
Non-bank financial institutions	0.0	0%
Others	11.6	3%
Total local holders	**197.8**	54%
Foreign holders	**165.9**	46%

Source: BNM, BofA Merrill Lynch Global Research, CEIC

Clearing and settlement

Successful bids are allocated via the Real Time Electronic Transfer of Funds and Securities System (RENTAS) by lodging the securities with their appointed Authorized Depository Institution (ADIs). Settlement then takes place automatically through RENTAS on a delivery versus payment basis (DVP). All short-term and long-term government securities are auctioned through a variable rate multiple price auction format known as English auction.

[9] See http://www.bursamalaysia.com/market/derivatives/products/financial-derivatives/3-month-kuala-lumpur-interbank-offered-rate-futures-fkb3

Table 56: Summary of Malaysia bond markets and products

Instrument	Malaysian Treasury Bills (MTB)	Government Investment Issues (GII)	Malaysian Government Securities (MGS)
Issuer	Government of Malaysia, facilitated by BNM	Government of Malaysia, facilitated by BNM	Government of Malaysia, facilitated by BNM
Currency	MYR	MYR	MYR
Principal	Conventional	Islamic	Conventional
Tenor	91, 182, and 365 days	3 to 10 years	3 to 20 years
Interest rate/coupon	Issued at discount	Issued at discount	Fixed rate. Coupon rate is based on the weighted average yields of successful bids
Coupon Payments	Zero coupon	Zero coupon	Semi-annual
Day Count Calculation	---	---	Actual/Actual
Amortization Schedule	Bullet	Bullet	Bullet
Form	Scripless	Scripless	Scripless
Amount outstanding (as of May 2015)	MYR4.24bn	MYR197bn	MYR335bn
Secondary Market			
Trading	OTC or money brokers	OTC or money brokers	OTC or money brokers
Quotation Convention	Discounted yields to two decimal places; trading based on bands of remaining tenure. 10 bands in total		Price basis to two decimal places
Settlement Period	T+1	T+1	T+2
Average Daily Turnover	MYR32.8mn		MYR2.17bn
Bid/offer spread (0-5Y)	4bp		1.5bp
Bid/offer spread (5Y+)	NA		1.5bp
Average trade size	MYR20mn	MYR20mn	MYR20mn
Clearing Mechanism	DVP via RENTAS	DVP via RENTAS	DVP via RENTAS
Major players	Pension fund, insurance companies, asset management companies, securities companies and primary dealers	Pension fund, insurance companies, asset management companies, securities companies, Islamic banks and Principal Dealers with Skim Perbankan Islam (SPI) operations	Pension fund, insurance companies, asset management companies, securities companies and primary dealers
Trading hours	9:00-12:00 and 14:00-17:00 (Kuala Lumpur)	9:00-12:00 and 14:00-17:00 (Kuala Lumpur)	9:00-12:00 and 14:00-17:00 (Kuala Lumpur)
Bidders	Principal dealers appointed by BNM	Islamic banks and Principal Dealers with SPI operations	Principal dealers appointed by BNM.
Regulations			
Restrictions on Foreign Investment	Not restricted	Not restricted	Not restricted
Custodian	Authorized Depository Institutions recognized by BNM	Authorized Depository Institutions recognized by BNM	Authorized Depository Institutions recognized by BNM
Withholding Tax	Exempted	Exempted	Exempted
Capital gains Tax	Exempted	Exempted	Exempted
Entry /Exit Tax	None	None	None
Primary Auctions			
Auction Style	Competitive auction on yield-bid basis	Competitive auction on a price/100 basis	Competitive auction on a yield basis or private placement to selected institutions
Average Issue Size	MYR100mn	MYR3.5bn	MYR3.5bn
Minimum Amount of Tender	10% of the issue (Primary Dealer) in multiples of MYR1mn	10% of the issue (Primary Dealer) in multiples of MYR1mn	10% of the issue (Primary Dealer) in multiples of MYR1mn

Source: ADB, Bloomberg

Local/external debt ratings

	Local	External
2018	A3/A/A-	A3/A-/A-
2017	A3/A/A-	A3/A-/A-
2016	A3/A/A-	A3/A-/A-
2015	A3/A/A	A3/A-/A-
2014	A3/A/A	A3/A-/A-
2013	A3/A/A	A3/A-/A-
2012	A3/A/A	A3/A-/A-
2011	A3/A/A	A3/A-/A-
2010	A3/A+/A	A3/A-/A-
2009	A3/A+/A	A3/A-/A-
2008	A3/A+/A+	A3/A-/A-
2007	A3/A+/A+	A3/A-/A-
2006	A3/A+/A+	A3/A-/A-
2005	A3/A+/A+	A3/A-/A-
2004	A3/A+/A+	A3/A-/A-
2003	A3/A+/A	Baa1/A-/BBB+
2002	A3/A+/A	Baa1/BBB+/BBB+
2001	A3/A/A-	Baa2/BBB/BBB

Source: , Bloomberg, Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: Variable; typically T+1 or T+2
Basis: Act/Act
Coupon frequency: Semi-annual

IRS

Fixing: 3M KLIBOR
Coupon frequency: Quarterly, floating/fixed Act/365

CCS

Fixing: 3m KLIBOR
Coupon frequency: Quarterly USD day count Act/360, local Act/365

Bloomberg pages

MYR Curncy ALLQ<GO> – FX rates
OTC MYR<GO> – Market monitor
BNM<GO> – Bank Negara Malaysia page
BNM<GO>B – Bank Negara bond page
BNMF<GO> – Bank Negara money markets

Reuters pages

NEGARA – Bank Negara Malaysia page
BNM002 – Malaysia auction calendar
KLIBOR= – KL Interbank Offered Rates

Useful official websites

Bank Negara Malaysia (BNM)
www.bnm.gov.my

Treasury Malaysia
www.treasury.gov.my

National Economic Advisory Council
www.neac.gov.my

Employment Provident Fund
www.kwsp.gov.my

Bond Info Hub
http://bondinfo.bnm.gov.my

Useful market websites

Kuala Lumpur Stock Exchange
www.klse.com.my

Bursa Malaysia
www.bursamalaysia.com

Rating Agency Malaysia
www.ram.com.my

Securities Commission
www.sc.com.my

*Links are to third-party websites, and do not contain BofAML Global Research.

Philippines

Claudio Piron
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Philippine Equity Partners

Overview

The Philippines local currency bond market increased 13.1% yoy at end-1Q18, after growing 5% yoy in 1Q17. Currently, more than 80% of the outstanding value is in government bonds, with robust corporate bond growth in the last year. Foreign appetite for local currency bonds has been impeded by a 20% withholding tax, underperforming currency and rising inflation. On ratings, Fitch and Standard & Poor's upgraded Philippines to investment grade status in March 2013 and April 2013, respectively. Standard & Poor's raised its credit rating outlook for the Philippines from stable to positive while retaining its current BBB rating.

Bangko Sentral ng Pilipinas

Objectives

The Bangko Sentral ng Pilipinas (BSP)'s stated primary objective is to promote and maintain price stability. The BSP adopted its inflation targeting framework to achieve this objective. The BSP is also mandated to formulate and enforce banking laws and regulations to bring about a strong financial system conducive to balanced and sustainable economic growth.

Legal framework

The BSP was established on 3 July 1993 pursuant to the provisions of the 1987 Philippine Constitution and the New Central Bank Act of 1993. The BSP took over from the Central Bank of Philippines, which was established on 3 January 1949, as the country's central monetary authority. The BSP has fiscal and administrative autonomy from the national government in the pursuit of its mandated responsibilities.

Decisions

The BSP looks at a wide set of price and output condition indicators, including real gross domestic product growth, commodity prices and remittance inflows, to assess the appropriateness of policy settings. The movements of monetary aggregates such as reserve money, base money and domestic liquidity, or M3 levels, are also monitored as indicators of monetary conditions. The BSP follows international developments closely and their potential impact on the local economy.

The inflation outlook guides monetary policy, as reflected in the BSP's inflation forecasts. Adjustments in the BSP's overnight borrowing or overnight lending rates indicate the monetary policy stance.

The current board

BSP's powers and functions are exercised by the Monetary Board, which consists of seven members appointed by the president of the Republic of the Philippines for a six-year term.

Table 57: Key facts

Name	Bangko Sentral ng Pilipinas
Founded	3 July 1993
Governor	Nestor Espenilla Jr.
Board members	7
Autonomous	Yes
Government representative on board	One cabinet member is on the Monetary Board, currently the Finance secretary
Terms	6 years
Inflation target range	3.0% +/- 1%
Latest move	Hike by 100bp (9 August 2018)

Source: Bangko Sentral ng Pilipinas

Table 58: Key links*

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Legal framework

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

Table 59: Board members

Name	Date originally appointed	Current term ends	Term limit ends	Background	Known policy stance
Nestor Espenilla Jr.	3 July 2017	4 Jul 2023	4 July 2023	Current governor of the BSP	The individual stance of each member of the Monetary Board is not indicated in the meeting highlights. As of August 2018, the board's collective stance was hawkish, having raised policy rates 100bp so far in the first 8 months of 2018
Carlos Dominguez III	Finance secretary, co-terminus with the term of the president of the Republic of the Philippines,				
Antonio S Abacan	July 2017	July 2023	2023	Former chairman of the Development Bank of the Philippines	
Juan D. De Zuniga Jr.	Aug 2014	Aug 2020	2026	BSP deputy governor and general counsel	
V. Bruce J. Tolentino	June 2018	July 2020	2026	Former Deputy Director of the International Rice Research Institute, serving the unexpired term of the late Valentin Araneta	
Felipe M. Medalla	July 2011	July 2013	2023	Former secretary of the National Economic Development Authority	
Peter B Favila	June 2017	June 2023	2023	Former banker and trade secretary	

Source: Bangko Sentral ng Pilipinas

The Monetary Board includes the governor of the BSP, who chairs the board. The governor is head of the department and his appointment is subject to confirmation by the Commission on Appointments. Whenever the governor is unable to attend a board meeting, the governor designates a deputy to act as his proxy. If the governor is unable to appoint a proxy, the Monetary Board designates a member as acting chairman.

The Philippines' president designates a cabinet member to serve on the board. Whenever the designated cabinet member is unable to attend a meeting, he or she designates a government undersecretary to attend in his or her place. Five members of the board come from the private sector and serve full time. Three of members serve six-year terms and two members serve three-year terms. No member of the Monetary Board may be reappointed more than once.

Monetary policy regime and instruments

Philippines' inflation target is defined in terms of average year-over-year change in the consumer price index over the calendar year. The inflation target is set two years in advance. For 2016 and 2018, the target is set at 3.0%, +/- 1pp. The target serves as a guide for the public's expectations about future inflation, allowing the public to plan ahead with greater certainty.

Exchange rate regime and instruments

The BSP has a number of monetary policy instruments at its disposal to promote price stability. To increase or reduce liquidity in the financial system, the BSP uses open market operations, accepts fixed-term deposits, offers standing facilities, and requires banking institutions to hold reserves on deposits and deposit substitutes.

Open-market operations

Open-market operations are a key component of monetary policy implementation. These consist of repurchase and reverse repurchase transactions, outright transactions, and foreign exchange swaps.

Repurchase and reverse repurchase transactions are carried out through the BSP's

Table 60: Meetings and releases in 2018

	Monetary policy meeting	Monetary policy minutes	Inflation report
Jan		18 Jan	19 Jan
Feb	8 Feb		
Mar	22 Mar	8 Mar	
Apr		19 Apr	20 Apr
May	10 May		
Jun	21 Jun	7 Jun	
Jul		19 Jul	20 Jul
Aug	9 Aug		
Sep	27 Sep	6 Sep	
Oct		25 Oct	19 Oct
Nov	15 Nov		
Dec	13 Dec	6 Dec	

Source: Bangko Sentral ng Pilipinas

repurchase (RP) and reverse repurchase (RRP) facilities. In a repurchase or repo transaction, the BSP buys government securities from a bank with a commitment to sell it back at a specified future date, and at a predetermined rate. The BSP's payment to the bank increases the latter's reserve balances, and has an expansionary effect on liquidity. Conversely, in a reverse repo, the BSP acts as the seller of government securities and the bank's payment has a contractionary effect on liquidity. RP and RRP transactions have maturities ranging from overnight to two weeks to one month. The interest rates for the overnight RRP and RP facilities signal the monetary policy stance and serve as the BSP's primary monetary policy instruments.

Outright transactions refer to the BSP's direct purchase/sale of government securities from/to banking institutions. In an outright transaction, the parties do not commit to reverse the transaction in the future, creating a more permanent effect on money supply. When the BSP buys securities, it pays for them by directly crediting its counterparty's demand deposit account with the BSP; so, the transaction increases the buyer's holdings of central bank reserves and expands the money supply. Conversely, when the BSP sells securities, the buyer's payment (made by direct debit against the demand deposit account with the BSP) causes the money supply to contract.

Foreign exchange swaps refer to transactions involving the actual exchange of two currencies (principal amount only) on a specific date, at a rate agreed on the deal date (the first leg). It also involves a reverse exchange of the same two currencies at a future date (the second leg) and at a rate (different from the rate applied to the first leg) agreed to on the deal date.

Acceptance of fixed-term deposits

The BSP accepts deposits from banks. The special deposit accounts (SDA) facility consists of fixed-term deposits by banks and trust entities of banks and non-bank financial institutions with the BSP. The SDA facility was introduced in November 1998 to enable the BSP to expand its liquidity management toolkit. In April 2007, the BSP expanded access to the SDA facility by allowing trust entities to deposit in the SDA facility to better manage liquidity in the face of strong foreign exchange inflows.

In June 2016, the BSP adopted the interest rate corridor (IRC) for the conduct of open-market operations, to help guide short-term market rates toward the BSP policy rate. The low end of the corridor is the deposit rate and the top end is the lending rate. With the adoption of the IRC, the SDA facility is replaced with the term deposit facility, whose tenor ranges from 7 to 28 days.

Standing facilities

The BSP extends discounts, loans and advances to banking institutions to influence the volume of credit in the financial system. Rediscounting is a standing credit facility provided by the BSP to help banks meet temporary liquidity needs by refinancing the loans they extend to their clients. The rediscounting facility enables a financial institution to borrow money from the BSP using promissory notes and other loan papers of its borrowers as collateral. There are two types of rediscounting facilities available to qualified banks: the peso rediscounting facility and the exporters' dollar and yen rediscount facility (EDYRF), introduced in 1995.

Reserve requirements

Reserve requirements refer to the percentage of bank deposits and deposit substitute liabilities that banks must keep on hand, or in deposits with the BSP, and therefore may not lend. Changes in reserve requirements have a significant effect on money supply in the banking system, making them a powerful means of liquidity management.

Reserve requirements apply to peso demand, savings, time deposit and deposit substitutes (including long-term non-negotiable tax-exempt certificates of time deposit) of universal and commercial banks. They may be kept in the form of cash in vault, deposits with the BSP and government securities. The reserve requirement is at 18%, having been reduced from 20% at the start of 2018.

Recent policy moves

Domestic liquidity has visibly tightened in 1H18 on sustained loan growth and increased demand from government via retail treasury bonds. To help ease liquidity, the BSP cut commercial bank reserve requirements from 20% to 18%. However, these coincide with sharply higher inflation, albeit mostly cost-push. Thus, the BSP raised policy rates three times in the first eight months of 2018, by a total of 100bp.

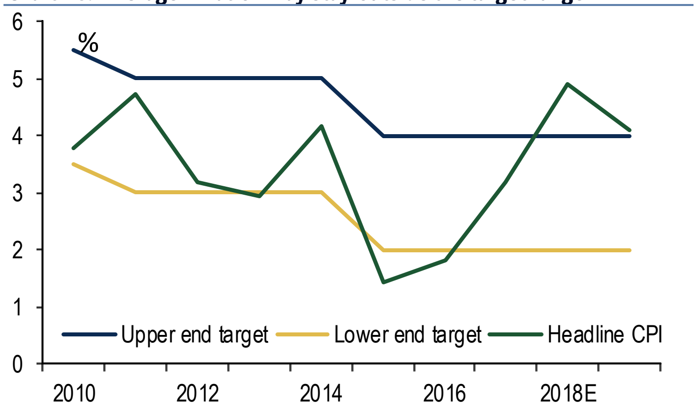
Fiscal policy and debt issuance

The government has reduced its deficit from a peak of 3.9% in 2009 and controlled its foreign currency debt, prompting Fitch and Standard & Poor's to assign investment grade rating in 2013. In May 2014, Standard & Poor's upgraded the Philippines to BBB. In December 2014, Moody's assigned a rating of Baa2. In December 2017, Fitch raised the rating to BBB. In 2018E and 2019E, the government is targeting to keep the fiscal deficit around 3.0-3.2% of GDP.

Bond market

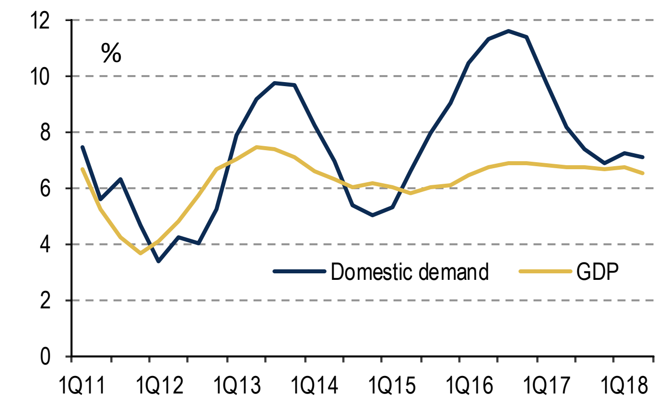
The Philippines government issues a variety of bonds to finance its fiscal deficit. Conventional domestic bonds consist of two kinds of government securities: Treasury bills and bonds. Others consist of dollar-denominated bonds, retail Treasury bonds, and global peso notes. Often proceeds from dollar-denominated bonds have been used to buy back global bonds from earlier offerings to save on the interest costs of dollar debt.

Chart 48: Average inflation may stay outside the target range



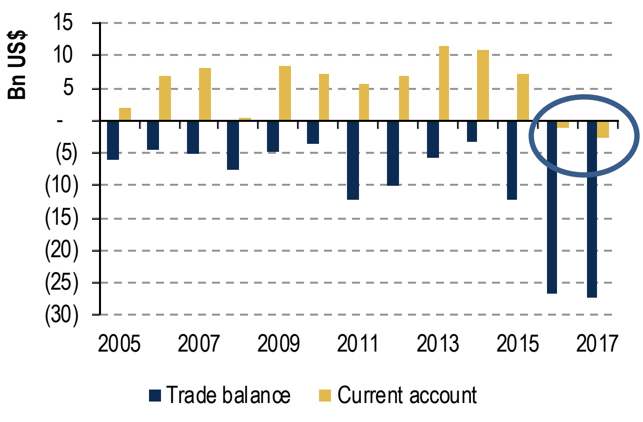
Source: CEIC data, BofAML, PEP estimates

Chart 49: Domestic demand has slowed



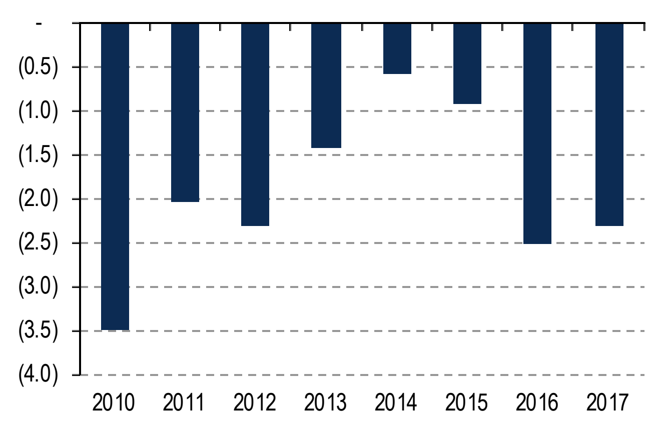
Source: CEIC data, PEP estimates

Chart 50: Record trade gap has pushed the current account into deficit



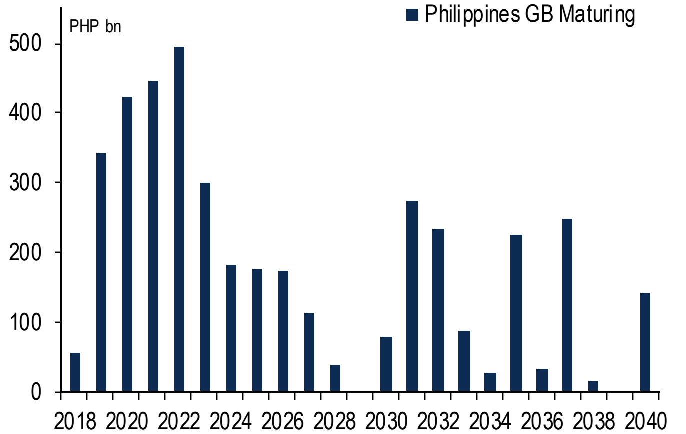
Source: CEIC data, PEP estimates

Chart 51: Deficit in % of GDP



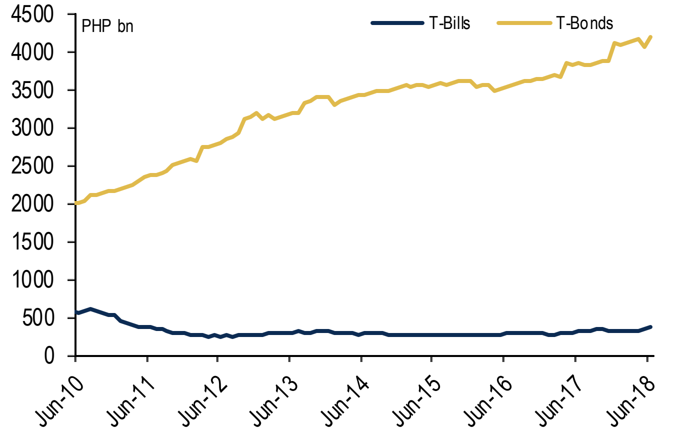
Source: CEIC data, PEP estimates

Chart 52: Maturity profile of Philippine government bonds



Source: Bureau of the Treasury

Chart 53: Outstanding Philippine government securities



Source: ADB, CEIC

Treasury bills. T-bills are government securities issued by the Bureau of the Treasury that mature in less than a year. These bills are typically offered in 91-, 182- and 364-day tenors, have zero coupons and are sold at a discount from the face value. They can be traded in the secondary market before maturity.

Fixed Rate Treasury Notes (FXTNs). Issued by the Bureau of the Treasury, these are interest-bearing notes with maturities of 2, 5, 7, 10, 15 and 25 years. Coupons are fixed and paid semi-annually.

Retail Treasury Bonds (RTBs). These government bonds are issued primarily by the Bureau of the Treasury and cater to retail investors. They are interest bearing, and the bonds are offered in 3- and 5-year tenors. Coupons are fixed and paid quarterly.

Corporate debt. The corporate debt market is relatively small compared with government bonds and limited to a handful of large local private corporations, such as San Miguel Brewery and Ayala Corporation. Typically, the bonds are issued in 2-7 year tenors. Coupons are usually floating with payments made quarterly. Corporate bonds are usually underwritten by financial institutions licensed by the Securities and Exchange Commission (SEC).

Auction and placement mechanism. In the secondary market, investors can purchase government securities through any of the Government Securities Eligible Dealers (GSEDs) or financial institutions licensed by the Securities and Exchange Commission. However, they have no obligation to make markets, and many do not make two-way quotes.

Purchase of FXTNs can be done through auctions in the primary market or over the counter in the secondary market. Auctions are usually held biweekly on Tuesdays, with settlements on Thursdays.

Derivatives market

Interest rate swaps. The market remains underdeveloped with poor liquidity. As such, it does not provide investors with a viable hedging instrument.

FX market

The FX market in the Philippines is generally illiquid and relatively small compared with others in the region, but it has grown significantly in the past decade. Average daily trading volume is at about US$800-1,200mn. Most transactions are concentrated in FX spot transactions, with the FX forwards and swap markets expanding at a more gradual pace. In 2013, the central bank took further steps to liberalize the foreign exchange

Table 61: Vital statistics and characteristics of the Philippines' FX market

FX products	Tradable product	Average daily trading volume	Average trading size	Bid-ask spread	Reuters Reference	Key facts
PHP Onshore						
Spot	PHP Spot	USD800-1200mn	USD3-10mn	PHP 0.01-0.05	PDSPESO	Proper documentation required Trading hours: 9:00-12:00 and 14:30-16:00 (Manila)
Forwards	Forwards	USD600-700mn	USD5-10mn	PHP 0.02-0.40	PHPF=	Forwards on PHP are available and liquid for tenor shorter than three months
PHP Offshore						
Forwards	NDF	USD600-700mn	USD3-10mn	PHP 0.02-0.10	PNDF PNDG	PHP is a non-deliverable currency Offshore entities can access the market through NDF Dollar settled NDF on PHP are available up to 10y tenors and liquid for tenors shorter than 2y.
Options	NDO	USD50-100mn	USD10-30mn	0.5-1.0 vol	TTDE	Dollar settled NDO on PHP are available up to 5y tenors and liquid for tenors less than 2y

Source: Reuters

market, doubling the maximum amount of dollars that citizens can buy from banks without documentation to US$120,000.

Investor base

The government, financial institutions and retail investors are more active in bond issues of short- to medium-term maturities. Pension funds, insurance companies and other asset management companies tend to invest in bonds of longer maturities.

The Government Service Insurance System (GSIS) and Social Security System (SSS) are the largest state pension funds, and mandated by the SEC to adopt a conservative investment strategy focused on government debt and shares of leading local companies. The local mutual fund industry is one of the least developed in Asia and has a narrow investor base with only a few institutional investors in the local bond market. Licensed insurance firms such as Ayala Life Assurance, Philam Insurance and Sun Life Financial are also major investors in government bonds of longer tenors.

Rules, regulations, capital controls and taxation

Foreign investors are free to invest in government securities. The central bank has not imposed any capital controls yet. Resident and non-resident investors are subject to a 20% withholding tax on interest income. However, there is no capital gains tax levied on government securities for all investors. The withholding tax on interest income can be reduced contingent on double taxation treaties.

Clearing and settlement

Transactions are cleared through the Registry of Scripless Securities (RoSS), administered by the Bureau of the Treasury. Standard settlement for government securities is T+1. Deviation from the standard is possible if negotiated and agreed upon by both parties. Trading hours (Mon-Fri) are from 9:30am to noon, and from 2:30pm to 4:00pm.

Global peso notes

The government has started to develop an offshore peso curve, which initially saw robust offshore demand even though the trading dynamics and liquidity of these issues have been somewhat limited. However, liquidity remains a hurdle for many investors and the government has been slow to issue further bonds and has no plans for issuance in 2018.

The global peso notes (GPN) trade *pari passu* to USD sovereign bonds and are governed by New York Law, but only sovereign USD bonds are deliverable into CDS. The GPN offers low cost funding for the sovereign and is linked to the USD bonds in terms of a credit event.

Though the face value currency is the Philippine peso, settlement is made in US dollars in the offshore market. Investors bear interest rate and foreign exchange risks. The attraction of the bonds is that foreign investors are not subject to the onshore withholding taxes and the issuer benefits from not having to take on FX risk.

Table 62: Summary of the Philippines bond markets and products

Instrument	Treasury bills (T-bills)	Fixed Rate Treasury Notes (FXTNs)	Retail Treasury Bonds (RTBs)
Issuer	Bureau of the Treasury	Bureau of the Treasury	Bureau of the Treasury
Currency	PHP	PHP	PHP
Principal	PHP10,000	PHP10,000	PHP5,000
Tenor	91, 182 and 364 days	2,3,4,5,7,10,20 and 25 years	3-10 years
Interest rate/coupon	Issued at discount	Fixed	Fixed
Coupon Payments	Zero coupon	Semi-annual	Quarterly
Day Count Calculation	Actual/360	30/360	30/360
Amortization Schedule	Bullet	Bullet	Bullet
Form	Scripless	Scripless	Scripless
Amount outstanding (as of Apr 2015)	PHP332bn	PHP1,950bn	PHP958bn
Secondary Market			
Trading	OTC	OTC	OTC
Quotation Convention	Yield (to 4 decimal places)	Yield (to 4 decimal places)	Yield (to 4 decimal places)
Settlement Period	T+1 (or negotiated)	T+1 (or negotiated)	T+1 (or negotiated)
Average Daily Turnover	PHP2bn	PHP8bn	PHP1bn
Bid/offer spread (0-5y)	15bp	15bp	15bp
Bid/offer spread (5y+)	-	20bp	20bp
Average trade size	PHP50mn	PHP30mn	PHP30mn
Clearing Mechanism	RoSS (Registry of Scripless Securities)	RoSS (Registry of Scripless Securities)	RoSS (Registry of Scripless Securities)
Major players	Banks, government agencies, financial institutions and retail investors	Banks, Pension funds, insurance companies, asset management funds	Banks, Pension funds, insurance companies, asset management funds
Trading hours	9:00am-12:00pm and 2:00-4:00pm (Manila time)	9:00am-12:00pm and 2:00-4:00pm (Manila time)	9:00am-12:00pm and 2:00-4:00pm (Manila time)
Bidders	Bank and non-bank financial institutions licensed to deal in the primary market via Government Securities Eligible Dealers (GSEDs)	Bank and non-bank financial institutions licensed to deal in the primary market via Government Securities Eligible Dealers (GSEDs)	Individual investors through appointed underwriters. No restrictions on foreign investors.
Regulations			
Restrictions on Foreign Investment	No restrictions; however, purchases have to be financed through inward foreign exchange remittances or from withdrawals against foreign currency accounts.	No restrictions; however, purchases have to be financed through inward foreign exchange remittances or from withdrawals against foreign currency accounts.	No restrictions; however, purchases have to be financed through inward foreign exchange remittances or from withdrawals against foreign currency accounts.
Custodian	Registry of Scripless Securities (RoSS)	Registry of Scripless Securities (RoSS)	Registry of Scripless Securities (RoSS)
Withholding Tax	Subject to 20% final withholding tax, applies to residents and nonresidents	Subject to 20% final withholding tax, applies to residents and nonresidents	Subject to 20% final withholding tax, applies to residents and nonresidents
Capital gains Tax	No capital gains tax on all government securities, for residents and nonresidents	No capital gains tax on all government securities, for residents and nonresidents	No capital gains tax on all government securities, for residents and nonresidents
Entry/Exit Tax	None	None	None
Primary Auctions			
Auction Style	English auction (multiple price auction) via Government Securities Eligible Dealers (GSEDs) and through negotiated sale	Dutch auction via Government Securities Eligible Dealers (GSEDs) and through negotiated sale	Book building and public offering through appointed underwriters
Average Issue Size	PHP3bn	PHP2-4bn	PHP20-40bn
Minimum Amount of Tender	PHP10mn	PHP10mn	Variable up to PHP100,000

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	Baa2/BBB/BBB	Baa2/BBB/BBB
2017	Baa2/BBB/BBB	Baa2/BBB/BBB
2016	Baa2/BBB/BBB	Baa2/BBB/BBB
2015	Baa2/BBB/BBB	Baa2/BBB/BBB
2014	Baa3/BBB/BBB	Baa3/BBB/BBB-
2013	Ba1/BBB-/BBB-	Baa3/BBB-/BBB-
2012	Ba1/BB+/BB+	Ba1/BB+/BB+
2011	Ba2/BB/BB+	Ba2/BB/BB+
2010	Ba3/BB/BB	Ba3/BB/BB
2009	Ba3/BB-/BB	Ba3/BB-/BB
2008	B1/BB-/BB	B1/BB-/BB
2007	B1/BB-/BB	B1/BB-/BB
2006	B1/BB-/BB	B1/BB-/BB
2005	B1/BB-/BB	B1/BB-/BB
2004	Ba2/BB/BB	Ba2/BB/BB
2003	Ba1/BB/BB	Ba1/BB/BB
2002	Ba1/BB+/-	Ba1/BB+/
2001	Ba1/BB+/-	Ba1/BB+/

Source: , Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+1
Basis: Act/360 or 30/360
Coupon frequency: Semi-annual or quarterly

CCS

Fixing: 6m USD LIBOR
Coupon frequency: Semi-annual; USD day count Act/360, local Act/365
Coupon frequency: Monthly, quarterly, semi annual

Bloomberg pages

PHP Curncy ALLQ<GO> – FX rates
OTC PHP<GO> – Market monitor
CBPH<GO> – Bangko Sentral ng Pililpinas page
BTRP<GO> – Bureau of Treasury auction results
FMPH<GO> – Fund Manager Association
PDEX<GO> – Philippine Dealing & Exchange Corp.

Reuters pages

BANGKO – Central bank page
PDSPESO – FX market volumes and fixing
PHIBOR – Philippine Interbank Offered Rate
ASIANNDF= – Asia NDF markets and fixing
PDSMENU – Philippine Dealing System
PDSTSY – Treasury Reference rates

Useful official websites

Central Bank of the Philippines (BSP)
www.bsp.gov.ph

Department of Finance
www.dof.gov.ph

Bureau of the Treasury
www.treasury.gov.ph

Securities and Exchange Commission
www.sec.gov.ph

Department of Trade and Industry
www.dti.gov.ph

National Statistics Office
www.census.gov.ph

Philippines Social Security System
www.sss.gov.ph

Useful market websites

Philippines Dealing and Exchange Corporation
www.pdex.com.ph

Money Market Association of the Philippines
www.mart.com.ph

*Links are to third-party websites, and do not contain BofAML Global Research.

Singapore

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Overview

Singapore's bond market is one of the most developed in Southeast Asia. Domestically, local currency government securities have grown significantly since the first Singapore Government Securities (SGS) were introduced in 1998. As of June 2018, the local currency govt securities market has increased to SGD123bn.

Monetary Authority of Singapore

Objectives

The Monetary Authority of Singapore (MAS) was formed on 1 January 1971 after Parliament passed the Monetary Authority of Singapore Act in 1970. Prior to that, monetary functions were performed by several government departments and agencies. The MAS' primary monetary policy objective is to maintain price stability as a sound basis for sustainable economic growth ("promote sustained non-inflationary economic growth"). The MAS also manages the country's foreign reserves and supervises financial institutions and markets in Singapore. The MAS determines the scope of financial services activities that should be regulated, and sets the rules and standards governing the behavior of financial markets and institutions.

Legal framework

The MAS Act of 1970 conferred authority to the central bank to regulate the domestic financial services sector, and is entrusted to promote monetary stability and credit and exchange policies conductive to the growth of the economy. The MAS is also the sole authority of currency issuance, following its merger with the Board of Commissioners of Currency in October 2002. The MAS administers the various statutes pertaining to money, banking, insurance, securities and the financial sector.

Part IV of the MAS Act sets out the scope of responsibilities and functions of the central bank. The MAS acts as a banker and financial agent of the government, subject to the Financial Procedure Act (Cap 109), and manages the government's external assets. The central bank also has the authority to issue directions, approve/disapprove, and control the operations of financial institutions.

Decisions

The Monetary Authority of Singapore Act provides for a Board of Directors, the members of which, including the chairman and deputy chairman, are appointed by the President of Singapore. Including the deputy chairman, the board consists of at least

Table 63: Key facts

Name	Monetary Authority of Singapore
Founded	1971
Governor	Mr Ravi Menon (Managing Director)
Board members	9
Autonomous	No
Government representative on board	Deputy prime minister, Minister for Finance, and Minister for Education
Terms	-
Inflation target	-
Latest move	Increased slightly the slope of the S$NEER policy band (13 April 2018)

Source: Monetary Authority of Singapore

Table 64: Key links*

- Main page
- Board members
- Inflation Report
- Calendar, communiqués and minutes
- Statistics
- Reports
- Presentations and speeches
- Legal framework
- English version
- Ministry of Finance
- National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

four, and not more than nine, other directors. Directors are appointed for a three-year term and eligible for reappointment. The managing director is the chief executive entrusted with the day-to-day administration of the MAS, and has the authority to make decisions on behalf of the central bank within the scope set in the act. He or she is supported by three deputy managing directors, and seven assistant managing directors.

Board meetings take place at least once every three months and decide on major changes to the regulatory framework and supervisory policies. Major changes to policies and strategies relating to financial center development and international and regional relations are approved at the meetings as well. Decisions made at board meetings are legally binding if a minimum of four board members are present, or if a simple majority of the directors agree. In case of a tie, the chairman has the deciding vote. The board is accountable to Parliament through the Minister-in-charge of MAS.

The Monetary and Investment Policy Meeting (MIPM), held fortnightly, oversees the investment of MAS' reserves. Monetary policy formulation is undertaken as a separate function by the Economic Policy Group. It reviews monetary policy semi-annually and recommends appropriate parameters for the trade weighted exchange rate band. The deliberations and decisions on issues relating to the formulation and implementation of monetary policy are undertaken by the MIPM.

The current board & key monetary policy units

The current Chairman of the Board, Tharman Shanmugaratnam, is also Singapore's deputy prime minister and coordinating minister for economic and social policies. Lim Hng Kiang, special advisor at the Ministry of Trade and Industry, is the board's deputy chairman. Ravi Menon was appointed MAS' managing director in 2011 and had his term extended recently to until June 2019; previously, he was permanent secretary at the Ministry of Trade and Industry and deputy secretary at the Ministry of Finance. The rest of the board members are listed in Table 65.

The Monetary Policy and Investment Group formulates and implements Singapore's monetary policy, and is headed by Deputy Managing Director Jacqueline Loh. She oversees the Economic Policy Group (EPG) and the Markets and Investment Group, with

Table 65: Board of Directors and key directors formulating Singapore's monetary policy

Name	Date originally appointed	Current term ends	Background
Tharman Shanmugaratnam, chairman	May 2011	Jun 2018	Deputy Prime Minister and Coordinating Minister for Economic and Social Policies
Lim Hng Kiang, deputy chairman	Jun 2006	Jun 2019	Special advisor at Ministry for Trade and Industry; originally appointed board member in May 1998, assumed post of deputy chairman in January 2001; stepped down from the deputy chairman position in August 2004 when appointed Minister of Trade and Industry.
Heng Swee Keat, board member	Aug 2004	Jun 2018	Minister for Finance; originally appointed board member in August 2004, and was managing director from February 2005 to April 2011.
Ong Ye Kung, board member	Aug 2016	May 2019	Minister for Education
Quek See Tiat, board member	Mar 2013	Jun 2018	President, Council for Estate Agencies
Peter Ong Boon Kwee, board member	Oct 2009	Jun 2018	Head of Civil Service / Permanent Secretary at Prime Minister's Office
Tan Chorh Chuan, board member	Jun 2012	Jun 2018	Chief Health Scientist, Ministry of Health Executive Director, MOH Office for Healthcare Transformation
V K Rajah, board member	Nov 2014	Oct 2017	Senior Counsel
Ravi Menon, board member and managing director	Apr 2011	Jun 2019	Former Permanent Secretary at the Ministry of Trade & Industry and deputy secretary at the Ministry of Finance
Goh Chok Tong, senior advisor to MAS	May 2011	-	Emeritus senior minister
Ong Chong Tee, deputy managing director	Mar 2005	-	Oversees regulation and supervision of all banking, insurance and capital markets entities licensed in Singapore
Jacqueline Loh, deputy managing director	Aug 2013	-	Oversees central banking functions of monetary policy and markets and investments, as well as development, international and fintech & innovation functions
Ho Hern Shin, assistant managing director	Oct 2017	-	Banking Departments I, II and III, Insurance Department and the Anti-Money Laundering (AML) Department
Edward Robinson, assistant managing director, Economic Policy Group; Chief Economist	Mar 2010	-	Joined MAS in 1992, and is responsible for the formulation of Singapore's monetary policy
Loo Siew Yee, assistant managing director	Oct 2017	-	Oversees prudential policy, macro-surveillance and conducts specialist risk supervision

Source: Monetary Authority of Singapore

the later in charge of reserve and monetary and domestic markets management. The EPG is headed by Edward Robinson, who is an assistant managing director.

Monetary policy regime and instruments

Singapore is unique in that its monetary policy is centered on managing the exchange rate based on a "band-basket-crawl" framework. The main reason for doing so is due to the small and open nature of Singapore's economy, with exports and imports accounting for more than 150% of GDP. The Monetary Authority of Singapore also found that the exchange rate is the most effective instrument in managing inflation. The choice to use the exchange rate as the intermediate target of monetary policy implies the MAS gives up control over domestic interest rates, and money supply. The MAS implements its exchange rate policy through spot or forward FX transactions.

The liquidity framework also ensures an appropriate amount of liquidity in the banking system, through daily money market operations and two liquidity facilities: the intraday liquidity facility and the standing facility. Money market operations are carried out every morning at about 9:45am local time. The extent and size of money market operations depend on the net liquidity impact on the banking system, as well as the maturity of past money market operations and net issuance of Singapore Government Securities (SGS). The instruments used are (1) direct borrowing or lending; (2) foreign exchange swaps; (3) repurchase agreements (repos) on SGS; and (4) MAS bills.

The central bank could supply less or more liquidity than required, depending on the economic climate and market conditions. For example, during the onset of the Global Financial Crisis in 2008, the MAS deliberately left more liquidity in the domestic banking system to ease tightness in the funding markets. The excess liquidity was withdrawn in FY2011-2012 as the global markets stabilized.

Exchange rate regime and instruments

Singapore has followed an exchange rate management framework called basket band crawl (BBC) since 1980. The nominal effective exchange rate (NEER) is calculated by weighting the bilateral exchange rates vis-à-vis currencies of Singapore's major trade partners and competitors. The basket's composition is revised periodically to take into account changes in trade patterns. The Monetary Authority of Singapore does not disclose the components of the basket or the currency weights.

The NEER is allowed to float within a policy band (managed float regime), which is typically allowed to crawl to adjust with fundamentals. This is done to mitigate short-term volatility and prevent misalignment in the currency. Changes to the level, slope and width of the exchange rate policy band are communicated publicly on a semi-annual basis, but the exact parameters are not disclosed. Out-of-schedule meetings and decisions, though rare, have occurred twice in the past decade.

Credit regulation functions

The Banking Act (Cap 19) sets out regulations for commercial banks to follow. Banks in Singapore maintain cash balances in current accounts with the Monetary Authority of Singapore to meet reserve requirements and conduct settlement of interbank transactions. Banks are required to maintain a minimum cash balance (MCB) equivalent to 3% of their liabilities base. The MAS also mandates that a bank must maintain a total capital adequacy ratio of 10%. In addition, regulations and guidelines are set for merchant banks, finance companies, insurance companies, and financial advisers and money brokers. The central bank imposes financing restrictions for loans, such as those for motor vehicles and mortgages, and regulates credit facilities of financial institutions.

Table 66: Meetings and releases in 2018

	Monetary policy meeting	Monetary policy minutes*
Apr	Fri, 13 Apr	Fri, 27 Apr
Oct	mid-Oct	end-Oct

Source: The Monetary Authority of Singapore. * Date refers to the publication of Macroeconomic review report.

The MAS has adopted macro-prudential measures to control asset price inflation and avoid a build-up of imbalances. These measures fall into two broad categories: (1) to restrain credit extended to the property market (loan-to-value ratios, debt service ratios, caps on property lending); and (2) fiscal measures to discourage property transactions of a speculative nature (transaction taxes such as stamp duties and capital gains). Recent property measures include tighter loan-to-value limits (50% for second housing loan), higher additional buyer stamp duties (15% for foreigners and 5% for permanent residents), as well as introducing a new total debt servicing ratio (TDSR) framework in June 2013. The LTV and stamp duties were further unexpectedly tightened in July 2018.

Current policy stance

The Monetary Authority of Singapore exited its neutral stance on 13 April 2018 by increasing slightly the slope of the S$NEER policy band. The width of the band and the level at which it is centered were left unchanged.

MAS signaled its hawkish outlook regarding inflation in its last policy statement. It expects core inflation to rise gradually in 2018 and reach the upper half of its 1-2% forecast range, on the back of improving labor market conditions and faster wage growth. This is in line with our view that inflation could be at a critical point of inflection and more pervasive than suggested by headline figures. MAS expects a steady pace of economic expansion, with 2018 growth expected to "come in slightly above the middle of the forecast range of 1.5-3.5%".

Meetings, data and information dissemination

The monetary policy deliberations are conducted biannually at the MIPM, typically during the second week of April and October, and are followed by the release of a monetary policy statement. The MAS publishes a macro-economic review a week or two following the policy meeting. This includes analysis and assessment of Singapore's economy, which form the basis of its monetary policy decisions. Joint press releases on consumer price developments are released monthly with the Ministry of Trade and Industry. The central bank also publishes quarterly statements on recent economic developments.

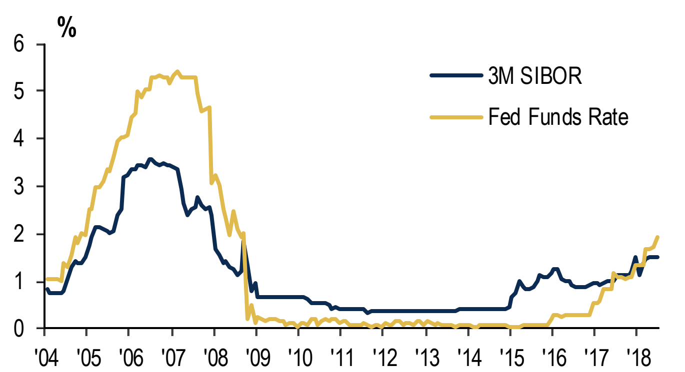
Fiscal policy and debt issuance

The 2018 bond auction calendar has scheduled 15 bond auctions (Including T-bills and T-bonds), up from 13 in 2017. We estimate gross annual issuance to be SGD29bn, of which SGD9.2bn will be raised via 1-year T-bills and the rest via bonds. The key market drivers are monthly CPI and non-oil domestic exports. The macroeconomic outlook for Singapore is generally stable with a healthy fiscal balance, no foreign debt and high FX reserves. As an open economy, Singapore's GDP is driven largely by manufacturing, financial services, gaming and tourism.

Bond market

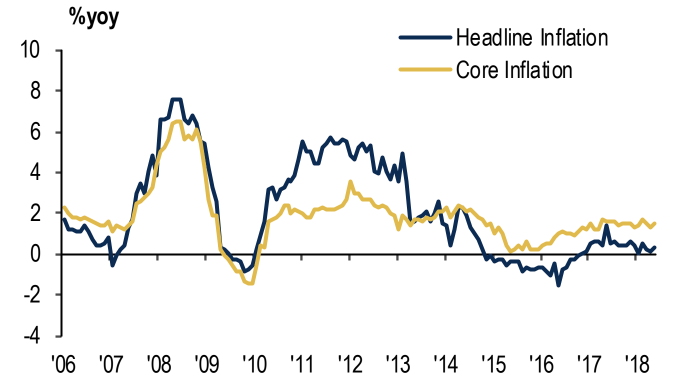
With prudent fiscal policy, Singapore has had extended periods of healthy budgetary surpluses and does not finance any expenditure shortfalls by issuing government bonds. The primary objective of developing the bond market is thus to deepen the domestic capital markets by providing a robust government yield curve as a pricing benchmark for private debt securities, and to foster the growth of an active secondary market to enhance risk management. There are three broad categories of bonds in Singapore: SGS T-bills, SGS bonds and corporate bonds.

Chart 54: Three-month SIBOR vs Fed funds rate



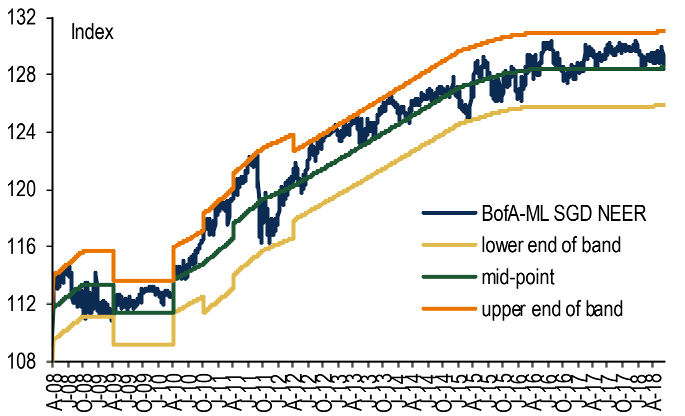
Source: CEIC

Chart 55: Headline and core inflation



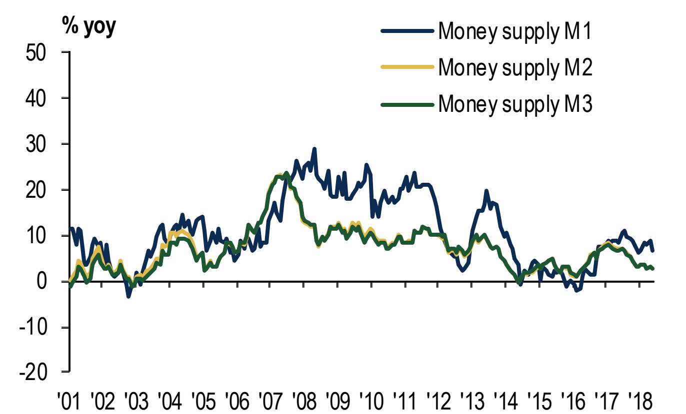
Source: CEIC

Chart 56: BofAML SGDNEER Index



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 57: Money supply growth



Source: CEIC

Money market. Singapore has a sizable repo market to support market-making activities of the primary dealers. This enables primary dealers to take long/short positions, such as buying one bond and selling another to take advantage of yield curve arbitrage opportunities. Typical transactions are about S$25mn, traded 9:00-15:30 (Singapore) with a settlement of T+1.

SGS T-bills. SGS T-bills are sold at a discount and offered at 1y, with a minimum denomination of S$1,000 (par value). Typical issue size is around SGD2.5bn. The issuance of 3m and 6m T-bills has been discontinued, bringing the outstanding T-bill amount to SGD10.1bn now from SGD60bn at end-2012. See Chart below.

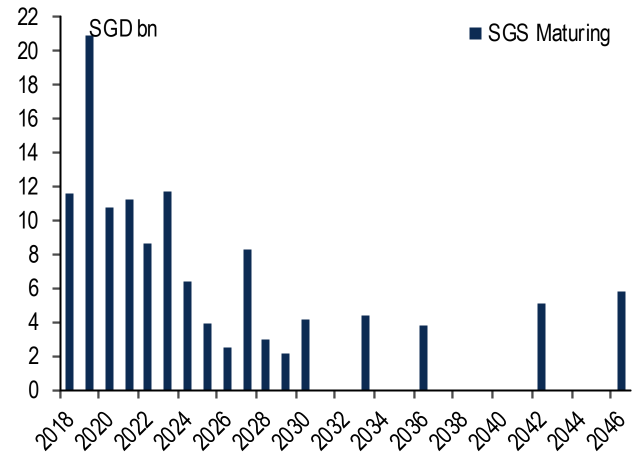
SGS bonds. SGS bonds are usually of a longer duration, with tenor ranging 2-20 years. Bonds are denominated in nominal amounts of S$1,000 (par value) with fixed-rate coupons issued semi-annually. Average issuance sizes are usually within SGD2-3bn, and bond auctions are based on an annual calendar, typically announced each September for the following year (see the SGS website).

Corporate debt. The majority of corporate bonds in Singapore are issued by government-linked companies and statutory boards, such as Temasek Holdings, Keppel Corp, etc. The three largest issuers are the Housing Development Board (HDB), Public Utilities Board (PUB) and Land Transport Authority.

Auction and placement mechanism. All SGS securities are auctioned using a uniform price auction. Successful bids, whether competitive or noncompetitive, are allotted at the same uniform yield, which is the highest accepted yield (cut-off yield) of successful competitive bids submitted at the auction. All entities and individuals, including nonresidents, are free to bid in the auction. However, applications have to be submitted through MAS-certified primary dealers.

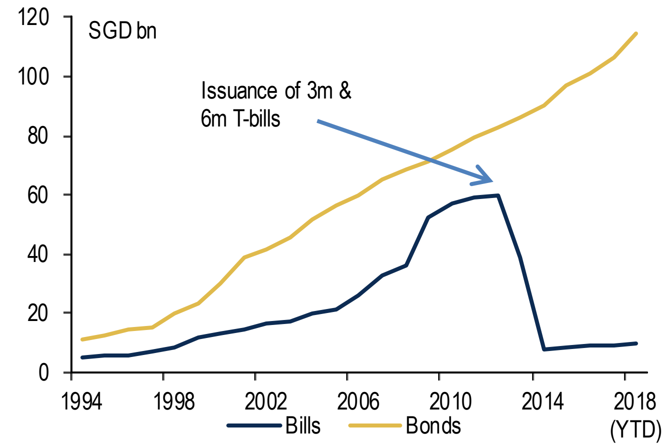
In all SGS auctions, 40% of the total issuance amount is reserved for noncompetitive bids, one in which the bidder does not specify a price in percentage yield. For competitive bids, successful placement depends on the price quoted. A lower yield represents a more competitive bid, as it is an indication of a lower interest rate being accepted.

Chart 58: Maturity profile of Singapore government securities (SGD bn)



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 59: Outstanding local currency bonds by type (SGD bn)



Source: BofA Merrill Lynch Global Research, MAS

Derivatives

Interest rate swaps. Singapore is the second largest interest rate derivatives market in Asia, according to the latest BIS survey. (Bloomberg swap tickers are SDSWx with x standing for tenors of the IRS). Average ticket sizes are about SGD20mn, with varying tenor of 1-15 years, and are actively traded from 8:30-17:00 (Singapore). Fixing is based on 6m SOR with T+1 settlement. The 6m SOR fixing means there is no zero bound on interest rates, which can cause IRS yields to turn negative based on the FX-implied interest rate fixing.

FX market

Singapore is the world's third largest foreign currency exchange center, and the second largest in Asia behind Tokyo, making up more than 5% of total global turnover. Trading in the SGD averages US$6-7bn daily in the spot market and US$3-4bn in the forwards market. Similar to India, Singapore has two deliverable forwards markets: onshore and offshore. They share similar characteristics, though the trading in the offshore forwards market pales in comparison with that in the onshore market.

Investor base

The Central Provident Fund is a major holder of Singapore bonds. Foreigners can access the bond market without pre-approval and there is no capital gain or income tax on the bond investments. Generally, primary dealers, insurance companies, fund managers and finance companies are the key bondholders.

Operationally, primary dealers provide liquidity into the SGS market by quoting two-way prices under all market conditions and underwrite issuance of debt securities during SGS auctions. Currently, there are 13 banks certified as primary dealers with the MAS. Primary dealers also play a critical role by providing accurate and timely feedback to the central bank, and in turn assist in the development of the SGS market in Singapore.

Table 67: Summary statistics of Singapore derivative products and their markets

Product	Average daily trading volume	Average transaction size	Bid-ask spread	Bloomberg Reference
Interest rate swaps				
1-year	SGD500mn	5K DVO1	2bp	ABSIRFIX
5-year	SGD200mn	10K DVO1	2bp	NA
10-year	SGD100mn	10K DVO1	2bp	NA
Cross-currency swaps				
	SGD200-300mn 5y tenor	SGD50mn 5y tenor	3-5bp	NA
Swaptions				
1x5	NA	SGD50mn	2 vol	SDSP015 Curncy
5x5	NA	SGD5mn	2 vol	SDSP055 Curncy

Source: Bloomberg

Table 68: Vital statistics and characteristics of Singapore's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
SGD Onshore						
Spot	SGD Spot	USD6-7bn	USD3-10mn	SGD 0.0002-0.0006	SGD=D2	Banks can trade SGD in the spot market
Forwards	Forwards	USD3-4bn	USD10-50mn	SGD 0.00002-0.0005	PYSGD	Forwards are available up to 10y tenors and are liquid for tenors shorter than 1y
SGD Offshore						
Forwards	Forwards	USD1bn	USD10-50mn	SGD 0.00002-0.0005	PYOS	Deliverable forwards are available till tenor of 10 years and are liquid for tenor shorter than 1 year
Options	FX options	USD500mn	USD30-50mn	0.2-0.8vol	TTDE	Options are available up to 10y tenors and are liquid for tenors shorter than 2y

Source: Reuters

The secondary market is dominated by banks, merchant banks and stock-broking firms that also participate actively in the SGS market by buying and selling securities, either as principal or as agent. Beginning June 2011, retail investors were also allowed to trade SGS on the Singapore Exchange (SGX). This provides an additional avenue for retail investors to diversify into safe but higher-yielding alternatives to bank deposits. Though there is no official estimate, we estimate foreign ownership is nearly 20-25% of outstanding bonds.

Rules, regulations, capital controls and taxation

Singapore is an open market economy with no capital controls. All entities and individuals, including non-residents, are free to purchase government debt securities in Singapore, without any restrictions. In addition, funds can be freely remitted in and out of Singapore. Resident and non-resident investors are exempted from interest income tax, and there is no capital gains tax. Bonds issued under the Qualifying Debt Securities (QDS) scheme are granted concessionary tax treatment, and there is no stamp duty imposed on any securities. Financial institutions and corporations enjoy a 10% concessionary tax on interest income.

Clearing and settlement

Transactions are cleared on a delivery versus payment basis over the MAS Electronic Payment System (MEPS+) and MAS' SGS book-entry clearing system. Trading of SGS securities is from 9:00-11:30 and 2:00-16:30 (Singapore) with a T+1 settlement date convention.

Table 69: Summary of Singapore bond markets and products

Instrument	Singapore Government Securities Bills (SGS Bills)	Singapore Government Securities Bonds (SGS Bonds)
Issuer	Monetary Authority of Singapore	Monetary Authority of Singapore
Currency	SGD	SGD
Principal	SGD1,000 (par)	SGD1,000 (par)
Tenor	1y	2, 5, 10,15 and 20 y
Interest rate/coupon	Issued at discount	Fixed
Coupon Payments	Zero coupon	Semi-annual
Day Count Calculation	Actual/365	Actual/Actual
Amortization Schedule	Bullet	Bullet
Form	Registered	Registered
Amount outstanding (as of 2014)	SGD8bn	SGD90bn
Secondary Market		
Trading	OTC (SGS Bills not listed on Singapore Exchange)	OTC (SGS Bills not listed on Singapore Exchange)
Quotation Convention	Yield	Yield
Settlement Period	T+1	T+1
Average Daily Turnover	SGD1.568mn	SGD1,071mn
Bid/offer spread (0-5Y)	5bp	3bp
Bid/offer spread (5Y+)	NA	3bp
Average trade size	SGD5mn for on the runs (benchmarks) and off the runs	SGD5mn for on the runs (benchmarks) and off the runs
Clearing Mechanism	MAS Electronic Payment System (MEPS+)	MAS Electronic Payment System (MEPS+)
Major players	Banks, merchant banks, stock-broking firms	Banks, merchant banks, stock-broking firms
Trading hours	9:00-11:30 and 14:00-16:30 (Singapore time)	9:00-11:30 and 14:00-16:30 (Singapore time)
Bidders	All entities or individuals, including nonresidents, may participate. Applications have to be submitted through an approved SGS primary dealer	All entities or individuals, including nonresidents, may participate. Applications have to be submitted through an approved SGS primary dealer
Restrictions on Foreign Investment	No restrictions; foreign investors can freely remit funds in and out of Singapore	No restrictions; foreign investors can freely remit funds in and out of Singapore
Custodian	SGX central depository (CDP)	SGX' central depository (CDP)
Interest Income Tax	Individuals are exempted from interest income tax, but institutions and corporations are taxed at a 10% concessionary rate, for residents and non-residents.	Individuals are exempted from interest income tax, but institutions and corporations are taxed at a 10% concessionary rate, for residents and non-residents.
Capital gains Tax	No capital gains tax on government securities, for residents and non-residents.	No capital gains tax on government securities, for residents and non-residents.
Entry/Exit Tax	None	None
Primary Auctions		
Auction Style	Uniform pricing; successful competitive and noncompetitive bidders are allotted securities at a uniform yield, which is the cut-off yield of successful competitive bids submitted at the auction.	Uniform pricing; successful competitive and noncompetitive bidders are allotted securities at a uniform yield, which is the cut-off yield of successful competitive bids submitted at the auction.
Average Issue Size	SGD2.3-3.7bn	SGD2-3bn (benchmark issues)
Minimum Amount of Tender	SGD1,000	SGD1,000

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	Aaa/AAAu/AAA	/AAAu/AAA
2017	Aaa/AAAu/AAA	/AAAu/AAA
2016	Aaa/AAAu/AAA	/AAAu/AAA
2015	Aaa/AAAu/AAA	/AAAu/AAA
2014	Aaa/AAAu/AAA	/AAAu/AAA
2013	Aaa/AAAu/AAA	/AAAu/AAA
2012	Aaa/AAAu/AAA	/AAAu/AAA
2011	Aaa/AAAu/AAA	/AAAu/AAA
2010	Aaa/AAA/AAA	/AAA/AAA
2009	Aaa/AAA/AAA	/AAA/AAA
2008	Aaa/AAA/AAA	/AAA/AAA
2007	Aaa/AAA/AAA	/AAA/AAA
2006	Aaa/AAA/AAA	/AAA/AAA
2005	Aaa/AAA/AAA	/AAA/AAA
2004	Aaa/AAA/AAA	/AAA/AAA
2003	Aaa/AAA/AAA	/AAA/AAA
2002	Aaa/AAA/AAA	/AAA/AA+
2001	Aaa/AAA/AAA	/AAA/AA+

Source: , Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+1
Basis: Act/365 (SGS bills) or Act/Act (SGS Notes)
Coupon frequency: Semi-annual

IRS
Fixing: 6M SOR
Coupon frequency: Semi-annual; fixed/floating Act/365

CCS
Fixing: 6m SOR
Coupon frequency: Semi-annual USD day count Act/360, local Act/365

Bloomberg pages

SGD Curncy ALLQ<GO> – FX rates
OTC SGD<GO>
SIGB<GO> – Monetary Authority of Singapore page
MOSBSGD<GO> – Most traded bonds
ABSI <GO> – Association of Banks in Singapore

Reuters pages

MAS01 to MAS06 – Issuance, auctions, results
SGDDFIX=ABSG – SOR fixing
SIBOR= SIBOR fixing
ABSIRFIX1 – ABS Fixings Index

Useful official websites

Monetary Authority of Singapore (MAS)
www.mas.gov.sg

Ministry of Finance
www.mof.gov.sg

Ministry of Trade and Industry
www.mti.gov.sg

Singapore Government Securities
www.sgs.gov.sg

Central Provident Fund
www.cpf.gov.sg

Useful market websites

Singapore Stock Exchange
www.sgx.com

Singapore Foreign Exchange Market Committee
www.sfemc.org

Investment Management Association of Singapore
http://www.imas.org.sg

*Links are to third-party websites, and do not contain BofAML Global Research.

Taiwan

Ronald Man
Merrill Lynch (Hong Kong)

Xiaojia Zhi
Merrill Lynch (Hong Kong)

Overview

Taiwan offers a liquid investment grade bond market. Access to foreign investors is broad and foreign participation is small when compared with other Asia markets. Foreign investors may invest up to 30% of their total investment inflows in bank debentures, corporate bonds, deposits, government bonds and money market products. The rest must be invested in the equity market.

Taiwan is regarded as a regional leading indicator of the export and tech-orientated cycle. This is based on Taiwan's high tech export profile and its early release of trade and industrial production data when compared across the region. Despite the leading nature of Taiwan's economic data, US rates and the US economic cycle have significant influence over its swap curve.

Central Bank of the Republic of China (Taiwan) Monetary policy

Objectives

According to the Central Bank of the Republic of China Act, the bank's operational objectives include promoting financial stability; ensuring sound banking operations; maintaining the stable internal and external value of the currency; and, within the scope of these three objectives, fostering economic development. To achieve its operational objectives, the Central Bank of China (Taiwan) (CBC) conducts monetary management, Treasury Agency functions, currency issuance, clearing and settlement services, foreign exchange management, statistics and research, bank examination, and participates in international organizations.

Legal framework

The Central Bank of the Republic of China Act was first promulgated in 1935. The structure of the current CBC Act was not established until the first amendment in 1979. Since then, the CBC Act has been revised twice, in 1997 and 2002. However, the articles added or amended in these two revisions did not relate to the CBC's legal dependence, so the CBC's statutory dependence has not changed in more than three decades.

According to the current CBC Act, the bank is a subsidiary unit under the Executive Yuan, with the above-mentioned goals and objectives. The bank's administrative structure includes the Board of Directors, Board of Supervisors, and the governor and deputy governors. They are in charge of making policy, supervising and executing bank operations, respectively.

Table 70: Key facts

Name	Central Bank of the Republic of China (Taiwan) (CBC)
Founded	1928 (Shanghai) 1961 (Taiwan)
Governor	Yang Chin-Long
Board members	
Autonomous	14
Government representative on board	Minister of Finance; Minister of Economic Affairs
Term	5 years; may be reappointed when the term expires
Inflation target	No explicit target but 2.0% desirable
Latest move	12.5bp discount rate cut (30 Jun 2016)

Source: CBC

Table 71: Key links*

Main page
Board members
Calendar and minutes
Statistics
Reports
Presentations and speeches
Legal framework
English version
Ministry of Finance, R.O.C.
National Statistics, R.O.C.

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

Decisions

The board of directors is the highest decision-making body of the CBC. It consists of 11-15 directors, nominated by the Executive Yuan (Cabinet) and appointed by the president. Five to seven directors of the board are designated executive directors. According to the Central Bank of China Act, the governor of the central bank, the finance minister, and the economic affairs minister are ex officio directors and executive directors. Directors, except for ex officio directors, are appointed for five-year terms and can be reappointed upon the expiration of their terms. The board meets four times a year. Currently, the board consists of 14 members, six of whom are concurrently executive directors.

The Board of Supervisors is authorized to examine the bank's assets and liabilities, and to audit its accounts. It consists of five to seven supervisors, and all of them are nominated by the Executive Yuan and appointed by the president. There are five supervisors currently. Supervisors are appointed for three-year terms and may be reappointed upon the expiration of their terms, except the ex officio supervisor.

The current board

Yang Chin-long is currently the governor for the Central Bank of China, after the previous governor Pemg Fai-nan retired on 25 February 2018. So far in the office, Mr. Yang has maintained FX and rates policies continuity, increased policy communication, and improved policy transparency. We believe this will help enhance policy transmission and smooth market volatilities.

Monetary policy regime and instruments

The Central Bank of China uses various policy instruments, including open market operations, discounts and temporary accommodations, required reserve ratios and re-deposits of financial institutions to regulate financial conditions and to achieve monetary policy objectives. The CBC may adjust the policy interest rate, the discount rate (currently at 1.375%) to influence the market rates. The policy rate decision is usually determined at the quarterly monetary policy meetings. The CBC cut policy rate for four consecutive quarters with a total of 50bp between September 2015 and June 2016 to boost growth momentum, and has kept interest rates unchanged since then.

Exchange rate regime and instruments

Prior to February 1979, a central clearing and settlement system was used to manage foreign exchange in the Republic of China. Following the establishment of the Taipei Foreign Exchange Market in February 1979, a flexible exchange rate system was formally implemented. Since then, the market has determined the NT dollar exchange rate. However, the CBC may intervene when the market is disrupted by seasonal or irregular factors.

Table 72: Board members – Executive Directors

Name	Date originally appointed	Current term ends	Background	Known policy stance
Chin-long Yang	Feb 2018	Jan 2023	PhD in economics, University of Birmingham; current governor of CBC	Yang will likely maintain Perng's policy stance against currency speculation and improve policy transparency and communication with the financial markets.
Yu-jer Sheu	Apr 2016	Jan 2021	Master's in Law, Harvard University; current finance minister	Sheu pledged for tax reform scheme in the near term, including a reduction on aggregate income tax.
Jong-Chin Shen	Feb 2018	Jan 2023	Master in Commerce Automation and Management, National Taipei University of Technology; current economic affairs minister	Shen's top priority is to ensure Taiwan's electricity supply is stable. He also wants to create a nurturing environment for enterprises to attract investment and talents.
Tzung-Ta Yen	Jan 2010	Jan 2020	PhD in economics, Michigan State University; deputy governor of the CBC	No clear preferences revealed. Yen in general is recognized by the market as having a pro-FX intervention bias.
Nan-Kuang Chen	Feb 2018	Jan 2023	PhD in economics, University of Minnesota; current vice president at Central Bank of China	No clear preferences revealed. He leads the digit-currency research in the CBC.
Ming-Yih Liang	Jan 2005	Jan 2020	PhD in economics, Harvard University; economics professor at National Taiwan University	No clear preferences revealed.

Source: Central Bank of the Republic of China (Taiwan)

Table 73: Meetings and releases in 2018-19

Monetary policy meeting	Monetary policy minutes
27 Sep	8 Nov
20 Dec	31 Jan 2019
21 Mar 2019	2 May 2019
20 Jun	1 Aug 2019

Note: These are expected dates. Source: CBC

Credit regulation functions

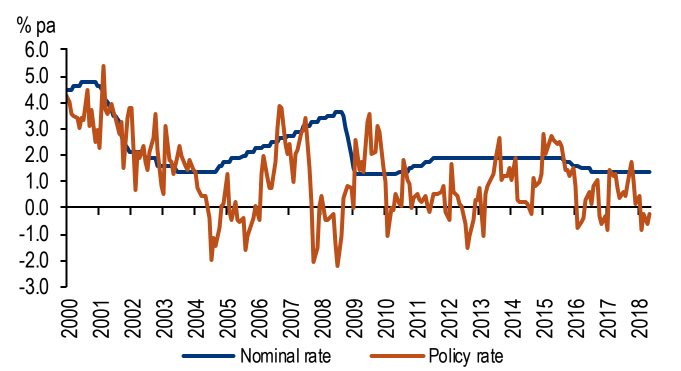
To restrict certain types of credit extended by financial institutions, the Central Bank of China has been imposing selective credit control measures. In June 2010, the CBC launched several measures aimed to keep home prices in check. And in June 2012, it imposed selective credit controls on luxury housing.

The CBC announced additional restrictions to the housing loan process on 27 June 2014 in an effort to slow down over-heating in the residential property market and reduce risks to financial institutions. In particular, the CBC introduced a maximum loan-to-value ratio ceiling of 50% on new mortgages, applicable for a homeowner's third or subsequent home purchase.

The central bank also increased monitoring of property transactions in more areas. The regions that will be closely tracked, in addition to the previously tracked regions, include New Taipei City's Wugu, Taishan, Bali and Yingge districts, as well as Taoyuan City, Lujhu City, Jhongli City, and Gueishan Township of Taoyuan County.

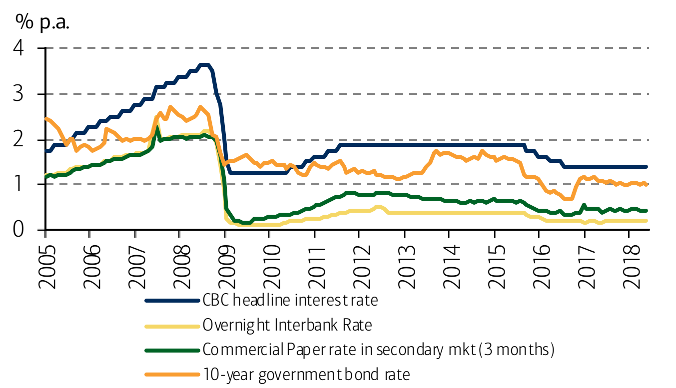
On 24 March 2016, the CBC removed mortgage restrictions on ordinary housing, related

Chart 60: Nominal and real policy rate



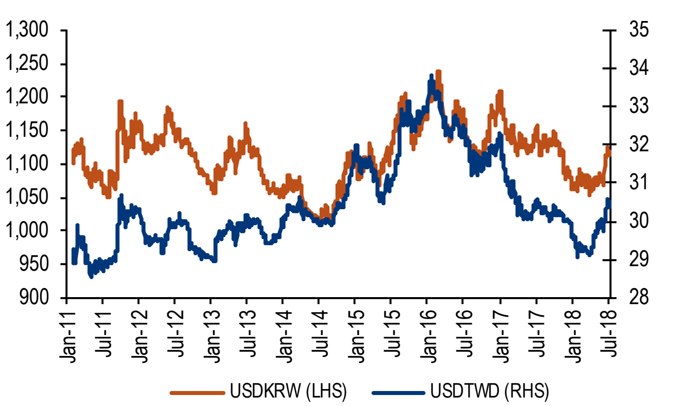
Source: BofA Merrill Lynch Global Research, CBC

Chart 61: Policy rate vs. overnight interbank rate



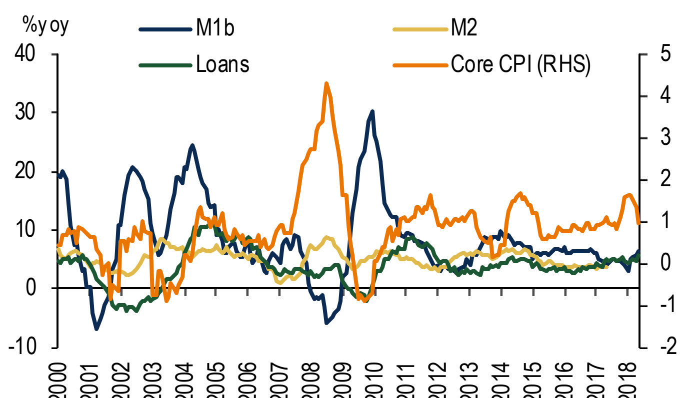
Source: BofA Merrill Lynch Global Research, CBC

Chart 62: FX rate and recent trend



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 63: Monetary aggregates



Source: BofA Merrill Lynch Global Research, CEIC

to housing in Taipei and New Taipei cities, purchased by corporates, or by individuals as a third home or beyond (with the previous cap on the mortgage-to-value ratio at 60%). The CBC removed mortgage restrictions on ordinary housing in March 2016, but has kept the cap on the mortgage-to-value ratio at 60% for luxury homes. Despite the still soft housing momentum nationwide, the CBC is unlikely to remove such restrictions soon.

Meetings, data and information dissemination

The Central Bank of China Board of Directors usually meets four times a year, with meetings chaired by the governor. The meetings typically take place in the second to last week of each quarter, but are occasionally rescheduled to accommodate board members' agendas. A post-meeting press conference is held at the end of the meeting, during which the governor reads the release and takes questions. The meeting minutes are released about six weeks after the decision is announced, starting from the June 2017 meeting.

The governor appears at the Legislative Yuan twice a year to respond to comments on the current economic situation and monetary policy. Once a year, the governor visits the Legislative Yuan to answer questions on the CBC budget.

The CBC publishes quarterly balance of payments data and monthly monetary data, such as an overview on Taipei FX market, analysis on financial conditions and updated information on offshore banking units. However, National Statistics, Republic of China, is primarily responsible for disseminating Taiwan's economic statistics, including the national accounts.

Bond market

The size of Taiwan's local bond market was TWD11,251bn (USD370bn) in May 2018, of which 49% comprised Taiwan government bonds. The four key instruments in the money market – Treasury bills, commercial paper, bankers' acceptances and negotiable certificates of deposits – accounted for 22% of the local bond market. Taiwan bonds generally trade in a very narrow range in the absence of new foreign investors. The size of the TGB market, especially the long tenor bonds, is insufficient to meet demand from pension funds.

Treasury bills. Treasury bills are issued by the CBC on behalf of the Ministry of Finance (MoF) to manage short-term liquidity. The issued tenors are: 91, 182, 273 and 364 days. Treasury bills are sold at a discount from face value and do not carry a coupon.

Commercial paper (CP). Corporates issue commercial paper for underlying business (trade) or non-business (finance) purposes. In May 2018, there was TWD1,823bn CPs outstanding. CP rates are fixed in the secondary market at 11am (see Reuters page TAIBOR=). The three-month CP fixing rate is one of the two reference rates for the floating leg of the IRS market and is known as the Taiwan Bills Index Rate (TAIBIR). The other reference fix rate is the three-month Taiwan Interbank Offered Rate (TAIBOR).

Negotiable certificates of deposits (NCDs). The CBC and commercial banks issue NCDs. The total outstanding of NCDs was TWD443bn in May 2018. NCDs issued by the CBC can be issued outright or transacted on a repo basis to manage excess liquidity. The CBC issues NCDs of one, three and six-month tenors on a daily basis. It adjusts the rates paid on NCDs by around 7bp for every 12.5bp hike in the discount rate. NCDs of one and two-year tenors are typically issued monthly to aggressively absorb excess liquidity. The most important NCD is the TWD170bn 364-day issued by the CBC in the first week of each month. The size and yield of the issuance are taken as a signal of monetary policy. Typically, commercial banks issue up to 12-month tenors.

Table 74: Composition of government debt

	Debt (TWD bn)	% of total
Central government	5,495	99
Local government	42	1
Total bonds outstanding	5,536	100

Source: CEIC. Data as of May 2018.

Taiwan government bonds (TGBs). TGBs are issued by the CBC on behalf of the MoF. The tenors issued are 2, 5, 10, 20 and 30 years. TGBs are auctioned monthly and carry a fixed annual coupon. Issuance of TGBs is usually front-loaded.

Auctions and placement mechanism. The MoF announces its issuance of central government bonds and treasury bills in two stages. First, it announces the tenor of bonds and bills to be issued each month for the coming year. Second, it announces detailed information such as issue amount, tender date and issue date, on a quarterly basis for the following three months. The announcements are made by the National Treasury Administration.

Central government bonds are sold to Designated Auction Group members only. Individuals and institutional investors may ask the Group members to submit bids under their names; for purchases of TWD1mn or less, bids are submitted through Chunghwa Post and Taiwan Stock Exchange Corp. Treasury bills are auctioned, which are open to all banks, insurance companies, bills finance companies and Chunghwa Post. Individuals and institutional investors may ask a bills broker to submit bids under their names.

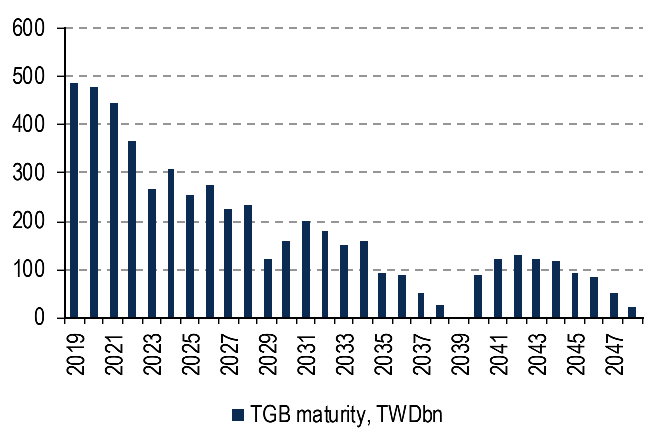
TGBs are sold in the primary market through uniform price auctions. The bids are expressed as a yield and are submitted electronically. Only those below the acceptable yield set by the Ministry of Finance are accepted. The minimum bid size is TWD50mn and thereafter in multiples of TWD10mn. There are competitive and non-competitive biddings. Auction results are published on the CBC and the Ministry of Finance websites.

Derivatives market

Interest rates swap (IRS). The IRS market is liquid out to 15 years and liquidity is strong up to five years. The 3M TAIBOR and 3M TAIBIR are the reference rates for the floating leg of the swap. Offshore investors cannot access the onshore IRS market, but can hedge effectively through the liquid non-deliverable IRS, where liquidity is good up to five years. The bond-swap spread can be considerable at the back-end of the curve because of corporate liability and asset manager portfolio hedging demand.

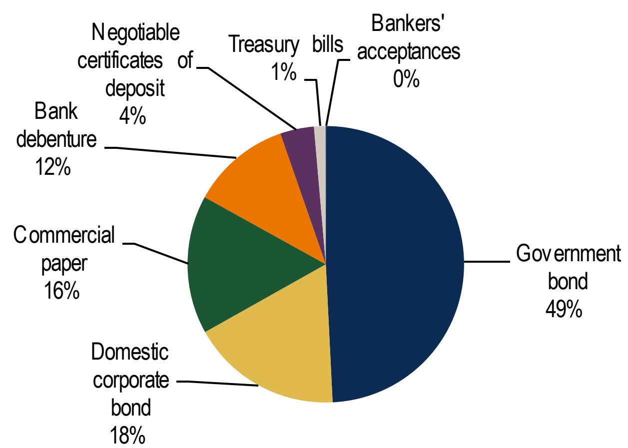
Cross-currency swap (CCS). The CCS market is liquid out to 10 years and liquidity is strong up to five years. But offshore investors cannot access the onshore CCS market and hedging options are limited by the illiquid non-deliverable CCS market.

Chart 64: Maturity profile of Taiwan government bonds



Source: Bloomberg

Chart 65: Taiwan bond market



Source: CEIC. Data as of May 2018.

Table 75: Summary statistics of Taiwan derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-Ask spread	Bloomberg Reference
Interest rate swaps				
1 year	TWD8bn	TWD1bn	1bp	TDSW01 Curncy
5 year	TWD1.5bn	TWD300mn	2bp	TDSW05 Curncy
10 year	TWD1bn	TWD300mn	5bp	TDSW10 Curncy
Non-deliverable interest rate swaps				
1 year	TWD5bn	TWD2bn	1bp	TDSWNI1 Curncy
5 year	TWD3bn	TWD500mn	1bp	TDSWNI5 Curncy
10 year	TWD500mn	TWD250mn	2bp	TDSWNI10 Curncy
Cross currency swaps				
1 year	USD50mn	USD10mn	3bp	NTUSW01 Curncy
Swaptions				
1x5	TWD200mn*	TWD1bn	2 vol	TRSP015 Curncy
5x5		TWD200mn	2 vol	TRSP055 Curncy

Source: Bloomberg. *Estimated from the broker market and client trading.

Bond futures. A 10-year TGB futures contract is offered by the Taiwan Futures Exchange. The underlying has a TWD5mn face value and 3% fixed coupon. Deliverable bonds are those cheapest to deliver and include book-entry government bonds that are maturing in not less than eight years and six months[10]. Delivery months are the standard futures quarters. However, the contracts are neither liquid nor actively traded.

FX market

The CBC has managed a flexible floating regime since 1979. The market determines the TWD exchange rate, but the CBC has intervened to contain seasonal or irregular volatility. The TWD is largely driven by external factors, especially global trade. Onshore spot transactions by investors must be registered with the CBC.

The TWD is not fully convertible and is traded as non-deliverable forwards (NDF) in the offshore markets. Since September 2014, the overseas branches of local banks have been allowed to participate in the offshore TWD NDF market with each bank's net NDF position capped at 20% of its FX position.

Investor base

The investor base comprises securities firms; bills finance corporations; banks; insurance companies; mutual funds and institutional investors. Foreign participation in the Taiwan bond market is small compared with other Asia markets because of two main reasons. First, yields in Taiwan are among the lowest in Asia. Second, foreign investment in bank debentures, corporate bonds, deposits, government bonds and money market products has been capped at 30% of the investment portfolio since November 2010.

Rules, regulations, capital controls and taxation

Foreign portfolio investments have also been liberalized with the abolishment of the qualified domestic institutional investors (QDII) system in October 2003. Since then, foreign investors have been classified into two groups: foreign institutional investors (FINIs) and foreign individual investors (FIDIs). FINIs and FIDIs must register with the TWSE to obtain investment identification before they can open a trading account with a local securities firm. There is no limit on the investment amount of FINIs and FIDIs.

FINIs and FIDIs can deal FX onshore and have access to the local FX forward market. All transactions must be documented. Foreign investment in bank debentures, corporate bonds, deposits, government bonds and money market products has been capped at 30% of the investment portfolio since November 2010. The remainder must be invested in equities.

[10] See https://www.taifex.com.tw/eng/eng2/GBF.asp for more details

Table 76: Life insurance companies assets

	TWDbn	%
Total assets	**25,528**	**100**
Foreign assets	14,786	58
Loans	1,470	6
Portfolio investment	4,722	18
- Government Agency	1,492	6
- Government Enterprise	120	0
- Private Enterprise	2,288	9
- Financial Institution	822	3
Real estate	1,041	4
Claim on financial institution	627	2
Cash in vault	0	0
Other assets	2,882	11

Source: CEIC. Data as of May 2018.

There is no capital gains tax for offshore bond investors. A 15% withholding tax is imposed on foreign investors on interest income from bonds. The withholding tax may be reduced by double tax treaties. A tax guarantor, usually the local sub-custodian, must confirm that the appropriate taxes have been paid before foreign investors can remit their proceeds.

Inward and outward remittances of direct and portfolio investment approved by the relevant authorities have been liberalized. Total annual remittances up to USD5mn by an individual and up to USD50mn by a legal entity can be conducted directly through authorized banks, while approval from the CBC is required if the limit is exceeded. A single remittance of up to USD100,000 by a non-resident is allowed directly through authorized banks, while approval from the CBC is required if the limit is exceeded.

Clearing and settlement

Government bonds are traded through the Electronic Bond Trading System (EBTS) and settled T+2 on a delivery against payment basis. Most of the government bonds are paperless and require investors to have a book-entry account (bond passbook) to record bond ownership stored with the Taiwan Depository and Clearing Corporation (TDCC).

Table 78: Summary of Taiwan bond markets and products

Instrument	Treasury bills (T-bills)	Taiwan government bonds (TGBs)
Issuer	Ministry of Finance (MoF)	Ministry of Finance (MoF)
Currency	TWD	TWD
Tenor	91, 182, 273, 364 days	2, 5, 10, 20, 30 years
Interest rate/coupon	Discount	Fixed
Coupon payments	NA	Annual

Table 77: Vital statistics and characteristics of Taiwan's FX market

Products	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
TWD Onshore						
Spot	TWD Spot	USD0.8-1.0bn	USD3-20mn	TWD 0.005-0.020	TAIFX1	TWD purchase can be executed with necessary document proofs Trading hours: 09:00-12:00 and 14:00-16:00 (Taipei)
Forwards	Forwards	USD1.5bn	USD 10-20mn	TWD 0.003 - 0.020	TWDF=	Forwards on TWD are available till tenor of 10 years and liquid for tenor shorter than one year
TWD Offshore						
Forwards	NDF	USD0.7-1.5bn	USD 5-20mn	TWD 0.01-0.05	PNDF PNDG	TWD is non-deliverable. Offshore entities can access the market through NDF. USD settled NDF on TWD are available up to the 1-year tenor and are liquid.
Options	NDO	USD 200mn	USD 50mn	0.4 vol	-	USD settled NDO on TWD are available to the two-year tenor and are liquid for tenors up to one-year.

Source: Reuters

Table 78: Summary of Taiwan bond markets and products

Instrument	Treasury bills (T-bills)	Taiwan government bonds (TGBs)
Day count calculation	Actual/365	Actual/Actual
Amortization schedule	Bullet	Bullet
Form	Bearer	Bearer
Amount outstanding	TWD 150bn (May 2018)	TWD 5,536bn (May 2018)
Secondary market		
Trading	OTC	Electronic Bond Trading System (EBTS), OTC
Quotation convention	Yield (to four decimal places)	Yield (to four decimal places)
Settlement period	T+2	T+2
Average daily turnover	TWD50mn	TWD3-5bn
Bid/offer spread	5-10bp	1-3bp
Average trade size	TWD10-30mn	TWD50mn
Clearing Mechanism	Taiwan Depository and Clearing Corporation (TDCC)	Taiwan Depository and Clearing Corporation (TDCC)
Major players	Financial institutions	Financial institutions
Trading hours	09:00-15:00	09:30-13:30 (EBTS), 09:00-15:00 (OTC)
Regulations		
Restrictions on foreign investment	Foreign investment in bank debentures, corporate bonds, deposits, government bonds and money market products capped at 30% of the investment portfolio. T-bills must have at least three months of residual maturity.	Foreign investment in bank debentures, corporate bonds, deposits, government bonds and money market products capped at 30% of the investment portfolio.
Custodian	Local custodian required.	Local custodian required.
Withholding tax	15%, reducible by double tax treaty.	15%, reducible by double tax treaty.
Capital gains tax	None.	None.
Primary auctions		
Auction Style	Uniform-price auction	Uniform-price auction
Average issue size (per month)	TWD15bn	TWD28bn
Minimum Amount of Tender	TWD100,000	TWD100,000
Bidders	Banks, insurance companies, securities companies, bill finance companies and Chunghwa Post.	Banks, insurance companies, securities companies, bill finance companies and Chunghwa Post.

Source: Bloomberg, CEIC, various local authorities

Local/external debt ratings

	Local	External
2018	Aa3/AA-u/AA-	Aa3/AA-u/AA-
2017	Aa3/AA-u/AA-	Aa3/AA-u/AA-
2016	Aa3/AA-u/AA-	Aa3/AA-u/A+
2015	Aa3/AA-u/AA-	Aa3 /AA-u/A+
2014	Aa3/AA-u/AA-	Aa3 /AA-u/A+
2013	Aa3/AA-u/AA	Aa3 /AA-u/A+
2012	Aa3/AA-u/AA	Aa3 /AA-u/A+
2011	Aa3/AA-u/AA	Aa3 /AA-u/A+
2010	Aa3/AA-/ AA	Aa3/AA-/A+
2009	Aa3/AA-/ AA	Aa3/AA-/A+
2008	Aa3/AA-/ AA	Aa3/AA-/A+
2007	Aa3/AA-/ AA	Aa3/AA-/A+
2006	Aa3/AA-/ AA	Aa3/AA-/A+
2005	Aa3/AA-/ AA	Aa3/AA-/A+
2004	Aa3/AA-/ AA	Aa3/AA-/A+
2003	Aa3/AA-/ AA	Aa3/AA-/A+
2002	Aa3/AA-/ AA	Aa3/AA-/A+
2001	Aa3/AA/ AA	Aa3/AA/A+

Source: , Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield
Settlement: T+2 negotiable
Basis: Act/Act
Coupon frequency: Annual

IRS

Fixing: 90-day CP rate
Coupon frequency: Quarterly, floating/fixed Act/365

CCS

Fixing: 6m USD LIBOR
Coupon frequency: Semi-annual USD day count Act/360, local Act/365

Bloomberg pages

TWD Curncy ALLQ<GO> FX rates
TWD OTC<GO> – Market monitor
CBRC<GO> – Central bank page
NTMM<GO> – Taiwan money market rates
TDON<GO> – Interbank and overnight rates
MOSB TWD<GO> – Most traded bonds
TWDI<GO> – Taiwan Interbank Money Center
TFEX<GO> – Taipei Forex Inc.

Reuters pages

CBCINDEX – Central bank page
TAIFX1 – Taipei Forex Inc.
TWCP= – Primary market CP fixing
TWCPE – Secondary market CP fixing
TWFRA – Taiwan FRAs

Useful official websites

Central Bank of Taiwan (CBC)
www.cbc.gov.tw

Ministry of Finance
www.mof.gov.tw

National Treasury Agency
www.nta.gov.tw

Ministry of Economic Affairs
www.moea.gov.tw

Council for Economic Planning & Development
www.cepd.gov.tw

Financial Supervisory Commission
www.fscey.gov.tw

Useful market websites

GreTai Securities Market
www.otc.org.tw

Taiwan Depository and Clearing Corporation
www.tdcc.com.tw

*Links are to third-party websites, and do not contain BofAML Global Research.

Thailand

Rohit Garg
Merrill Lynch (Singapore)

Supavud Saicheua
Phatra Securities

Overview

The Thai economy is recovering at a more resilient pace, led by continuing strong exports and tourism revenue numbers. Domestic demand is also showing firmer signs of recovery though the recovery is yet to be broad-based. We expect GDP to grow at 4.2%, with an upside (if export growth momentum continues in 2H18). The fact that headline and core inflation were on the rise during 2Q 2018, with the latter reaching 1.38% in June, meant that the Bank of Thailand (BoT) has signaled its intention to remove monetary accommodation, which implies that the Monetary Policy Committee (MPC) is likely to seriously consider raising the 1.5% policy rate at the last three meetings of the year in 4Q 2018.

We, however, retain our view that the first rate hike will begin in 2019. We believe that given the rising concerns about escalating trade tensions and the still modest prevailing inflation rates in Thailand, the BoT, which promises to be "data dependent", would find caution to be the more prudent course of action in 2018.

Bank of Thailand

Objectives

The Bank of Thailand (BoT) was established by the Bank of Thailand Act of 1942, under which monetary policy involved targeting a specific THB/USD exchange rate until the regime collapsed in 1997. The BoT switched to an inflation-targeting regime beginning in 1999 and announced its formal adoption in May 2000. Inflation targeting was subsequently enacted into law under the BoT Act of 2008. The act states the BoT's objectives are to "maintain monetary stability, financial institution system stability and payment system stability". It does not require the BoT to pursue growth objectives, stating only that "the implementation of economic policy of the government shall be taken into consideration".

The BoT's powers include issuing and managing notes; formulating and implementing monetary policy; managing BoT assets; acting as a banker to the government and financial institutions; supervising and examining financial institutions; and managing, administering and controlling the exchange rate. A primary objective of the BoT Act of 2008 is to ensure the independence of the BoT from political interference, stating that the BoT governor "shall be independent in the management and administration of the BoT's affairs". Also, the Ministry of Finance has limited leeway in dismissing the BoT governor.

Legal framework

The Bank of Thailand's major functions are governed by four boards: the Bank of Thailand Board; the Monetary Policy Board; the Financial Institutions Policy Board; and the Payment Systems Board. For our purposes, the Monetary Policy Committee (MPC) of the Monetary Policy Board is the focal point of how Thailand conducts monetary policy. The BoT Board, where the chairman is an outsider appointed by the government, may at first glance appear important, but is in fact charged only with overseeing the operations of the BoT and the "assessment of the general operation of the governor".

Conversely, the MPC "shall have powers and duties conferred as follows: (1) determine targets of national monetary policy, provided that the fundamental state policies, national economic and monetary status shall be taken into consideration; (2) determine policies of managing the currency exchange under the exchange rate regime as to the law on currency; (3) determine any necessary measure in compliance with the target and

Table 79: Key facts

Name	Bank of Thailand
Founded	1942
Governor	Veerathai Santiprabhob
MPC Board members	7 members
Autonomous	Yes
Government representative on board	Representative from National Economic and Social Development Board (an outside member)
Terms	3 years for the four outside members, and no more than two terms
Inflation target	1.0-4.0% (headline)
Latest move	25bps cut to 1.5% (29 April 2015)

Source: Bank of Thailand

Table 80: Key links*

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
Statistics
Research and Publications
Presentations and speeches
Legal framework
Ministry of Finance
National Economic Social and Development Board

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

policies in (1) and (2); and (4) monitor the BoT's implementation of (3) to be correct and efficient".

The MPC is obligated to report its operations to the cabinet only every six months, and to co-determine targets for monetary policy in the following year with the Minister of Finance by December of each year. The purpose of the target is to "maintain price stability".

Decisions

The Monetary Policy Committee has seven members, including the BoT governor, who also serves as MPC chairman; two deputy governors, one of whom is the deputy chairman; and four outside "experts with professional knowledge in the field of economics or banking appointed by the BoT Board". The BoT's website states "the MPC works closely with BoT staff to monitor internal and external economic conditions", and says that "in formulating monetary policy, the MPC makes assessments and policy decisions based upon data provided by the Bank of Thailand".

The MPC meets eight times per year (every six weeks), following a predetermined meeting schedule. Decisions are reached by majority vote. Since the formation of the MPC, the BoT's views have prevailed with the exception of the MPC meeting on 17 October 2012 and 11 March 2015, at which the majority in the MPC voted to cut the policy rate by 25bp despite the BoT governor wanting to keep rates unchanged.

The current MPC board

The Monetary Policy Committee consists of Dr. Veerathai Santiprabhob, BoT governor and chairman; Mathee Supapongse, BoT deputy governor for Monetary Stability, and vice-chairman; Paiboon Kittisrikangwan, BoT deputy governor and four expert members; Dr. Sethaput Suthiwart-Narueput (former Chief Economist of SCB); Dr. Kanit Sangsubhan (Secretary General of the Eastern Economic Corridor Office; and Dr. Subhak Sirwaraksa (former banker) and Dr Somchai Jitsuchon. We believe Dr. Kanit has dovish views on monetary policy, and seeks as favorable a macroeconomic environment as possible to help ensure the success of the Eastern Economic Corridor projects which are under his supervision. Mr. Subhak had previously served as the president of the Thai Military Bank and Chief Executive Officer of CIMB in Thailand. Dr,Somchai is appointed to replace Dr.Poramatee (who is appointed to be the chairman of the BoT's Board) in August2018. He is an academic researcher at Thailand Development Research Institution focusing on Macroeconomics, Poverty and Social Welfare.

It is notable that the four outside experts outnumber the three permanent MPC members from the BoT, and that, theoretically, their combined votes could set the course of Thailand's monetary policy. But the BoT works closely with the MPC, which uses data provided by the BoT to arrive at its decisions.

Based on their recent pronouncements and decisions, it could be argued that the members of the MPC have adopted a more conservative policy stance, expressing support for the current relatively high policy rate of 1.5% while cautioning about the risks of "search for yield". The BoT governor's past writings made it clear that he thinks Thailand needs to undertake structural changes (deal with the "supply side") and should avoid short-term populist demand-side policies.

Dr Veerathai became BoT governor in October 2015. Since any person with the relevant experience is eligible to be appointed BoT governor as long as he is under 60, Dr Veerathai could theoretically serve as BoT governor for three more terms of five years each. This would imply an unprecedented degree of continuity and stability in Thailand's monetary policy making over a 20-year time span.

On 6 July 2018, Dr Veerathai gave a newspaper interview in which he laid out four conditions for hiking Thailand’s policy rate in the future. These are: inflation, growth, financial stability, and the need to build policy space. The last factor was new and given priority by the BoT Governor. We believe this is in keeping with BoT promises made on several occasions in the past that it would let the market know in advance when it is preparing the groundwork to make adjustments to the policy rate. Dr Veerathai emphasized, however, that Thailand has considerable buffers (such as large foreign reserves and sizeable current account surpluses), and that the BoT will be “data dependent”, citing in particular the downside risks to Thai exports from rising global trade tensions.

Monetary policy regime and instruments

The Bank of Thailand follows a full-fledged inflation targeting monetary policy framework. It has set an inflation target by using core inflation since 2001 and the policy has been a success, with Thai core inflation averaging only 1.3% per year from 2001-14, below its mid-point of 1.75%. This success has helped to restore the BoT’s monetary policy credentials.

However, in 2015, the BoT changed its policy target from core to headline inflation to “improve the efficiency of central bank’s communication with the public and thus strengthen the monetary policy effectiveness in anchoring long term inflation targeting”. Accordingly, the inflation target for 2015 came at an annual average headline inflation of 2.5% with a tolerance of +/- 1.5% (1% to 4%). The challenge encountered by the BoT was the sharp fall in oil prices, which has pulled headline inflation into negative territory for 15 months starting in January 2015. The rising inflation trend, supported by higher oil prices, suggests the BoT may be even more convinced that its current monetary policy stance is appropriate. Meanwhile, concerns about baht volatility and outperformance could be addressed by close monitoring and periodic intervention.

Table 81: MPC Board members

Name	Date originally appointed	Current term ends	Term limit ends	Background	Known policy stance
Veerathai Santiprabhob, Governor	Oct 2015	Oct 2020	Oct 2035	PhD in Economics, Harvard University Former Executive Vice President of the SEC	Turning less Dovish
Mathee Supapongse Deputy Governor	Oct 2015	N/A	N/A	Master’s in finance, Catholic University Head of Monetary Stability, BoT	Turning less Dovish
Paiboon Kittisrikangwan, Deputy governor	Sept 2012	N/A.	N/A	Master’s in business administration, Wisconsin University Head of Corporate Support Service and Banknote Management, BoT	Hawkish
Somchai Jitsuchon	Aug 2018	Oct 2020	Oct 2023	PhD in economics, University of British Columbia, Canada Research Director, Inclusive Development , Thailand Development Research Institution	Unknown
Sethaput Suthiwart-Narueput	Oct 2014	Oct 2017	Oct 2020	PhD. economics, Yale University Former Advisor to Ministry of Finance, chief economist at Siam Commercial Bank; now an independent consultant	Moderate Hawk
Kanit Sangsubhan	Oct 2017	Oct 2020	Oct 2023	PhD in economics, University of Toronto Secretary General of the Eastern Economic Corridor Office	Dovish
Subhak Siwaraksa	Oct 2017	Oct 2020	Oct 2023	PhD in Economics, University of Pennsylvania Governor, the Stock Exchange of Thailand Former CEO of CIMB Thai Bank and the president of Thai Military Bank	Dovish

Source: BofA Merrill Lynch Global Research

Table 82: Meetings and releases in 2018

	Monetary policy meeting	Monetary policy minutes
Jan	Wed, 14 Feb	Wed, 28 Feb
Mar	Wed, 28 Mar	Wed, 11 Apr
Apr	Wed, 16 May	Wed, 30 May
Jun	Wed, 20 June	Wed, 4 July
Aug	Wed, 8 Aug	Wed, 22 Aug
Sep	Wed, 19 Sep	Wed, 3 Oct
Nov	Wed, 14 Nov	Wed, 28 Nov
Dec	Wed, 19 Dec	Wed, 2 Jan 2019

Source: Bank of Thailand

Exchange rate regime and instruments

The Bank of Thailand engaged in foreign exchange intervention to slow the rate of baht appreciation from 2003 to 2011. As a result, Thailand's foreign reserves rose from US$39bn at end-2002 to US$181bn at end-2012. Intervention, which was particularly active from 2003-12, required continuous sterilization through the issuance of BoT bonds, causing BoT bonds outstanding to rise from Bt180bn in 2003 to Bt3tn. Continued baht appreciation and the high interest paid on BoT bonds weakened the BoT's balance sheet and led to operating losses for the BoT for several years.

However, the situation reversed in 2013 as concerns about quantitative easing tapering encouraged capital to flow out of emerging markets. Thailand's current account turned to a deficit in 2012-13 due to rising imports and weak exports, which in turn led to a balance of payments deficit and a decline in reserves. Thailand's international reserves fell to US$157bn at end-2014 versus US$181.6bn at end-2012. As a result, the baht weakened from Bt29/US$1 in the beginning of 2013 to trade around Bt32/US$1.

Since late-2014, the sharp fall in global oil prices helped to substantially improve Thailand's external balance. The country's current account recorded a large surplus of 8% of GDP in 2015 and surged to about 11% of GDP in 2016 and 2017. Thailand's current account surplus is expected to be sustained at a high level of 6-8% of GDP in 2018 and 2019. A sustained large current account surplus makes it likely that the baht would appreciate vs other regional currencies which has weaker external positions. Moreover, we believe the BoT has recently become more mindful of the vigilance of the US Treasury in monitoring what it believes to be possible currency manipulation by US trading partners. Accordingly, this would compel the BoT to intervene less to slow down the rate of baht appreciation.

Nonetheless, the BoT had actively intervened to slow down the rate of baht appreciation as seen from rising FX reserves (including net forward position) since 2016. FX reserves stood at US$168bn in 2015, rising US$30bn to US$198bn in 2016, and rising another US$42bn to US$239bn in 2017. During the period, the baht appreciated 1.3% against the US$ in 2016 and another 9.0% in 2017. The intervention continued in 2018, pushing up foreign reserves to a peak of US$251bn by mid-April 2018. The baht had strengthened from Bt36/US$1 in early 2016 to Bt31/US$1 in April 2018. However, since mid-April 2018, as the US dollar gained strength while EM market outlook turned negative (pricing in Fed more rate hikes and an escalation of trade conflicts), the Thai baht weakened along with other EM currencies. As of August 2018, Thailand's FX reserve fell by US$14.2bn to US$236.8bn and the baht fell back to Bt32.7/US$1, the level reached at end-2017.

Credit regulation functions

The Bank of Thailand has wide-ranging powers to supervise banking activities, such as setting reserve requirements, regulating bank credit and setting macro-prudential measures. The preferred instrument to control credit expansion is setting the one-day repurchase rate consistent with the objective of achieving the inflation target.

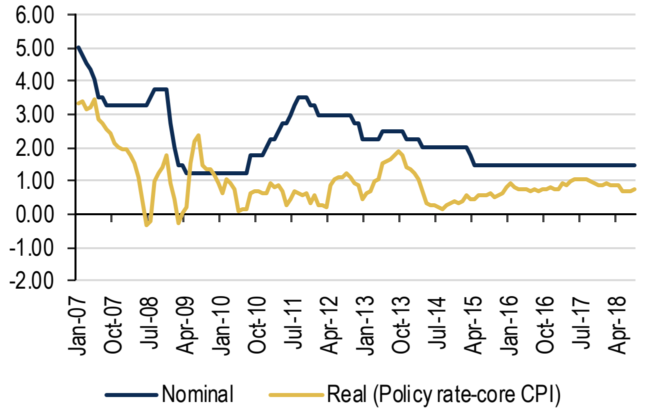
The BoT rarely changes the reserve requirement. State-owned financial institutions (SFIs) that are 100% owned by the government have grown quickly in recent years, and now account for 28% of banking assets in the system. SFIs are not under the direct supervision of the BoT, although the BoT audits them in accordance with its prescribed prudential standards. Arguably, the rise of the SFIs has diluted the BoT's overall control of credit expansion and its oversight of the banking system.

Current policy stance

The Monetary Policy Committee has kept the policy rate unchanged at 1.5% for over three years despite inflation falling below the lower bound of its inflation target band (1%) since 2015. The MPC explained that subdued inflation was caused by "supply-side" factors and are likely to be temporary in nature (in particular lower global oil prices). They also argued that the public's medium-term inflationary expectations remained firm and close to the midpoint of the BoT's inflation target (2.5%).

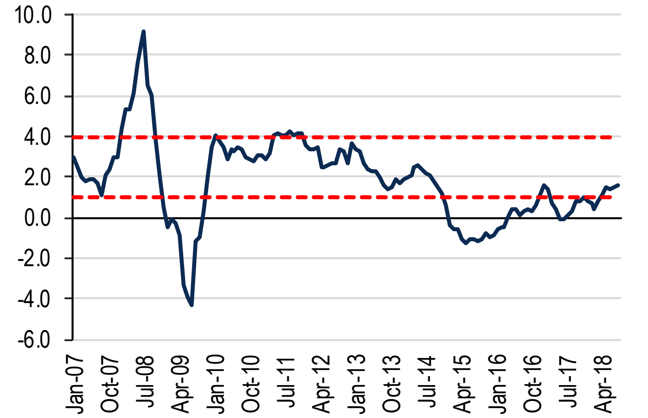
Since June 2018 meeting, the MPC turned decidedly more bullish on the Thai economy given the continued strong demand externally and material improvements domestically. It also said that headline inflation is rising at a slightly faster pace than previously assessed. More importantly, core inflation is edging up, "given gradual build-up in demand-pull inflationary pressures". Given the stronger domestic economy, longstanding concerns about search for yield and concern by some in the MPC about widening interest rate differential with the US, such demand pull inflation, could prove to be the "tipping point" for the MPC to seriously consider withdrawing monetary accommodation during its three remaining meetings in 4Q 2018.

Chart 66: Nominal and real policy rate



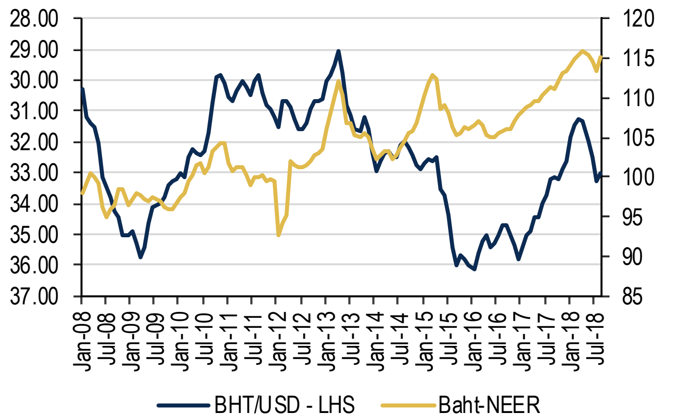
Source: BofA Merrill Lynch Global Research

Chart 67: Headline inflation and the BoT's target range



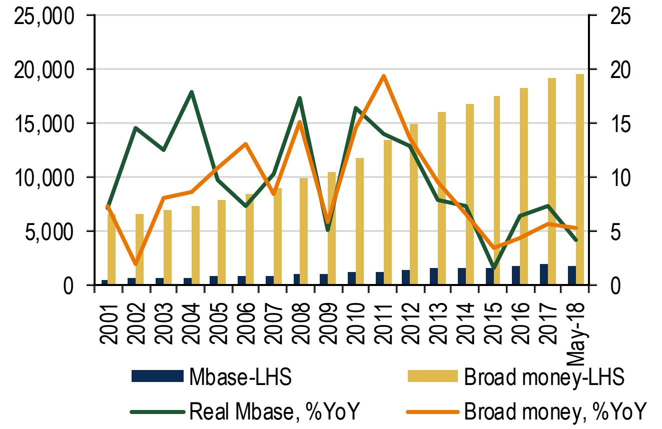
Source: MoC, BofA Merrill Lynch Global Research

Chart 68: Baht has appreciated in NEER term



Source: Bank of Thailand, CEIC

Chart 69: Monetary aggregates



Source: Bank of Thailand, BofA Merrill Lynch Global Research

Meetings, data and information dissemination

The MPC meets regularly to discuss and assess economic developments. It sets monetary policy eight times a year, with meetings taking place about every six weeks. A press conference is held the same day the meeting ends at around 14.00 hours. The MPC secretary reads a short statement summarizing the decision and takes questions from the press. The Bank of Thailand also provides quarterly briefings for economists and analysts following the release of its Monetary Policy Report.

The minutes are released two weeks after the meeting. These typically indicate whether the decision was unanimous or by majority, and include the opinion of any dissenting votes. The BoT also publishes a quarterly Monetary Policy report to present the latest economic and inflation forecasts of the MPC, and to communicate to the general public how the MPC reached its policy decisions.

The BoT website contains broad-based macroeconomic data, including financial and monetary data, as well as trade, price and other key economic indices.. The BoT website has Thai and English versions.

Fiscal policy

Thailand follows a fiscal year from October-September. The fiscal deficit has risen in the past few years due to an increase in infrastructure spending and government subsidy to low income and grass root. Meanwhile, the share of investment budget in the overall budget is kept at 23%. Most of this would be spent on infrastructure projects, especially rail and road. However, fiscal cash deficit to GDP was kept at not more than 3% of GDP and public debt to GDP is now at about 41% of GDP.

Bond market

The government bond market has grown rapidly in recent years, reaching US$263bn in March 2018, or about 57% of GDP. This is the highest so far, surpassing the previous high of US$251.6bn in December 2017. Effective October 2010, the authorities re-imposed a 15% withholding tax on foreign investors' interest income and capital gains on their investments in Thailand government bonds, BoT bonds, and state enterprise bonds.

Thailand government bonds. Issued weekly, government bonds have maturities from 5-50 years.

Inflation-linked bonds. The government issued its first inflation-linked bond in 2011, with a tenor of 10 years (July 2021 maturity with 1.2% coupon) and a coupon paid semi-annually. However, more recently, the Public Debt Management Office (PDMO) has stopped issuing linkers as they have reached limits in terms of issuance limits. Lack of demand might have also contributed to this.

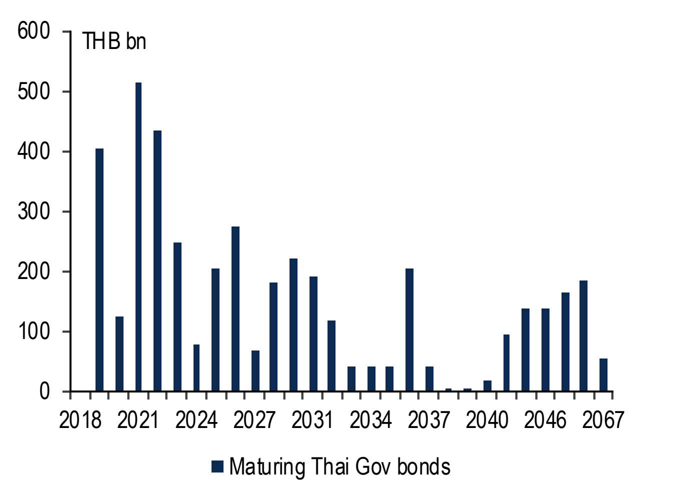
Bank of Thailand bond. The BoT issues bills and bonds regularly, ranging from 14d bills to 3y BoT bonds. Generally, BoT bond yields (2-3y) are 5-15bp higher than government bonds of the same tenors. The primary objective of BoT bonds is to maintain currency stability and facilitate the development of money and debt securities markets.

State enterprise bonds. Issued by state-owned enterprises, maturities can be up to 10 years. The auctions are managed by PDMO and are normally done through a Dutch auction.

Corporate bonds. Typical maturities are 3, 5 and 7 years. Most issuance by corporates is done through private placements, but occasionally, they are auctioned to the public market.

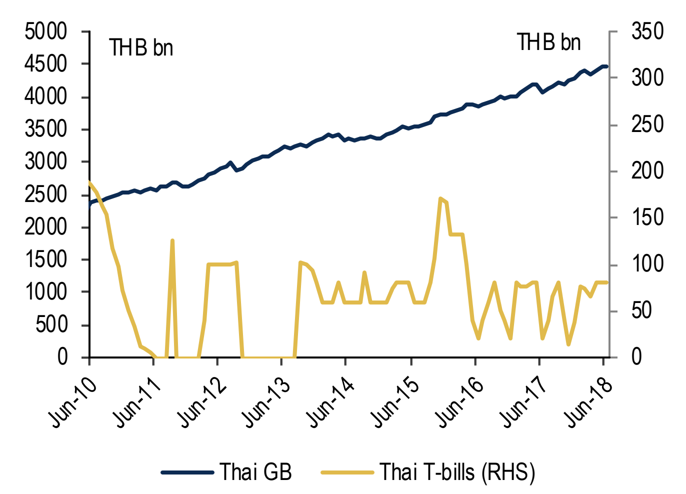
Auction and placement mechanism. Government bond and Treasury bill auctions are held weekly under the BoT's supervision. Auctions are conducted as competitive bids (ie, American auction). Non-competitive bids are available for individual investors in small sizes of THB4-40mn.

Chart 70: Maturity profile of Thai government bonds in (THB bn)



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 71: Outstanding government bonds and bills (THB bn)



Source: BofA Merrill Lynch Global Research, Bloomberg

Derivatives market

Interest rate swaps. Both the onshore and offshore IRS curves generally have good liquidity out to 10 years. The floating leg of the IRS contract is the 6m FX forward-implied interest rate. Local banks and life insurance companies are active in hedging their asset and liabilities in the IRS market, and lumpy flows going through the market can have an effect when liquidity is low.

Cross-currency swaps. Onshore liquidity is good out to 10 years and there is little to no liquidity offshore. Thailand investment companies are active in investing savings abroad and tend to swap THB for foreign currencies.

FX market

In a global context, Thailand's FX market remains small. Daily transaction volume averages about US$0.8-1bn in the spot market and less than that in the onshore forward market, with liquidity in the offshore forward market significantly lower, especially for tenors longer than one year. Forwards on THB are very liquid for tenors shorter than six months and moderately liquid for 9-12 months. The BoT manages the currency under a managed float regime, and intervenes to correct short-term volatility. The THB is deliverable and the currency convertibility was reinitiated in March 2008 with the removal of the unremunerated reserve requirement on short-term capital flows. Transfers in foreign currency for direct and portfolio investment are freely permitted. Capital transfers by Thai residents are subject to certain regulations. In October 2012, the BoT announced plans to relax FX regulations to increase flexibility for Thai residents in overseas investment and in FX risk management, including the following:

- Thai residents will be able to hedge overseas investments freely to unwind their foreign currency hedging of capital transactions.
- Measures preventing THB speculation by non-residents will be relaxed, such as increasing the outstanding limit of domestic financial institutions in providing THB liquidity to and borrowing from non-residents for transactions undertaken without underlying trade and investment to Bt500mn per group of non-residents per financial institution. Also, domestic financial institutions will be allowed to provide direct loans in THB to non-residents up to the underlying trade and investment in Thailand.

FX swaps. The BoT also uses FX swaps to influence liquidity in the money market. Liquidity is withdrawn by conducting sell-buy FX swap operations with onshore and offshore banks, and the reverse buy-sell FX swap operations are used to inject liquidity into the money market. Tenors for these operations are normally up to a year, but most transactions are conducted within a three-month maturity.

Table 83: Summary statistics of Thailand derivative products and their markets

Product	Average daily trading volume	Average transaction size	Bid-ask spread	Bloomberg/Reuters Reference
Interest rate swaps				
1-year	THB3,000	THB1,000	3bp	TBSW01 Curncy
5-year	THB3,000	THB500	3bp	TBSW05 Curncy
10-year	THB1,000	THB500	4bp	TBSW010 Curncy
ND Interest rate swaps				
1-year	THB3,000	THB1,000	3bp	TBSWNI1 Curncy
5-year	THB3,000	THB500	3bp	TBSWNI5 Curncy
10-year	THB1,000	THB500	4bp	TBSWNI10 Curncy
Cross-currency swaps				
1-year	USD20-30	USD10mio	5bp	TBUSSW1 Curncy
5-year	Not liquid	USD10mio	10bp	TBUSSW5 Curncy
10-year	Not liquid	USD10mio	20bp	TBUSSW10 Curncy

Source: Bloomberg, Reuters

Table 84: Ownership breakdown of Thai government bonds (as of June 2018)

	THB bn	% share
Total Bonds Outstanding	**4,479**	**100%**
Central Bank	155	3%
Other depository corporations	920	21%
Financial corporations not elsewhere classified	1901	42%
Other Non-financial Corporations	23	1%
Central Government	524	12%
Local Government	0.24	0%
Public Non-financial Corporations	0.01	0%
Households and non-profit institutions serving households	243	5%
Total Local Holders	**3,766**	**84%**
Foreign holders	**713**	**16%**

Source: BofA Merrill Lynch Global Research, BoT

Investor base

Banks are major investors in Thai government bonds. The Government Pension Fund (GPF) is also a large investor in Thai government bonds as well as high grade Thai corporate debentures. Note that the GPF is not a government entity, nor is it a Sovereign Wealth Fund. Mutual funds and insurance companies are also big investors in Thailand government bonds, as well as households. As of June 2018, foreigners own 16% of Thailand government bonds and 4% of BoT-bills.

Rules, regulations, capital controls and taxation

Capital gains are subject to a withholding tax of 15%, which can be reduced to about 10% for foreign investors from jurisdictions with a tax treaty with Thailand. Institutional investors can carry out derivative transactions linked to their foreign investments, including borrowing and lending securities. Most derivative transactions of this nature are restricted to plain vanilla. In April 2015, relaxation of regulations made it easier for Thai residents to take capital abroad. Foreign investors are subject to a 15% tax on interest income that may be reduced to 10%, subject to being eligible for tax treaties. Thai regulations and taxation are subject to change, and investors are recommended to contact the relevant government bodies and seek tax advice.

Clearing and settlement

Foreign investors can settle onshore using a local custodian or offshore through Euroclear. Clearing onshore through the stock exchange is settled at T+2 using a book-entry system. The delivery versus payment (DVP) system reduces settlement risks. Over the counter transactions will eventually be done on a DVP basis, but are currently settled by physical delivery. Dealers are required to report bond transactions to the Thai BMA.

Table 85: Vital statistics and characteristics of Thailand's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
THB Onshore						
Spot	THB Spot	USD0.8-1.0bn	USD3-10mn	THB0.01-0.03	THB=D2	Proper documentation required.
Forwards	Forwards	USD0.7-0.9bn	USD10-30mn	THB0.01-0.10	THBF=	Forwards on THB are very liquid for tenor shorter than 6 months and moderately liquid for 9-12 months.
THB Offshore						
Forwards	Forwards	USD400-700mn	USD5-30mn	THB0.01-0.10	PREE	THB is non-deliverable. Offshore entities can access the market through offshore forward markets. Offshore forwards on THB are available up to 5y tenors and liquid for tenors shorter than 1y.

Source: Reuters

Table 86: Summary of Thailand bond markets and products

Instrument	Treasury Bills	Government Loan Bonds	Government Savings Bonds	Bank of Thailand (BOT) Bonds
Issuer	Ministry of Finance, facilitated by Bank of Thailand	Ministry of Finance, facilitated by Bank of Thailand	Ministry of Finance, facilitated by Bank of Thailand	Bank of Thailand
Currency	THB	THB	THB	THB
Principal	THB1000 (par)	THB1000 (par)	THB1000 (par)	THB1000 (par)
Tenor	Less than one year, typically having 28, 91 and 182-day maturity periods	1 to 20 years	3 to 10 years	Of varying maturity; zero coupon bonds (less than a year); fixed rate and floating bonds (more than 1 year) and savings bonds (4-7 years)
Interest rate/coupon	Sold at discount from face value	Fixed	Fixed	Fixed except for floating rate bonds which are based on BIBOR (Bangkok Interbank Offered Rate)
Coupon Payments	Zero coupon	Semi-annual	Quarterly / Semi-annual	Semi-annual
Day Count Calculation	30/360	30/360	30/360	30/360
Amortization Schedule	Bullet	Bullet	Bullet	Bullet
Form	Scripless	Scripless	Scripless	Scripless
Amount outstanding	THB80bn (As of April 2015)	THB3363bn (As of June 2015)	THB222bn (As of June 2015)	THB3131bn (as of June 2015)
Secondary Market				
Trading	OTC or BEX	OTC or BEX	OTC or BEX	OTC or BEX
Quotation Convention	Yield	Yield	Yield	Yield
Settlement Period	T+2 but can vary by bilateral agreement	T+2 but can vary by bilateral agreement	T+2 but can vary by bilateral agreement	T+2 but can vary by bilateral agreement
Average Daily Turnover	THB1-3.5bn	THB2-5bn	THB2-5bn	THB50-80mn
Bid/offer spread (0-5Y)	2-4bp	2-4bp	2-4bp	6bp
Bid/offer spread (5Y+)	NA	2-4bp	2-4bp	NA
Average trade size	THB50-100mn	THB50-100mn	THB20-40mn	THB50-100mn
Clearing Mechanism	BAHTNET (Euroclear available)	BAHTNET (Euroclear available)	BAHTNET (Euroclear available)	BAHTNET (Euroclear available)
Major players	Mutual funds, pension funds, insurance companies, banks, asset management and private funds	Mutual funds, pension funds, insurance companies, banks, asset management and private funds	Mutual funds, pension funds, insurance companies, banks, asset management and private funds	Mutual funds, pension funds, insurance companies, banks, asset management and private funds
Trading hours	9:00am-12:00pm and 1:30-4:00 pm (Bangkok time)	9:00am-12:00pm and 1:30-4:00 pm (Bangkok time)	9:00am-12:00pm and 1:30-4:00 pm (Bangkok time)	9:00am-12:00pm and 1:30-4:00 pm (Bangkok time)
Bidders	Primary dealers and other institutions authorized by the Ministry of Finance.	Primary dealers and other institutions authorized by the Ministry of Finance can submit competitive or non-competitive bids. Others to submit non-competitive bids only through primary dealers.	Thai nationals, residents, cooperatives, foundations, monasteries, educational institutions, hospitals and others not specifically stated as ineligible.	Primary dealers and other institutions authorized by the Bank of Thailand.
Regulations				
Restrictions on Foreign Investment	No restrictions; foreign investors free to invest in Thai bonds	No restrictions; foreign investors free to invest in Thai bonds	No restrictions; foreign investors free to invest in Thai bonds	No restrictions; foreign investors free to invest in Thai bonds
Custodian	Local custodian required	Local custodian required	Local custodian required	Local custodian required
Withholding Tax	Effective from 13 October 2010, foreigners are required to pay a 15% tax on interest income on government, central bank or state enterprise bonds, unless rate is reduced by a preferential tax treaty	Effective from October 2010, foreigners are required to pay a 15% withholding tax on government, central bank or state enterprise bonds, unless the rate is reduced by a preferential tax treaty	Effective from October 2010, foreigners required to pay 15% withholding tax on government, central bank or state enterprise bonds, unless rate is reduced by a preferential tax treaty	Effective from October 2010, foreigners required to pay 15% withholding tax on government, central bank or state enterprise bonds, unless the rate is reduced by a preferential tax treaty
Capital gains Tax	Effective 13 October 2010, a 15% tax on capital gains imposed on foreign investors, unless the rate is reduced by preferential tax treaty.	Effective 13 October 2010, 15% tax on capital gains imposed on foreign investors, unless rate reduced by preferential tax treaty.	Effective 13 October 2010, a 15% tax on capital gains imposed on foreign investors, unless the rate is reduced by preferential tax treaty.	Effective 13 October 2010, a 15% tax on capital gains imposed on foreign investors, unless the rate is reduced by preferential tax treaty.
Entry/Exit Tax	None	None	None	None
Primary Auctions				
Auction Style	Offered weekly via competitive auction to primary dealers and other eligible participants	Offered weekly via competitive auction to primary dealers and other eligible participants. Non-competitive bids are available for other investors	From selling agents like the BoT, Government Savings Bank and authorized commercial bank branches during subscription time.	Offered weekly via competitive auction to primary dealers and other eligible participants
Average Issue Size	THB50-100bn	THB50-100bn	THB50-100bn	THB30-50bn
Minimum Amount of Tender	THB10mn for competitive bids	THB10mn for competitive bids; non-competitive are between THB4-40mn	Vary between THB10,000-50,000 depending on the issue	THB10mn for competitive bids

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	Baa1/A-/BBB+	Baa1/BBB+/BBB+
2017	Baa1/A-/BBB+	Baa1/BBB+/BBB+
2016	Baa1/A-/BBB+	Baa1/BBB+/BBB+
2015	Baa1/A-/A-	Baa1/BBB+/BBB+
2014	Baa1/A-/A-	Baa1/BBB+/BBB+
2013	Baa1/A-/A-	Baa1/BBB+/BBB+
2012	Baa1/A-/A-	Baa1/BBB+/BBB-
2011	Baa1/A-/A-	Baa1/BBB+/BBB-
2010	Baa1/A-/A-	Baa1/BBB+/BBB-
2009	Baa1/A-/A-	Baa1/BBB+/BBB-
2008	Baa1/A/A	Baa1/BBB+/BBB+
2007	Baa1/A/A	Baa1/BBB+/BBB+
2006	Baa1/A/A	Baa1/BBB+/BBB+
2005	Baa1/A/A	Baa1/BBB+/BBB+
2004	Baa1/A/A-	Baa1/BBB+/BBB
2003	Baa1/A/A-	Baa1/BBB/BBB
2002	Baa1/A-/BBB+	Baa3/BBB-/
2001	Baa1/A-/BBB+	Baa3/BBB-/

Source: , Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+2
Basis: 30/360
Coupon frequency: Mostly semi-annual

IRS

Fixing: 6M THBFIX
Coupon frequency: Semi-annual fixed/floating Act/365

CCS

Fixing: 6m USD LIBOR
Coupon frequency: Semi-annual USD day count Act/360, local Act/365

Bloomberg pages

THB Curncy ALLQ<GO> – FX rates
OTC THB<GO> – Market monitor
BTHA – Central bank page
THGO<GO> – Thai government links
TBMA<GO> – Thai Bond Market Association
MOSBTH<GO> – Most traded bonds

Reuters pages

BOT1 – Bank of Thailand FX page
BOT13 – Bond issuance schedule
MOF01 – Ministry of Finance
THBFIX= Thai baht implied fixings page

Useful official websites

Bank of Thailand (BOT)
www.bot.or.th

Ministry of Finance
www.mof.gov.th

Ministry of Commerce
www.moc.go.th

Ministry of Trade
www.thaitrade.com

Securities and Exchange Commission
www.sec.or.th

Budget Bureau
www.bb.go.th/bbhomeeng

Public Debt Management Office
www.pdmo.mof.go.th

Government Pension Fund
www.gpf.or.th

Useful market websites

The Stock Exchange of Thailand
www.set.or.th

Bond Electronic Exchange
www.bex.or.th

Thai Bond Market Association
www.thaibma.or.th

Thailand Securities Depository Co. Ltd
www.tsd.co.th

TRIS Rating Company Ltd
www.trisrating.com

*Links are to third-party websites, and do not contain BofAML Global Research.

EEMEA countries

Czech Republic

Gabriele Foa >>
MLI (UK)

Mai Doan
MLI (UK)

Overview

The Czech Republic is one of the most developed and open CEE states, and its convergence toward the Eurozone is advanced. Exports total more than 70% of GDP, concentrated in machinery and transport equipment to the European Union. A strong banking sector, a solid competitive position and prudent macro management underpin the Czech Republic's favorable reputation. GDP is outperforming potential growth, with 2018-19E likely staying above 3% as the cyclical recovery is further boosted by the EU funds cycle, while monetary normalization is taking place from a very low starting point.

Czech National Bank

Objectives

The Czech National Bank's (CNB) mandate is to maintain price and financial stability, preserve sound operation of the financial system, issue banknotes and coins, manage the circulation of currency and administer clearing between banks, and supervise the entities operating on the financial market. The 2% inflation target is effective from January 2010. The CNB strives to ensure that inflation does not diverge from the target by more than one percentage point either side.

Through monetary policy, the CNB seeks to preserve price stability, which is defined as low and stable inflation. Through macro-prudential policy, the CNB fosters financial stability and financial system resilience, which are necessary conditions to maintain price stability. Through the joint action of monetary policy and macro-prudential policy, the CNB contributes to maintaining confidence in the value of the Czech koruna and safeguarding macroeconomic stability. By supervising the financial market and creating prudential rules and rules of conduct for clients, the CNB protects individuals and institutions conducting business in the financial market. As the bank of the state, the CNB provides banking services to the state and the public sector.

Legal framework

The CNB was established under the Constitution of the Czech Republic and carries out its activities in compliance with Act No. 6/1993 Coll. of 17 December 1992. The CNB manages its assets, including the international reserves, with due diligence. Interventions in its activities are only permissible on the basis of law. The CNB is part of the European System of Central Banks and contributes to the fulfilment of its objectives and tasks. It is also a part of the European System of Financial Supervision and cooperates with the European Systemic Risk Board and with European Supervisory Authorities.

Under Article 98 of the Constitution of the Czech Republic, and in line with EU primary law, the CNB's primary objective is to maintain price stability. Achieving and maintaining price stability is the central bank's ongoing contribution to creating conditions for

Table 87: Key facts

Name	Czech National Bank (CNB)
Founded	1993
Governor	Jiri Rusnok
Board members	7
Autonomous	Yes
Government representative on board	None
Terms	6 years
Inflation target	2.0% with ±1pp tolerance band
Latest move	Hike (2 August 2018)

Source: BofA Merrill Lynch Global Research, Czech National Bank

Table 88: Key links*

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
Statistics
Monetary policy
Ministry of Finance
Czech Statistical Office

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

sustainable economic growth. Central bank independence is a prerequisite for effective monetary instruments conducive to price stability.

Decisions

The supreme governing body of the CNB is the Bank Board, which sets monetary policy and the instruments for implementing this policy, and decides the CNB's fundamental monetary policy measure and those for financial market supervision.

The current board

The CNB Board consists of seven members, including the governor and two vice governors. All members are appointed by the President of the Czech Republic for a maximum of two six-year terms. The Governor, or a Vice Governor nominated by the President, chairs the meetings. Decisions are made with a simple majority if at least four members are present. In the event of a tie, the chairperson has the casting vote.

Jiri Rusnok, who has been on the Bank Board since March 2014, was officially named Governor of the CNB on 25 May 2016, with effect from 1 July 2016. Vojtech Benda and Tomas Nidetzky were also appointed Board Members with the same starting date. Oldrich Dedek and Marek Mora were the latest additions to the Board, from 13 February 2017.

Table 89: Board members

Name	Term starts	Current term ends	Background	Perceived policy stance
Jiri Rusnok, governor	Jul 2016	Jun 2022	Rusnok has been a Bank Board member since March 2014. He graduated from the Faculty of Economics at the Prague University of Economics. In 2005-12 he served as president of the Association of Pension Funds of the Czech Republic. In 2009-13 he was president of the Audit Public Oversight Council. From 25 June 2013 to 29 January 2014 he served as Prime Minister of the Czech Republic.	Dovish, receptive to research department's recommendations
Mojmir Hampl, vice governor	Dec 2006	Nov 2018 (second and final term)	Hampl graduated from the Faculty of Economics and Public Administration at the University of Economics, Prague in 1998, where he defended a doctoral thesis in 2004. In 2002-04, he was engaged in macroeconomic research and research on CEE financial markets as an economist at Ceska Sporitelna of Erste Group. In 2004-06, he was a member of the Board of Directors and Chief Executive Director of the Czech Consolidation Agency.	Hawkish
Vladimir Tomsik, vice governor	Dec 2006	Nov 2018 (second and final term)	Tomsik graduated from the Faculty of Economics and Public Administration and the Faculty of Finance and Accounting at the University of Economics, Prague, and the Faculty of Social Sciences at Charles University, Prague. He has PhDs in economic policy from the University of Economics, Prague and economics from Charles University, Prague. In 2000, he worked as an analyst at financial and consulting group Newton Holding.	Dovish
Vojtech Benda	Jul 2016	Jun 2022	Benda graduated from the Faculty of International Relations at the University of Economics in Prague. In 1998 he joined the Czech National Bank, first as an economic analyst and later as a principal economic analyst in the Monetary Department. In 2006–12 he was senior economist in the international economic research team of the ING financial group. Between April 2014-17 he was an adviser to Jiří Rusnok.	Hawkish
Oldrich Dedek	Feb 2017	Feb 2023	Dedek graduated from the University of Economics in Prague. He was a researcher at the Economic Institute of the Czechoslovak Academy in 1978-1992. In 1996-1998 he was an adviser to the CNB Governor and Prime Minister of the Czech Republic. In 1999-05 he held the post of the CNB Vice-Governor and the associated post of alternating Governor at the World Bank. In March 2007 he was appointed National Coordinator for euro adoption in the Czech Republic.	Dovish
Marek Mora	Feb 2017	Feb 2023	Mora graduated in international trade from the University of Economics in Prague, and completed graduate studies in economics in Saarbrücken and Hamburg. He held various roles in the Czech public administration, including Deputy Minister of Education, deputy to the Deputy Prime Minister, Minister for European Affairs. Between 2010 and 2017, he worked at the General Secretariat of the Council of the European Union.	Swing/hawkish
Tomas Nidetzky	Jul 2016	Jun 2022	Nidetzky graduated from the Faculty of Informatics and Statistics at the University of Economics in Prague and completed his postgraduate studies at Oklahoma City University in the US. From 2003, he was a member of the Executive Board and Executive Director in charge of retail financial services at ING in the Czech Republic and the Slovak Republic. In 2004-10 he worked as Deputy Chairman of the Board and First Deputy Chief Executive Officer of Stavební spořitelna České spořitelny. In 2011-13 he was director of internal distribution at ČSOB Pojišťovna. In 2013-16, he worked as Chief Sales Officer at NN Czech Republic.	Swing/hawkish

Source: BofA Merrill Lynch Global Research, Czech National Bank

Monetary policy regime and instruments

In December 1997, the CNB Bank Board changed its monetary policy regime and switched to inflation targeting at the start of 1998. This did not involve any change in objective, only in the way the bank goes about achieving it.

The main features of inflation targeting are its medium-term focus, the use of an inflation forecast and the explicit public announcement of an inflation target or sequence of targets. The Bank Board assesses the latest CNB forecast and evaluates the risks of non-fulfilment of this forecast in its monetary policy decision-making. Based on these considerations, the Bank Board votes on whether and how to change monetary policy instrument settings. By changing these instruments, the central bank seeks to offset excessive inflationary or disinflationary pressures that are deviating future inflation from the inflation target or from the tolerance band around this target.

Open market operations are used for steering interest rates in the economy. Open market operations are mostly executed in the form of repo operations, based on a general agreement on trading on the financial market.

Automatic facilities are used to provide loans and deposit liquidity overnight. As these represent standing facilities for depositing or borrowing money from the banks' point of view, the interest rates applied to them form the corridor for short-term money market rates, as well as for the two-week repo rate.

The minimum reserves are generally one of the main monetary policy instruments through which the central bank can influence the amount of liquidity in the banking system. The reserve requirement is 2% of the base used for calculating the minimum reserves.

FX interventions are purchases or sales of foreign currencies against the Czech koruna in the foreign exchange market by the CNB. They are aimed at dampening foreign exchange market volatility and/or easing/tightening monetary policy. Between November 2013 and April 2017, FX was the main monetary policy tool, as interest rates hit the zero bound in November 2012. The CNB is now on a gradual rate normalization path after the exit from the EUR/CZK floor.

Exchange rate regime

The CNB exited the EUR/CZK floor regime on 6 April 2017 after more than four years (from 7 November 2013) due to deflation risks and the zero lower bound on interest rates. The exit reflected the CNB's comfort that the domestic inflation process was sustainable, and the economy was ready for monetary policy normalization.

Current policy stance

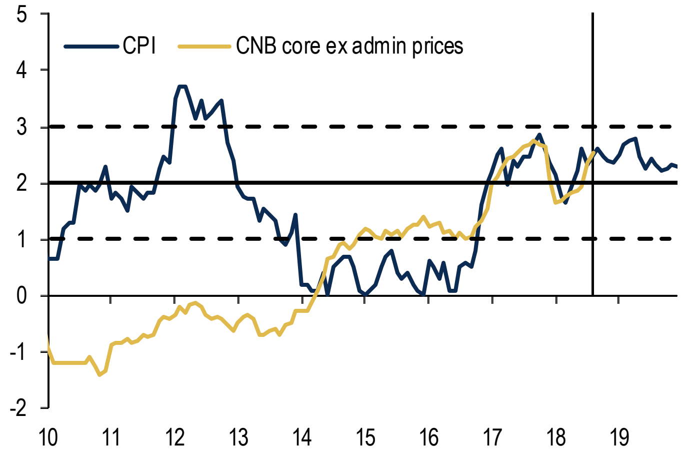
The CNB is on a steady tightening path amid the overheating situation in the domestic economy, visible in the labor and housing markets. The CNB generally maintains a cautious approach in view of ongoing monetary accommodation in the Euro area. But as long as EUR/CZK stays above 25.5, we think further hikes are likely this year, and we look for YE2018 policy rate at 1.75% and YE2019 at 2.50%. A weaker CZK profile would front-load rate hikes.

Meetings, data and information dissemination

The CNB Board discusses monetary issues eight times a year and, in exceptional cases, may also decide on monetary issues at extraordinary meetings. The Bank Board's monetary policy decision is published after the end of the monetary policy meeting at 1pm local time. This is followed by a press conference at 2:15pm local time, at which point the CNB releases the Bank Board's statement about the interest rate settings.

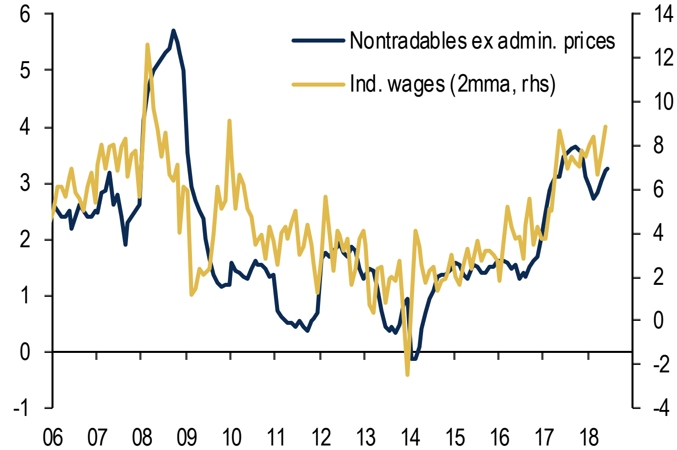
The statement also contains the reasons for the Bank Board's decision, including the risks pertaining to the current forecast. The statement and the background material for the presentation given at the press conference are available immediately on the CNB website. Audio and video recordings are also available on the CNB website about one hour after the press conference. The meeting minutes, reflecting the board members' discussions, are usually published eight days later. When a new forecast is not available (i.e. four times a year), a Graph of Risks to the Inflation Projection (GRIP) with comments is published. Detailed transcripts of all monetary policy Bank Board meetings and the related inputs for the decisions are published six years later.

Chart 72:Inflation hovering above the 2% target



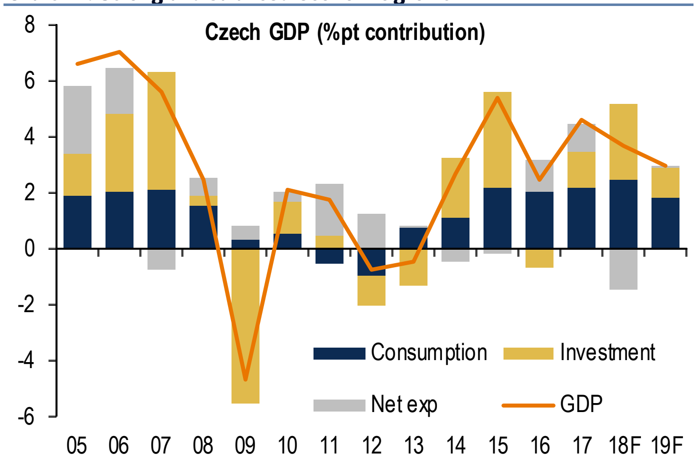
Source: Haver, BofA Merrill Lynch Global Research

Chart 73: Wages to sustain core inflation



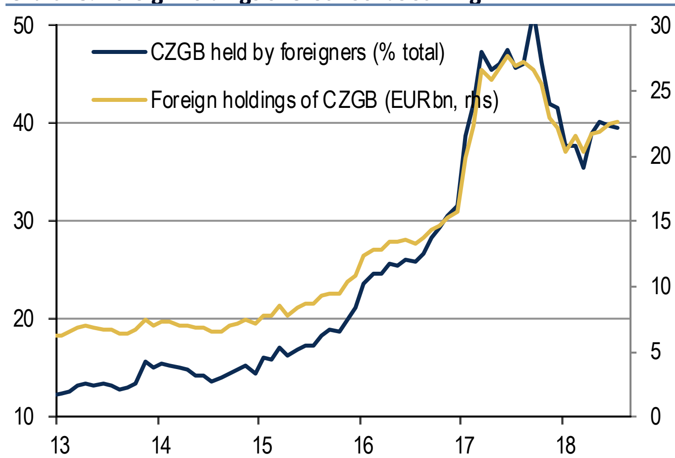
Source: Haver, BofA Merrill Lynch Global Research

Chart 74: Strong and balanced economic growth



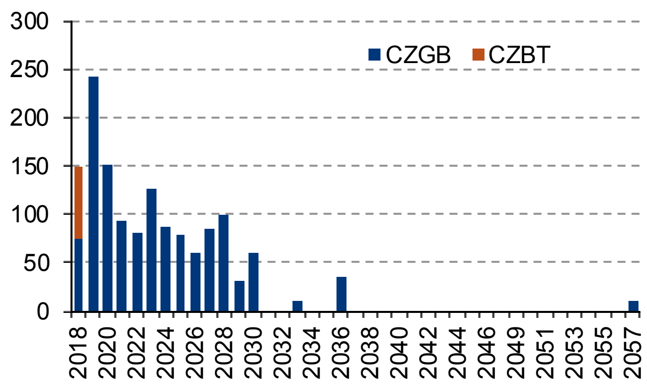
Source: Haver, BofA Merrill Lynch Global Research

Chart 75: Foreign holdings of Czech bonds still high



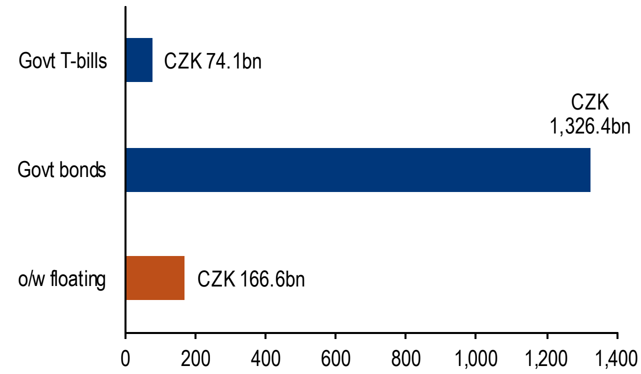
Source: Haver, BofA Merrill Lynch Global Research

Chart 76: Maturity profile of outstanding Czech government securities



In CZK billion. Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 77: Outstanding CZK debt types by category (latest)



Source: BofA Merrill Lynch Global Research, Bloomberg

Local/external debt ratings

	Local	External
2018	A1/AA/A+	A1/AA-/A+
2017	A1/AA/A+	A1/AA-/A+
2016	A1/AA/A+	A1 /AA-/A+
2015	A1/AA/AA-	A1 /AA-/A+
2014	A1/AA/AA-	/AA/A+
2013	A1/AA/AA-	/AA-/A+
2012	A1/AA/AA-	/AA-/A+
2011	A1/AA/AA-	/AA-/A+
2010	A1/A+/AA-	/A/A+
2009	A1/A+/AA-	/A/A+
2008	A1/A+/AA-	/A/A+
2007	A1/A+/A+	/A/
2006	A1/A/A+	-
2005	A1/A/A+	-
2004	A1/A/A	-
2003	A1/A+/A	-
2002	A1/A+/A	-
2001	A1/AA-/A	-
2000	A1/AA-/A+ -	

Source: BofAML Global Research, Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: yield to maturity
Settlement: T+3
Basis: ISMA-30/360
Coupon frequency: annually

IRS

Fixing: 6m PRIBOR 11am CET (1y IRS fixes against 3m PRIBOR
Coupon frequency: annual fixed Act/360, semi-annual floating Act/360

Bloomberg pages

CZK Curncy ALLQ<GO> FX rates
OTC CZK<GO> – market monitor
CNB<GO> – central bank and bond auctions

Reuters pages

FX page <ECB37>
Bonds page 0#CZTSY=

Useful websites

Czech National Bank
www.cnb.cz

Ministry for National Economy
www.mfcr.cz

Central Statistics Office
www.czso.cz

Prague Stock Exchange
www.pse.cz

Prague Securities Centre
www.cdcp.cz

*Links are to third-party websites, and do not contain BofAML Global Research.

Economic structure and outlook

The Czech Republic will likely maintain robust and balanced growth rates in the coming year close to 3%, slightly above potential, as the cyclical recovery is further supported by a resumption of EU funds in the 2014-20 financial perspectives, and given still easy monetary policy. Private consumption will likely remain the biggest contributor to growth, underpinned by solid employment and income, high saving ratios, and housing market boom. The investment outlook also appears optimistic, with dynamic growth in the private sector as well. We think headline inflation will stay higher than the 2% target as wage pressures sustain core inflation. A less favorable external backdrop, e.g., relating to trade wars and auto tariffs, could undermine the improvement in domestic variables given the small open economy, but only in second-round impact rather from than direct trade links with the US.

Bond market

The Czech Republic's local debt market remains small. The domestic government debt market has a total outstanding amount of around US$63bn.

Short-term or floating rate debt. Around 5% of the debt is in T-bills. Another 12% is in FRNs.

Fixed coupon debt. The remaining 83% of debt has a fixed coupon. The yield curve reaches 2030, with one 2033, one 2036 and one 2057 bond. Liquidity is considerably lower past the 10y tenor. The curve has historically resembled movements in core rates. Since 2013, the curve flattened on the back of the strong inflows experienced during the currency floor. The relation with core rates is now less pronounced since the CNB started hiking. The curve remains relatively flat as hikes triggered a strong increase in short-end market rates. The beta to EUR rates is still high past the 5y tenor.

Bonds trade on the Prague stock exchange or over the counter. Daily trading volumes increased after the floor exit last year and are now around CZK300mn with ticket sizes of CZK50-100mn.

The Ministry of Finance shifted the composition of debt significantly over the past decade. While Treasury bills were the majority issue type 10 years ago, this pattern changed and fixed rate bonds have become dominant. The increasing supply of bonds should help the local debt market gain more depth. Issuance is distributed relatively evenly across the curve. In September 2017, a large T-bill maturity was not rolled over but bill issuance resumed in October. Bills are currently rolled over on a regular basis. The average maturity of government debt has been increasing due to changes in the past decade, and since around 2005 the average has been over five years. Average maturity is currently 5.3 years.

Auction and placement mechanism. Bond auctions are held by the CNB two or three times a month and results are posted on the Ministry of Finance website. Issuance calendars for T-bills and bonds are published monthly on the third or fourth Monday of the preceding month. Auctions usually occur on Wednesdays for bonds and Fridays for T-bills. The former has standard maturities of 3y, 5y, 7y, 10y and 15y, though there is no specified pattern of issuance. T-bill maturities are 13, 26, 39 and 52 weeks.

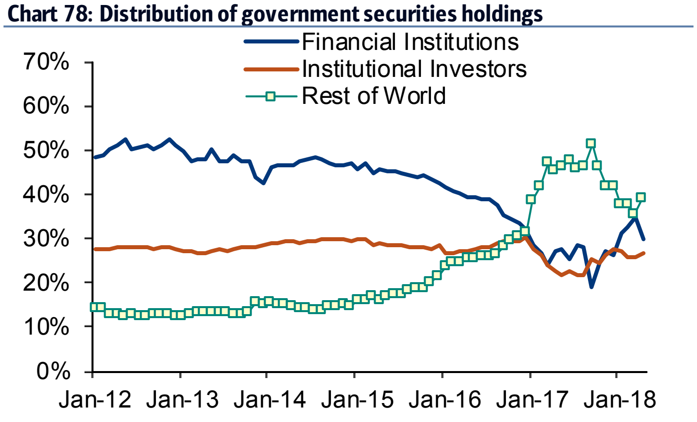
Derivatives market

Czech FRAs and IRS are relatively active with daily volumes increasing to US$75-125K DV01 with a typical ticket size of US$15k DV01 and bid-offer of 1.5-2bp. The international interest in IRS has increased since the CNB was the first central bank in Europe to resume tightening in August 2017. In the past year, international activity in IRS has surpassed that in bonds (though bond foreign ownership remains high).

Interest rate swaps. Most interest rate swaps are 2-10 years and are traded more often than cash bonds. The floating leg is 6m PRIBOR, with the exception of the 1y IRS, which fixes against 3m PRIBOR. Liquidity is best up to 5y. FRAs are most popular for trading the front end of the curve with liquidity up to two years.

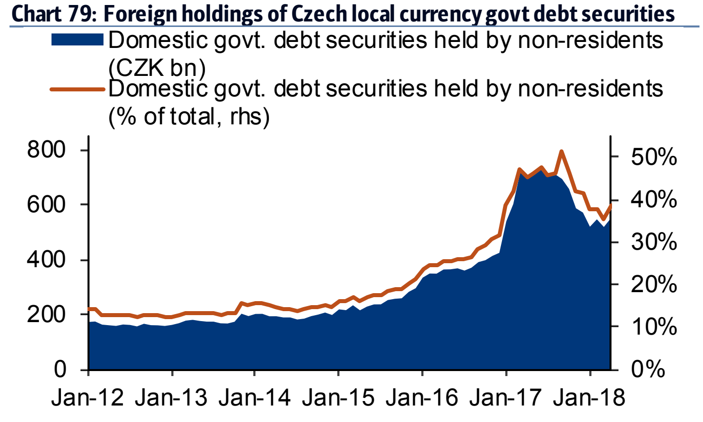
Basis swaps. Cash flow exchanges between 3m floating EURIBOR and 3m floating PRIBOR. They are liquid out to 10 years in normal market conditions.

Chart 78: Distribution of government securities holdings



Source: BofA Merrill Lynch Global Research, Haver

Chart 79: Foreign holdings of Czech local currency govt debt securities



Source: BofA Merrill Lynch Global Research, Haver

Table 90: Summary statistics of Czech derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-Ask spread	Bloomberg / Reuters Reference
Interest rate swaps				
2-year	75K DV01	15K DV01	1.5bp	CKSW1 /CZKVIEW
5-year	125K DV01	15K DV01	2bp	CKSW5 /CZKVIEW
10-year	75K DV01	15K DV01	2bp	CKSW10 /CZKVIEW
Basis swaps				
	USD 200mn	USD 30mn	5bp	CKEUBS1/ICAPCZK

Source: BofA Merrill Lynch Global Research, Bloomberg, Reuters

FX market

The Czech koruna (CZK) is fully convertible and has been freely floating since 1997. The government and the central bank have joint responsibility for the exchange rate. In fall 2013, after a domestic debate about the role of FX interventions, the CNB finally started intervening to explicitly keep the koruna close to 27 against the EUR, thereby accumulating large EUR reserves. The CNB exited the floor regime in April 2017. to Eurozone convergence has advanced, but recent EU political turmoil has increased the debate around Eurozone adoption. EUR/CZK dominates trading but USD/CZK is liquid too. Daily volumes average around EUR1bn, with typical ticket sizes of EUR20mn and bid-offer around CZK0.03. The forwards and swap markets are liquid out to one year. Options are also available, but liquid up to two years.

Table 91: Vital statistics and characteristics of the Czech Republic's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
CZK						
Spot	CZK Spot	EUR1bn	EUR20m	CZK 0.03	EURCZK=	▪ EUR/CZK dominates trading but USD/CZK is liquid too.
Forwards	Forwards & Swaps	EUR4bn	EUR10mn	CZK 0.03	EURCZKFWD=	▪ Forwards are liquid up to 1 year.
Options	FX Options	EUR0.1bn	EUR25mn	0.6 vol	EURCZKVOL	▪ Options are available till tenor of 5 years but are liquid up to 2 years.

Source: BofA Merrill Lynch Global Research, Reuters

Investor base

Private pension funds play a modest role in the government bond market (total assets of US$16bn as of 2017, of which around 90% were in bonds). The second pension pillar ceased to exist as of January 2016, and assets were transferred back to savers by January 2017. Participation in the second pillar was voluntary and was quite low (under 90k people), so the effect from the cancellation was minimal. The third pillar has remained in place.

Foreigners have typically played a modest role in CZK local markets. The introduction of the floor, however, has been accompanied by a steep increase in foreign holdings, as the rates differential between CZK and EUR rates could be earned at no FX risk. During the EUR/CZK floor, foreign holdings increased from 15% in late 2014 to 51% in September 2017. International ownership started falling as the floor was dropped, and foreigners now hold around 39% of the outstanding local debt. As of April 2018, pension funds and insurance companies held around 27% of outstanding government CZK securities. Other financial institutions held around 30%.

Rules, regulations, capital controls and taxation

The last amendment to the Foreign Exchange Act in 1995 lifted exchange controls, aligning Czech rules with the EU's. There are no restrictions on foreign currency transactions or on ownership of fixed income securities. Dividends/interest paid to non-EU residents are subject to 35% withholding tax (WHT), unless the rate is reduced under an applicable tax treaty, or exempt under the EU interest and royalties directive. A capital gain tax is charged at 15% (individuals) or 19% (legal entities) as part of the income tax.

Clearing settlement and taxation

Settlements occur via the Central Securities Depository Prague (CDCP). They can also take place through Euroclear and Clearstream.

Table 92: Summary of Czech Republic bond markets and products

Instrument	Treasury bills	Government bonds
Issuer	Ministry of Finance	Ministry of Finance
Currency	CZK	CZK
Principal	CZK 1,000,000	CZK 10,000
Tenor	13, 26, 39, and 52 weeks	2-20 years, 40 years
Interest rate/coupon	Issued at discount	Fixed
Coupon Payments	Zero	Annual
Day Count Calculation	Act/360	Act/Act
Amortization Schedule	Bullet	Bullet
Form	Registered	Registered
Amount outstanding (as of Jun 2018)	CZK 74.1bn	CZK 1,326.4bn
Secondary Market		
Trading	OTC and Prague Stock Exchange	OTC and Prague Stock Exchange
Quotation Convention	Price	Price
Settlement Period	T+3	T+3
Average Daily Turnover		CZK 200-300mn
Bid/offer spread (0-5Y)	1.5bp	2bp
Bid/offer spread (5Y+)	NA	3-5bp
Average trade size		CZK 50-100mn
Clearing Mechanism	Central Depositary of Securities, Euroclear, Clearstream	Central Depositary of Securities, Euroclear, Clearstream
Major players	Primary dealers	Primary dealers
Trading hours	9:00 – 16:30 (Czech Rep)	9:00 – 16:30 (Czech Rep)
Bidders	All entities or individuals, including non-residents, may participate.	All entities or individuals, including non-residents, may participate.
Regulations		
Restrictions on Foreign Investment	No restrictions	No restrictions
Custodian	Yes	Yes
Withholding Tax	35% on dividends and interest payments to non-EEA residents	35% on dividends and interest payments to non-EEA residents
Capital gains Tax	Charged at 15% (individuals) or 19% (legal entities) as part of the income tax	Charged at 15% (individuals) or 19% (legal entities) as part of the income tax
Entry/Exit Tax	None	None
Primary Auctions		
Auction Style	Dutch	Competitive multiple price
Average Issue Size	CZK 1-3bn	CZK 2-5bn
Minimum Amount of Tender	None	None

Source: BofA Merrill Lynch Global Research, Bloomberg, various local authorities

Egypt

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Overview

The bold liberalization of the FX regime by the Central Bank of Egypt (CBE), accompanied by large hikes to administered energy prices, provided a credible and frontloaded start to the economic reform program. Macro stabilization continues and the reform momentum is intact following the presidential elections. We expect USD/EGP to be relatively stable as T-bill carry is likely to remain high enough and the CBE policy stance tight enough to support portfolio rollovers. Some weakness may occur to reflect a stronger USD and some portfolio outflows through the FX interbank market. As the bulk of the T-bill inflows have occurred through the FX repatriation mechanism, outflows occurring through the mechanism would be serviced directly by the CBE and not impact spot in the FX interbank market.

The Central Bank of Egypt

Objectives

The Central Bank of Egypt (CBE) operates as an independent legal and public entity. It is responsible for formulating monetary policy and supervising its implementation, as well as realizing price stability and banking system soundness. Implementation of CBE policies takes place within the context of the government’s economic policy through the Coordinating Council. The council is chaired by the prime minister, and includes three government ministers, the CBE governor and deputy governors, and six economic outside advisors.

Legal framework

A monetary policy framework was launched in June 2005 with a medium-term goal of moving to inflation-targeting. A corridor for overnight facilities was introduced as the main policy instrument in June 2005, completing the move from a quantitative operational target (excess reserves) to a price target (overnight interbank rate). Steering the overnight interbank rate within the corridor is the CBE’s operational target, while market liquidity continues to be managed through its open market operations.

The long-awaited liberalization of the FX market took place in November 2016. USD/EGP is now priced freely in the FX interbank market. It has stayed broadly stable.

Decisions

The MPC meets on Thursdays every six weeks to set the overnight deposit and overnight lending rates. Transparency of decision-making has improved with the release of a core inflation measure in October 2009, followed by monthly inflation notes. A quarterly monetary policy report has been published since 1Q17. The MPC announced its inflation targets in May 2017 for the first time as well as the target achievement horizon, which is 13% (+/-3%) by 4Q18 and single digits thereafter.

Table 93: Key facts

Name	Central Bank of Egypt
Founded	1960
Governor	Tarek Hassan Amer
MPC members	9 (one post currently vacant)
Autonomous	Constitutionally independent
Government representative on board	Ahmed Kouchouk – Finance Minister Deputy for Financial Policies
Terms	4 years
Inflation target	13% +/- 3% for end-2018
Latest move	On hold at 16.75%-17.75% (June 2018)

Source: BofA Merrill Lynch Global Research, CBE

Table 94: Key links*

Main page
Board members
Inflation Report
Calendar and monetary policy statements
Statistics
Reports
Legal framework
Ministry of Finance
National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research.

The current board

The CBE board, which also serves as the Monetary Policy Committee (MPC), consists of eight members: the chairman (governor), two deputy governors and five other members, including the chairman of the Egyptian Financial Supervisory Authority, a representative from the Ministry of Finance, as well as two outside economic advisors and one legal advisor.

Monetary policy regime and instruments

Base rate. The MPC meets on Thursdays every six weeks to set the overnight deposit and overnight lending rates. The CBE intends to meet its inflation objectives by steering short-term interest rates, keeping developments in credit and money supply in view, as well as other factors that may influence the underlying rate of inflation.

Open market operations. Monetary operations primarily rely on indirect policy instruments, such as deposit auctions and standing facilities, which enable the CBE to achieve its monetary and liquidity targets. CBE instruments were issued for the first time in August 2005 as the primary instruments for liquidity management. T-bills, repo and deposit auctions are the most prominent tools, as CBE notes and CDs have not been issued since 2006 and 2007, respectively. To decrease the volatility of the overnight interbank rate since the revolution and facilitate liquidity management in the banking sector, the CBE launched a weekly 7-day repo auction facility in March 2011. Similarly, the CBE launched a new monthly 28-day repo facility, auctioned at a variable rate with a floor set at the minimum of the 7-day repo rate. In April 2013, the CBE suspended repo operations and reintroduced 7-day deposit auctions (which had not been used since 2011) to absorb excess liquidity.

The monetary policy framework during the IMF program is based on money targeting. Reserve money is an indicative target and reflects CBE projections of market liquidity consistent with the target inflation path. The CBE monitors annual reserve money (M0) growth adjusted by overnight deposits and seven-day deposit auctions. This measure has shrunk to reflect the absorption of excess liquidity via longer-term operations.

Table 95: Board members

Name	Date originally appointed	Current term ends	Background	Known policy stance
Tarek Hassan Amer, governor	Nov 2015	Nov 2019	Appointed governor in November 2015. He has 27 years of experience in banking sector where he covered regions including MENA, Turkey, the Gulf and Asia. Held senior executive positions leading the corporate finance and investment banking business covering MENA and the Gulf in Citibank and BofA. Served as chairman of the board of National Bank of Egypt, deputy chairman of Arab International Bank and a director for National Bank of Egypt (UK) Ltd.	No reported policy stance
Gamal Negm, deputy governor	27 Nov 2015	Nov 2019	Currently, a director of Arab International Bank and previously its chairman. Also, vice chairman of Egyptian Banking Institute and board member of Egyptian Financial Supervisory Authority.	No reported policy stance
Lobna Helal, deputy governor	27 Nov 2015	Nov 2019	In 2004, joined CBE to develop and execute a full-fledged two phased Banking Sector Reform Program (2004 till 2011). In 2011, became the first woman to serve on its board, as second deputy governor, before resigning in 2013. In November 2015, was appointed as the deputy governor, responsible for monetary stability. Became chair and managing director of the Egyptian Company for Mortgage Refinance between the stints.	No reported policy stance
Mohammed Omran, member of the board of directors	N/A	N/A	Chairman of the board at Egyptian Financial Supervisory Authority. A professor in financial markets, corporate governance and finance and privatization concentrating on the MENA region. Served as executive of Egyptian Stock exchange During 2010-2006 and was chairman of Federation Euro-Asian Stock Exchanges (FEAS) for 6 years.	No reported policy stance
Kamal Abu Elkhair, member of the board of directors	N/A	N/A	N/A	No reported policy stance
Laila Al Khawaga, member of the board of directors	N/A	N/A	Director at CBE. Serves as professor and head of economics department - Faculty of Economics and Political Science at Cairo University. Was a member of Shura council from 2001 until 2011.	No reported policy stance
Ahmed Kouchouk, member of the board of directors	N/A	N/A	Finance minister deputy for financial policies representative of the Ministry of Finance since 2016. Holds a post-graduate degree from Harvard University, was the director of the Finance Ministry's macro-fiscal policy unit between 2010 and 2013	No reported policy stance
Yehia Dakroury, member of the board of directors	N/A	N/A	Serves as the legal counselor for CBE Governor and the vice chairman of State Council. Member of the board at Egyptian Banking Institute.	No reported policy stance

Source: BofA Merrill Lynch Global Research, CBE

Lending and deposit facilities. The overnight deposit and lending rates, which form the policy interest rate corridor, are the main lending and deposit facilities. Overnight lending is rarely tapped, while the overnight deposit rate facility is tapped more frequently. In line with its price-stability mandate, the MPC raised policy rates by 700bp between November 2016 and July 2017, tightening monetary conditions to contain second-round effects of the significant supply-shocks and FX liberalization measures of November 2016. It subsequently eased rates by a total 200bps in February-March 2018.

Reserve requirements. The CBE may make use of reserve requirements whenever it deems liquidity surpluses or shortages as structural. The CBE cut the reserve requirement ratio on domestic currency deposits by 200bp to 12% in March 2012, and again by 200bp to 10% in May 2012 to ease EGP liquidity conditions in the banking sector. The CBE raised the reserve requirement ratio on domestic currency deposits by 4ppt to 14% in October 2017. Reserve deposits at the CBE are not remunerated. Reserve requirements are levied on demand and timed deposits with maturity of less than three months. Foreign currency deposits attract an RRR rate of 10%.

Table 96: Meetings and releases in 2018

	Monetary policy meeting	Monetary policy report	Inflation note
Jan			Jan
Feb	15 Feb		Feb
Mar	29 Mar	Mar	Mar
Apr			Apr
May	17 May		May
Jun	28 Jun	Jun	Jun
Jul			Jul
Aug	16 Aug		Aug
Sep	27 Sep	Sep	Sep
Oct			Oct
Nov	15 Nov		Nov
Dec	27 Dec	Dec	Dec

Source: BofA Merrill Lynch Global Research, CBE

Exchange rate regime and instruments

The CBE launched its floating exchange rate in November 2016 after a long period of heavily managing USD/EGP. The CBE supplies foreign exchange to the government to service external debt. The CBE indicated, within the IMF program, that it will not intervene in the interbank FX market. However, the CBE stands ready to make FX sales or purchases in exceptional cases, when unusually large short-term flows pose stability risks to the FX market. The CBE indicated these interventions would be done transparently and the objectives would be clearly communicated to the market.

Current policy stance

In its June 2018 meeting, the MPC decided to keep the overnight deposit rate, overnight lending rate, and the rate of the CBE's main operation unchanged at 16.75%, 17.75%, and 17.25%, respectively. The MPC decided that current policy rates remain appropriate at this juncture and consistent with the targeted disinflation path. The CBE sees temporary inflationary pressures due to fiscal consolidation, and expects structural reforms to have boosted potential output. The latter would keep an output gap despite the pick-up in domestic demand, contributing to lower demand-pull inflation pressures. We expect the CBE to maintain a relatively tight monetary stance with positive real interest rates to facilitate disinflation and foreign investors' rollover of T-Bill holdings.

Meetings, data and information dissemination

The MPC meets on Thursdays every six weeks to set the overnight deposit and overnight lending rates. A brief accompanying statement is released with the MPC decision. The quarterly monetary policy report, which has been published since 1Q17, is the main communication channel. The CBE publishes a financial stability report annually.

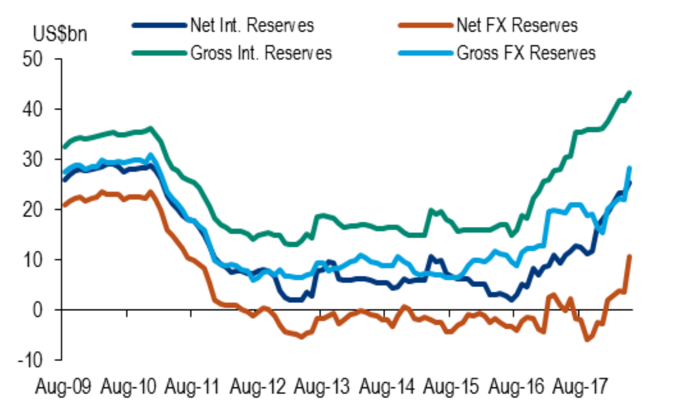
Economic structure and outlook

Macro stabilisation continues and the reform momentum is intact following the conclusion of the presidential elections. Domestic energy prices were hiked c15 days prior to the FY19 start, bringing them to 75% of cost recovery levels. Electricity and metro transport prices were also raised.

The 4Q17 current account deficit widened sequentially by US$1.2bn to US$1.7bn and was US$9.3bn on a trailing basis, from a peak of US$20.1bn in 4Q16. Net international reserves (NIRs) stood at US$44.1bn in May (8.4 months of import coverage), up from US$17.5bn in June 2016. The CBE holds US$8.5bn in deposits not reported in reserves.

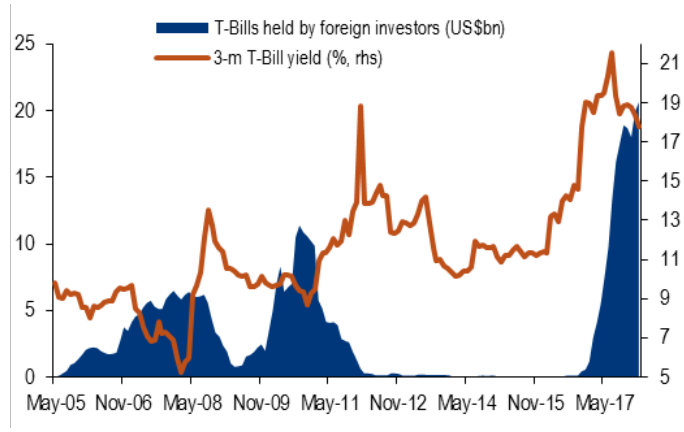
As of May, foreigners likely held cUS$20bn of T-bills, due to cUS$2bn in outflows. Foreign holdings represent a large c30% of the outstanding T-bill stock and c40% of NIRs including CBE deposits not included in FX reserves. CBE comments that it could intervene if EGP weakens beyond its comfort zone could cushion the carry trade.

Chart 80: Both gross and net foreign reserves have rebounded



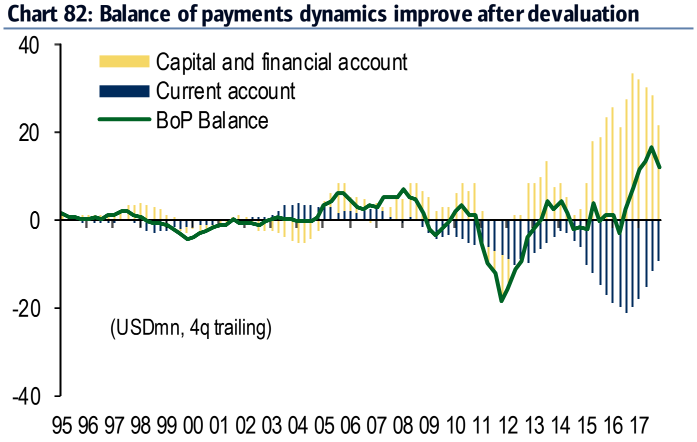
Source: Haver, BofA Merrill Lynch Global Research

Chart 81: Foreign investor holdings of T-bills are material



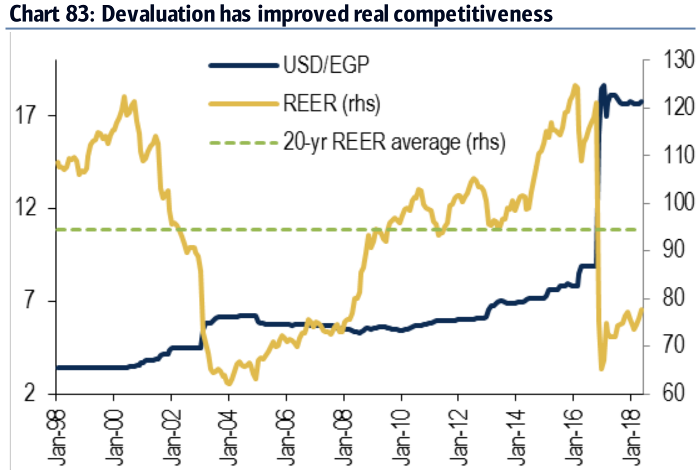
Source: Haver, BofA Merrill Lynch Global Research

Chart 82: Balance of payments dynamics improve after devaluation



Source: Haver, BofA Merrill Lynch Global Research

Chart 83: Devaluation has improved real competitiveness



Source: Haver, BofA Merrill Lynch Global Research

Inflation is to increase after energy-subsidy reforms, but base effects are likely to bring it to within the CBE's target of 13+/-3% by end-2018. CBE's gradual data-dependent easing stance and a focus on mom seasonally-adjusted inflation figures suggest the CBE could pause for the next several months.

The FY18 budget is key to anchor debt dynamics. A primary surplus is likely to be achieved due to energy-subsidy reform, wage restraint and VAT hikes. All fuel subsidies (except LPG) are likely to be eliminated, and an automatic fuel price indexation mechanism is likely to be introduced by December or fiscal year-end. The target is to bring the primary surplus to 2% of GDP in FY19, and keep it there. FY19 fiscal reforms will likely include fuel subsidy reform, wage bill control and improved tax mobilization.

A financing gap, reform slippage due to the socio-political backdrop, reversal of portfolio flows, high inflation, loss of competitiveness, political instability, and security issues are the main risks.

Bond market

The Egyptian local debt market is relatively large with around US$106bn in outstanding debt. The majority of local debt is in the forms of T-bills, as short-dated debt has been the main channel through which investors have been taking advantage of the EGP devaluation since late 2016. The stock of domestic debt has grown by 17% in the past 12 months, mostly thanks to stronger T-bill issuance. Trading in the secondary market is mostly over the counter. The primary dealer system introduced in 2004 gives them the exclusive right to bid at auctions for bills/bonds and act as market makers.

Short-term or floating rate debt. Of outstanding debt, T-bills account for about US$67.8bn. T-bills are issued for 91, 182, 273, and 364-day tenors. Foreign-denominated 1-year T-bills have also been issued from November 2011. T-bills are the preferred vehicle for foreigners to gain exposure to Egypt local markets but secondary markets are illiquid. Most investors hold bills until maturity and then decide whether to roll over the position. High and frequent CBE issuance (see below) makes primary markets relatively liquid.

Fixed coupon debt. Bonds constitute around US$58.5bn of debt. There are no data on foreign ownership of longer-term bonds, but the bulk of inflows experienced over the past 18 months have taken place mostly visa bills. There are also sizable portions of securities issued to the CBE and bank restructuring bonds.

Auction and placement mechanism. The average life to maturity of outstanding T-bonds is small at just 3.4 years as of the end of June 2018. The CBE conducts auctions on behalf of the Ministry of Finance. There are weekly competitive auctions for the bills where only authorized primary dealers are allowed to bid. The Ministry of Finance publishes a quarterly issuance schedule and auction details are announced by the CBE one week before. Auction results are announced at the end of day. Bond auctions are less frequent, usually held every two weeks, but they can be held more often if demand justifies it.

Derivatives market

There is no liquid swap/FRA market in Egypt.

FX market

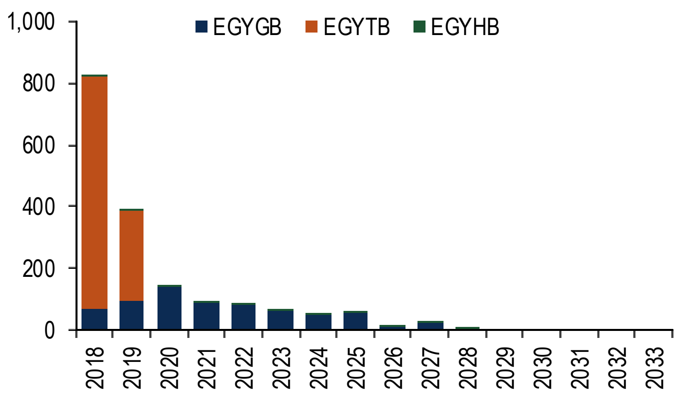
The Egyptian pound is locally convertible and only authorized banks can deal in FX. Most of the currency trading takes place through non-deliverable forwards. NDFs have become particularly popular in the aftermath of the 2016 devaluation, both as a means for international investors to take on EGP risk, and as a way to hedge T-bill exposure (T-bill yields have been consistently above NDF yields over 2017). The NDF market is relatively illiquid, with daily liquidity of USD50mn and ticket size of USD3-5mn.

Table 97: Vital statistics and characteristics of the Egypt's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
EGP						
Spot	EGP Spot	Illiquid	NA	NA	EGP=	▪ Mainly trades against USD
Forwards	EGP NDFs	USD45mln	USD3-5mln	EGP 0.03		▪ Illiquid

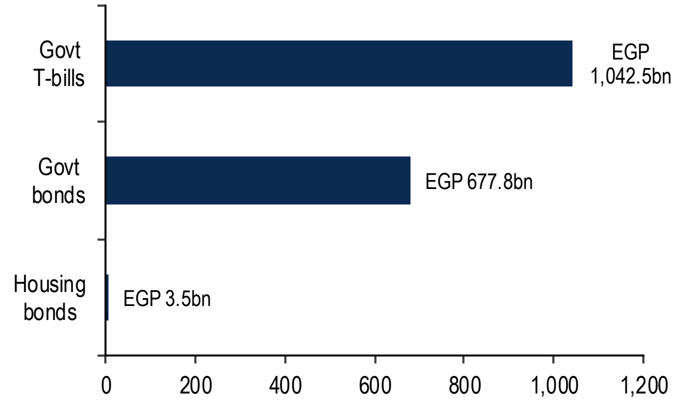
Source: BofA Merrill Lynch Global Research, Reuters

Chart 84: Maturity profile of outstanding Egyptian government securities in EGPbn



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 85: Outstanding EGP debt types by category (latest)



Source: BofA Merrill Lynch Global Research, Bloomberg

Investor base

Egypt is a frontier market for local currency debt, as the market really started opening only in late 2016 and local bonds not being present in any index. The domestic banking sector dominates the debt market. As of February 2018, banks held around 50.9% of the outstanding T-bills, split between public (27.6%) and private sector (23.3%) banks. Foreign presence has historically being concentrated in T-bills, which international investors use as an EGP carry trade. Foreign presence peaked at roughly 25% of the total in 2007, and then fell close to 0% during the global financial crisis and the Revolution. The late-2016 devaluation sparked strong inflows into T-bills, with foreign holdings rising to 31% of the total (or USD20.6bn) as of February 2018. Bills are relatively short maturity (3m-1y) and are regularly rolled over by investors. Capital inflows in the form of bill purchases translated into stronger issuance and accumulation of USD reserves at the CBE. The time series provided by the CBE stops in February but reserves are down USD5bn since February, suggesting recent EM volatility has caused some reduction in T-bill foreign ownership in the form of missed roll overs. Foreign holdings of bonds are minimal.

Rules, regulations, capital control and taxation

The CBE established an interbank system in 2004 and only authorized banks can deal in FX. In March 2013, the central bank reintroduced a repatriation fund mechanism to ring-fence proceeds of portfolio investment from being used to fund any balance of payments deficit. The FX repatriation mechanism allows foreign investors in the domestic debt and equity market to hedge convertibility risk for a fee, as their FX demand on exit would be serviced directly by the CBE. Likewise, upon entry into the FX repatriation mechanism, the FX proceeds of the portfolio investment are sold directly to the CBE by the custodian without passing by the FX interbank market. As of December 2017, the CBE applies a 1% entrance fee upon entry in the FX repatriation mechanism, while the exit fee remains 0.5%. Reserves data suggests that funds deposited at the CBE via the repatriation mechanism are USD8.5bn as of end-May.

Foreign investors are allowed to maintain local and FX cash accounts only to facilitate securities settlement. Current accounts are generally non-interest bearing. There is a 20% withholding tax applicable on interest income on T-bills since May 2008 and bonds since July 2008. Double taxation treaties apply in deciding the effective rate. US and UK based entities can effectively pay 15%.

Clearing and settlement

Misr for Central Clearing, Depository and Registry (MCDR) is the central clearing house and depository. It is regulated by the Egyptian Financial Supervisory Authority (EFSA) and the CBE.

Table 98: Summary of Egypt bond market and products

Instrument	Treasury bills	Government bonds
Issuer	Ministry of Finance	Ministry of Finance
Currency	EGP	EGP
Principal	EGP25,000 (par)	EGP1,000 (par)
Tenor	91, 182, 273 and 364 days	3, 5, 7, and 15 years
Interest rate/coupon	Issued at discount	Fixed
Coupon Payments	Zero	Semi-annual
Day Count Calculation	Act/365	Act/Act
Amortization Schedule	Discount	Bullet
Form	Registered	Registered
Amount outstanding (as of Jun 2018)	EGP 1,042.5bn	EGP 677.8bn
Secondary Market		
Trading	OTC	OTC and stock exchange
Quotation Convention	Yield	Yield
Settlement Period	T+2	T+1
Average Daily Turnover	NA	NA
Bid/offer spread	NA	NA
Average trade size	NA	NA
Clearing Mechanism	Misr for Central Clearing, Depository and Registry (MCSD)	Misr for Central Clearing, Depository and Registry (MCSD)
Major players	Primary dealers	Primary dealers
Trading hours	10:00-13:00 (Egypt)	10:00-13:00 (Egypt)
Bidders	Mostly banks	Mostly banks
Regulations		
Restrictions on Foreign Investment	No restrictions	No restrictions
Custodian	Yes	Yes
Withholding Tax	Withholding tax at 20% since May 2008, unless reduced by double tax treatise (US and UK based entities pay 15%)	Withholding tax at 20% since May 2008, unless reduced by double tax treatise (US and UK based entities pay 15%)
Capital gains Tax	None	None
Entry/Exit Tax	None	None
Primary Auctions		
Auction Style	Competitive tender in a Dutch auction format via primary dealers	Competitive tender in a Dutch auction format via primary dealers
Average Issue Size	EGP7-10bn	EGP1-3bn
Minimum Amount of Tender	None	None

Source: BofA Merrill Lynch Global Research

Local/external debt ratings

	Local	External
2018	B3/B/B	B3/B/B
2017	B3/B-/B	B3/B-/B
2016	B3/B-/B	B3/B-/B
2015	B3/B-/B	B3/B-/B
2014	Caa1/B-/B-	Caa1/B-/B-
2013	Caa1/B-/B-	Caa1/B-/B-
2012	B2/B-/B+	B2/B-/B+
2011	B2/B+/BB	B2/B+/BB-
2010	Baa3/BBB-/BBB-	Ba1/BB+/BB+
2009	Baa3/BBB-/BBB-	Ba1/BB+/BB+
2008	Baa3/BBB-/BBB-	Ba1/BB+/BB+
2007	Baa3/BBB-/BBB	Ba1/BB+/BB+
2006	Baa3/BBB-/BBB	Ba1/BB+/BB+
2005	Baa3/BBB-/BBB	Ba1/BB+/BB+
2004	Baa1/BBB-/BBB	Ba1/BB+/BB+
2003	Baa1/BBB-/BBB	Ba1/BB+/BB+
2002	Baa1/BBB/BBB	Ba1/BB+/BB+
2001	Baa1/BBB+/BBB+	Ba1/BBB-/
2000	Baa1/A-/A-	Ba1/BBB-/

Source: BofAML Global Research, Bloomberg, Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+1
Basis: Act/Act
Coupon frequency: Semi-annual

Bloomberg pages

EGP Curncy ALLQ<GO>FX rates
OTC EGP<GO> - Market monitor
CBEG<GO> - Central bank and bond auctions

Reuters pages

FX page <FEMF>
Bonds page 0#EGTSYS=

Useful websites

Central Bank of Egypt
www.cbe.org.eg

Ministry of Finance
www.mof.gov.eg

Egypt FSA
www.efsa.gov.eg

Central Agency for Public Mobilization and Statistics
www.capmas.gov.eg

Egypt stock exchange
www.egx.com.eg

Ministry of Investment and International Cooperation
www.miic.gov.eg

Misr for central clearing, depository and registry
www.mcdr.com.eg

*Links are to third-party websites, and do not contain BofAML Global Research.

Hungary

Gabriele Foa >>
MLI (UK)

Mai Doan
MLI (UK)

Overview

Hungary is one of the more developed and open CEE states. Economic growth in the latter half of the previous decade has been highly leveraged on external trade, facilitated by large capital inflows, as Hungary has been undergoing multi-year fiscal consolidation. Since 2009, Hungary has undergone an internal and external deleveraging process. The results are impressive, and the economy is now much more balanced, currently in a solid recovery phase with trend growth improving to around 3%. The EU and Germany in particular, is Hungary's main export destination, with increasing exposure to the auto sector in this decade.

The National Bank of Hungary

Objectives

The primary objective of Magyar Nemzeti Bank (MNB), or the National Bank of Hungary (NBH), is to achieve and maintain price stability, defined as 3% inflation since 2005. The target is agreed by the MNB and the government. Without prejudice to its primary objective, the MNB is to support the government's economic policy using the monetary policy instruments at its disposal.

The central bank's tasks include defining and implementing monetary policy, issuing banknotes and coins; holding and managing FX reserves to preserve the external stability of the economy; conducting foreign exchange operations for reserve management purposes and implementing exchange rate policy; overseeing the payment and securities settlement systems; collecting and disclosing relevant statistics; and, in cooperation with other competent authorities, supporting the efficient development and conduct of policies relating to the prudential supervision of credit institutions and the stability of the financial intermediary system.

Legal framework

The legal framework regulating the Magyar National Bank was changed by the Fidesz government with the adoption of Act CXXXIX of 2013, effective 20 March 2014. From a historical perspective, the first independent Hungarian central bank was founded in 1924. However, during both world wars, significant instability eventually led to the merger of the central bank and other commercial banks in 1947. The central bank's independence was reinstated in 1991.

Inflation targeting was introduced in 2001, but a combination of frequent fiscal policy spillovers on inflation and exchange rate constraints limited the success of the MNB in delivering inflation at target and anchoring expectations close to it. The exchange rate has been fully floating since February 2008.

Table 99: Key facts

Name	Magyar Nemzeti Bank
Founded	1924
Governor	György Matolcsy
Board members	9
Autonomous	Yes
Government representative on board	None
Terms	6 years
Inflation target	3.0% with ±1pp tolerance band
Latest move	Hold (18 September 2018)

Source: BofA Merrill Lynch Global Research, Magyar Nemzeti Bank

Table 100: Key links*

- Main page
- Board members
- Inflation Report
- Calendar, communiqués and minutes
- Statistics
- Reports
- Presentations and speeches
- Legal framework
- English version
- Ministry of Finance
- National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

Decisions

There are three main bodies to the Magyar Nemzeti Bank: the Monetary Policy Council, the Executive Board and the Supervisory Board. For monetary policy, the council is the supreme decision-making body. The council sets interest rates by a simple majority vote of members present. In the event of a tie, the governor has the deciding vote. If the governor cannot vote, the deputy governor has the deciding vote.

The Executive Board is responsible for implementing the decisions of the Monetary Policy Council and managing the operations of the MNB. Members of the Executive Board include: 1) the governor of the MNB, as chairman of the Executive Board; and 2) the deputy governors of the MNB.

The chairman acts on behalf of the Executive Board, which makes its decisions by a simple majority of votes of the members present. In case of a tie, the chairman has the deciding vote or, in his or her absence, the member of the Executive Board designated by the chairman. The Executive Board has a quorum of at least two of its members being present.

The current board

The MPC consists of a minimum of five and a maximum of nine members. The governor of the MNB chairs the council. There are three deputy governors (usually two, but an additional vice governor is permitted). Each member is appointed for a six-year term. The prime minister recommends to the President of the Republic a nominee for governor. At most, two terms are permitted. Parliament appoints the other members.

Governor Gyorgy Matolcsy was appointed in 2013, leaving his position as the Minister for National Economy. The Monetary Policy Council's stance and beliefs have changed significantly under the lead of Matolcsy. The current governor has a declared preference

Table 101: Monetary Policy Council members

Name	Date originally appointed	Current term ends	Background	Perceived policy stance
György Matolcsy, governor	Mar 2013	Mar 2019	PhD in economics, University of Economics in Budapest; former minister of Economic Affairs, founder and former head of Hungarian Economic Development Institute, former minister for National Economy.	Dovish, pro Fidesz, in favor of unconventional measures
Ferenc Gerhardt, deputy governor	Apr 2013	Apr 2019	PhD in economics, Budapest University of Economics; director of IT, Back Office, Institutional and Public Procurement and Facilities Management at the Magyar Nemzeti Bank, deputy CEO and member of the Board of Directors of Hungarian Development Bank.	Cautious/Dovish
Marton Nagy, deputy governor	Sep 2015	Aug 2021	Graduated with a degree in economics from Budapest University of Economics in 1999. He has been holding various positions at the MNB since 2002, and was an Executive Director before appointed as the Deputy Governor in 2015. Previously, he was an analyst at ING Group and the AKK.	Dovish/cautious, in favor of unconventional measures
Laszlo Windisch, deputy governor	Oct 2013	Oct 2019	Graduated from the Faculty of Law and Political Science at the Pazmany Peter Catholic University in 2002. In 2012 he earned a postgraduate degree in law. He was director of fiscal analysis at the MNB and executive directorate responsible for monetary policy after Matolcsy took over as governor in March 2013.	Dovish
Gusztáv Báger	July 2015	July 2021	MSc in Economics, graduated in 1961 from the Karl Marx University of Economic Sciences. He became the member of the Board of Directors of Budapest Bank Rt. in 1997. Director General of the Research Institute of the State Audit Office between 2003 and 2008.	Dovish
Kolos Kardkovacs	Sep 2016	Sep 2022	Graduated from the Faculty of Law of ELTE in 1996, degree of expert in European law in 2000 at the same University. In 2003, he completed his studies at the College for Finance and Accounting, specializing in Finance and Financial Institutions. He held various roles in the public administration, including Deputy State Secretary responsible for legal and coordination matters and Deputy State Secretary responsible for employment matters at the Ministry for National Economy.	Unknown
György Kocziszky	Apr 2017	Apr 2023	PhD in economics, University of Miskolc; former vice rector of the Technical University of Heavy Industry of Miskolc, dean of the Faculty of Economics of the University of Miskolc.	Dovish
Bianka Parragh	Mar 2017	Mar 2023	Graduated as an economist at the Faculty of Economics of the University of West Hungary in 2001, and then went on to earn a complementary degree in law at the University of Miskolc in 2004. She has 10 years' work experience in private sector corporate management various teaching positions since 2009. Areas of research and publication include innovative monetary and economic policy connected to the proactive role of the state, and the relationship between fiscal and monetary policy.	Unknown
Gyula Pleschinger	Mar 2013	Mar 2019	Graduated from Corvinus University in Budapest; appointed under the Orban government as state secretary for Tax and Fiscal Policy at the Ministry for National economy, previously CEO of the AKK; managing director of P&H Investment, deputy CEO of Raiffeisen Budapest.	Cautious

Source: BofA Merrill Lynch Global Research, Magyar Nemzeti Bank for cooperation with the government in pursuing policy objectives which implies a pro-growth stance. This is in stark contrast with the former Governor Andras Simor, who tended to have a stricter inflation-targeting bias.

Monetary policy regime and instruments

Inflation targeting was introduced in 2001 with an end of period target of 7% +/-1%. The corridor was cut to 4.5% +/1% the following year and lowered gradually to 3% in 2005, and changed to a continuous goal. The central bank decided to improve the flexibility of the inflation-targeting regime and designated a ±1 percentage point tolerance band in March 2015.

The MNB has undergone several steps of reform for its monetary policy toolkit. Since September 2015, the base rate is the rate remunerated on the three-month deposit rate. Effectively, this rate has been irrelevant. Since October 2016 the central bank has imposed a cap on total deposits that commercial banks can put in this facility. The cap was decided on a quarterly basis, and cut to HUF75bn in December 2017. The MNB recently decided that this stock will fall further to zero by end-2018 and the facility eliminated then, as the central bank is going through another overhaul of its toolkit. From 2019, required reserves will serve has the facility for the benchmark rate. Previously, the two-week repo bill was the main tool between 2007 and 2014, which was replaced by the two-week deposit facility from August 2014 to August 2015, and afterwards by the three-month deposit.

The Magyar Nemzeti Bank also engages in collateralized loans, outright securities transactions, repo, debt securities issuance and FX swaps. The MNB purchased bonds and announced FX swaps as a means for financial market stabilization during the post-2008 global and domestic crises. It does not buy sovereign bonds regularly, and now holds a preference to keep the balance sheet small, thus a bias against bond purchases and FX intervention.

Banks are required to hold reserves with the MNB and credit institutions have to meet the reserve requirement only at an average of one month, which allows them to reallocate their liquid assets within the period.

The current MPC has a clear preference for unconventional policy tools, which are mostly aimed at deterring HUF appreciation. For example, between April 2014 and April 2016, the MNB carried out a Self-Financing Program, where it actively offered interest rate swap facilities at a discount to the market. This came with conditionality to encourage local banks to hold government bonds instead of foreigners, in the central bank's efforts to reduce external vulnerabilities, as well as to encourage lending. Several cheap funding sources for lending programs have also been adopted since April 2013. Going forward, the central bank will focus on two main instruments to shape the monetary conditions: FX swaps providing HUF liquidity and the interest rate corridor.

Exchange rate regime and instruments

Pursuant to Act LVIII of 2001, the government determines the exchange rate regime in agreement with the Magyar Nemzeti Bank. The forint exchange rate has been floating freely since 26 February 2008.

Although the currency regime is a free float, the current Monetary Policy Committee implicitly has a strong preference for EUR/HUF to stay above the break-even cost of reserves (around 301-302 vs the EUR). Previous MPC also frequently acted to smooth excessive exchange rate volatility. The conversion of FX mortgages into forint in 2015 has significantly improved the transmission mechanism of monetary policy as the balance sheet effects fall substantially. This gives the MNB more maneuvering room with its policy.

The MNB seldom intervenes in the FX market directly, but it does engage in verbal intervention and in the past has used interest rates aggressively to stabilize the currency. The current MPC relies on unconventional measures, including the FX swaps providing HUF liquidity.

Credit regulation functions
According to the Act CXXXIX of 2013, effective 1 October 2015, the Hungarian Financial Supervisory Authority and the Magyar Nemzeti Bank are one institution. The MNB is required to support the efficient development and conduct policies related to the prudential supervision of credit institutions and the stability of the financial intermediary system.

Current policy stance
The Magyar Nemzeti Bank is nearing the inflection point for its dovish policy amid global tightening trend and EMFX weakness. The MPC recently announced that it is in preparation mode, but still emphasizing that policy normalisation is not yet needed. The central bank has held the policy rate at 0.9% since mid-2016, and with a persistent easing bias and in favor of unconventional policy tools, including a focus on interbank rates and implied yields. It also heavily utilizes FX swaps providing HUF to pump liquidity into the local banking system. In 2018, the MNB also holds monetary IRS auctions at discount to market pricing, with the initial aim to reduce long-end spread vs Europe. The programme will expire at the end of the year. These policies are mostly targeted at weakening appreciation forces on the HUF. Various factors have up to now kept core, and thus headline inflation, in a moderate path, allowing the MNB to maintain its dovish agenda.

However, the tide is changing as the HUF has weakened markedly since the 2Q EM sell-off, while inflation upside risks continue to build amid double-digit domestic wage growth. The turning point depends on EUR/HUF, and the first wave of tightening will be via Bubor before policy rate hikes, which will likely materialise only 3Q/4Q 2019.

Meetings, data and information dissemination
The Monetary Policy Council meets once a month to decide on the interest rate. The MPC releases a detailed statement an hour after announcement. Minutes of the rate-setting meetings are released mid-month and disclose the members' voting decisions. Inflation reports are available quarterly. In the past, the MPC has announced intra-meeting decisions at times of exceptional financial market instability or to announce new special measures. The Magyar Nemzeti Bank compiles and releases extensive data on external debt, monetary and interest rate statistics, financial accounts and retail lending/deposit rates.

Economic structure and outlook

The economy has been recovering strongly after years of deleveraging and structural reforms, further boosted by fiscal and monetary stimuli, as well as the strong efforts to absorb EU funds since 2017. We see GDP growth running at 3.5-4% in the coming years. Households are enjoying several tailwinds amid buoyant employment, strong wage growth in double digits, and a low interest rate environment. Investment has recently taken over consumption as a more important driver of growth. This reflects the Fidesz government's commitment to, and success in mobilizing, EU funds in the economy. The approved EU project pipeline is worth more than 90% of total allocation until 2020, well above regional peers.

Inflation pressures continue to build, though we do not see major risks of overshooting the 3% CPI target. Currently inflation is peaking close to 3.5% yoy, but mostly due to fuel and base effects. We expect moderation from late 2018, with CPI likely easing towards the 3% target by end-2019. There is high uncertainty regarding the exchange rates and pass-through impact. If HUF weakens further and stays above 330 vs the EUR, the MNB will likely face challenges to maintain its accommodative stance. The output gap is closed, and GDP growth is well above potential of 2-3%. Labor market tightness is at an historical high, implying that upward pressures on wages are here to stay.

Robust economic growth, strong external and fiscal positions, and rate hike prospects in the medium term (or at least no downside at this stage) are in favor of a stronger HUF, in our view.

Bond market

The Hungarian local debt market is relatively small at about US$60bn. Securities are traded over the counter and on the stock exchange.

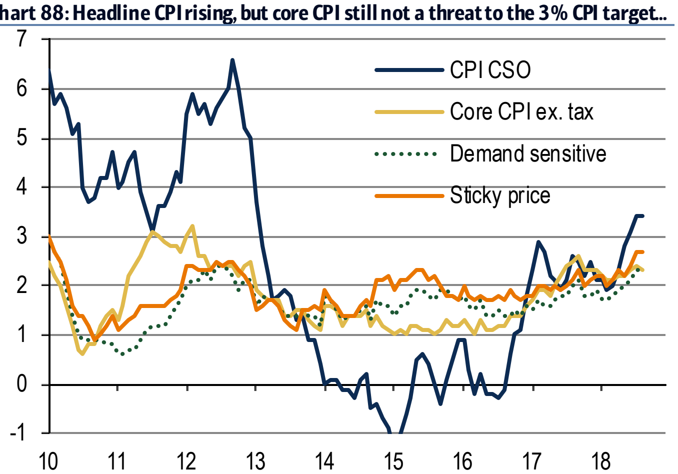
Short-term or floating rate debt. Around 28% of debt is in T-bills, while FRNs take up a modest 7% share in outstanding debt.

Fixed coupon debt. The remaining 65% is mostly in fixed rate bonds. The curve extends out to 14 years, but the supply in the long end is limited. The average duration of Hungary domestic debt is currently 5.9 years.

Auction and placement mechanism. The Government Debt Management Agency (AKK) carries out government bond issuance. The AKK's main objective is to finance the central government at the lowest costs in the long run, taking risks into account.

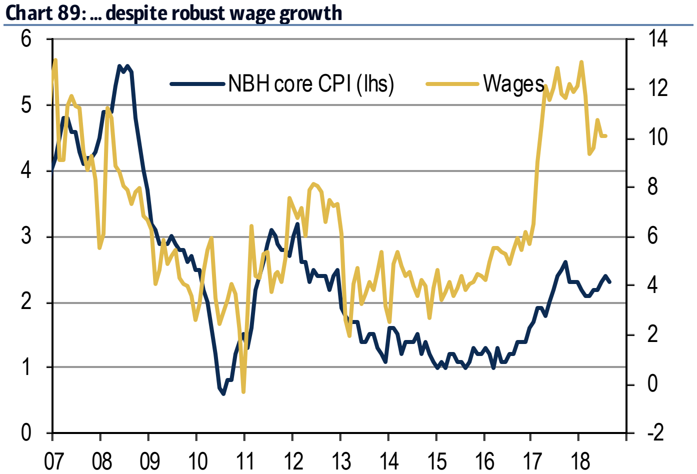
The focus of the AKK remains on domestic financing, as the government targets a declining share of foreign debt, together with overall debt reduction. The share of the foreign currency denominated debt within the total central government debt should remain at 15-25%. The decreasing share of foreign currency debt is achieved by covering the net financing need and a part of the maturing FX debt with financing in

Chart 88: Headline CPI rising, but core CPI still not a threat to the 3% CPI target...



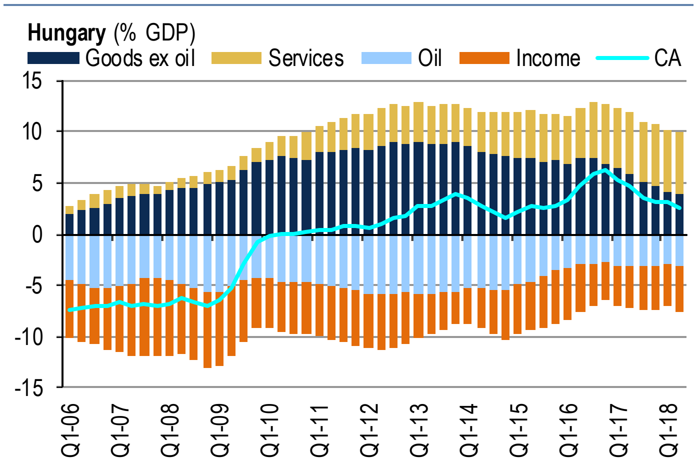
Source: Haver, BofA Merrill Lynch Global Research

Chart 89: ... despite robust wage growth



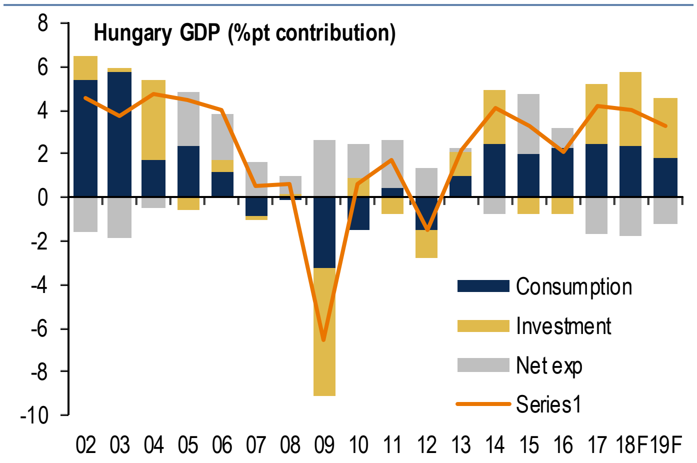
Source BofAML estimates for 2017-18. Source: NBH, BofA Merrill Lynch Global Research

Chart 86: Current account has been deteriorating on strong domestic absorption, but cushion from service sector



Source: Haver, BofA Merrill Lynch Global Research

Chart 87: EU funds support investment, while consumption stays solid on favorable labor market conditions



Source: Haver, BofA Merrill Lynch Global Research domestic currency. The AKK targets a 55-65% share of fixed-coupon debt, and a 34-44% share of floating rate debt (including short-term debt). The AKK also targets the Macaulay duration of the HUF debt portfolio to be in the 2.5-3.5 years range. The AKK handles all auctions. An annual and monthly calendar is published on the AKK website with detailed information provided four days before the auction. Auctions are conducted using a competitive discriminatory price system. Primary dealers are obliged to quote two-way prices, especially for benchmark securities. Non-competitive bids are also accepted. T-bills are auctioned weekly, with 3m bills every Tuesday and 12m bills on Thursdays of odd-numbered weeks. Bond auctions occur on Thursdays. Typically the AKK alternates fixed coupon bond auctions with switch auctions, which are held on Wednesdays. The week when switch auctions are offered, floaters are on offer too. While the AKK typically conducts simultaneous sales of the three-, five- and 10-year bonds, at times it offers the 15-year bond in place of the 10-year, depending on market conditions. Only primary dealers can participate in auctions. Offers are submitted by 11am with results published by 1pm on the AKK website and HUISSUE page on Reuters.

Local/external debt ratings

	Local	External
2018	Baa3/BBB-/BBB-	Baa3/BBB-/BBB-
2017	Baa3/BBB-/BBB-	Baa3/BBB-/BBB-
2016	Ba1/BB+/BBB-	Ba1/BB+/BBB-
2015	Ba1/BB+/BBB-	Ba1/BB+/BB+
2014	Ba1/BB/BBB-	Ba1/BB/BB-
2013	Ba1/BB/BBB-	Ba1/BB/BB-
2012	Ba1/BB+/BBB-	Ba1/BB/BB+
2011	Ba1/BB+/BBB	Ba1/BB+/BBB-
2010	Baa3/BBB-/BBB	Baa/BBB-/BBB-
2009	Baa1/BBB-/BBB+	Baa/BBB-/BBB
2008	A3/BBB/BBB+	A3/BBB/BBB
2007	A2/BBB+/A-	A2/BBB+/BBB+
2006	A2/BBB+/A-	A2/BBB+/BBB+
2005	A1/A-/A-	A1/A-/BBB+
2004	A1/A-/A+	A1/A-/A-
2003	A1/A-/A+	A1/A-/
2002	A1/A-/A+	A1/A-/
2001	A1/A-/A+	A3/A-/
2000	A1/A-/A+	A3/A-/

Source: BofAML Global Research, Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: yield to maturity
Settlement: T+2
Basis: Act/Act
Coupon frequency: annual

IRS

Fixing: 6M BUBOR 11am CET
Coupon frequency: annual fixed Act/365, semi-annual floating Act/360

Bloomberg pages

HUF Curncy ALLQ<GO> FX rates
OTC HUF<GO> - Market monitor
GDMA <GO>- Bond auctions
NBH<GO> - Central Bank

Reuters pages

FX page <ECB37>
Bonds page 0#HUTSY=

Useful websites

National Bank of Hungary
www.mnb.hu

Hungarian Government
www.ngm.gov.hu

Central Statistics Office
www.ksh.hu

Debt Management Agency
www.akk.hu

Budapest stock exchange
www.bse.hu

Central Clearing House and Depository
www.keler.hu

*Links are to third-party websites, and do not contain BofAML Global Research.

Derivatives market

The IRS and FRA market is quite active and fixes versus BUBOR. The cross-currency basis swap market (vs Euribor) is also quite active with local banks being the key players as a result of the large FX mortgage market. The ASW market used to be active and liquid before 2008 but it is now much less so.

Interest rate swaps. Very actively traded interest rate swaps exist for tenors up to 10 years. Liquidity is less abundant beyond 10 years. IRS fix against 6m BUBOR. Forward swaps are liquid too, with 1y1y tenor being one of the most frequently traded. There are no restrictions on foreign investors to the IRS market.

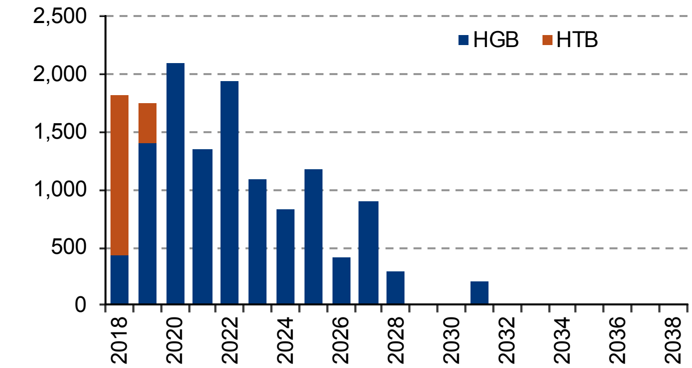
Basis swaps. These swaps represent cash flow exchanges between 3m floating EURIBOR against 3m floating BUBOR. They are liquid out to two years in normal conditions.

Table 102: Summary statistics of Hungary derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-Ask spread	Bloomberg/Reuters Reference
Interest rate swaps				
2-year	50K DV01	10K DV01	3-4bp	HFSW1/HUFVIEW
5-year	75K DV01	10K DV01	3-4bp	HFSW5/HUFVIEW
10-year	50K DV01	10K DV01	4-5bp	HFSW10/HUFVIEW
Basis swaps				
	EUR 25 mn	EUR 10 mn	2bp	HFBS/ICAPHUF

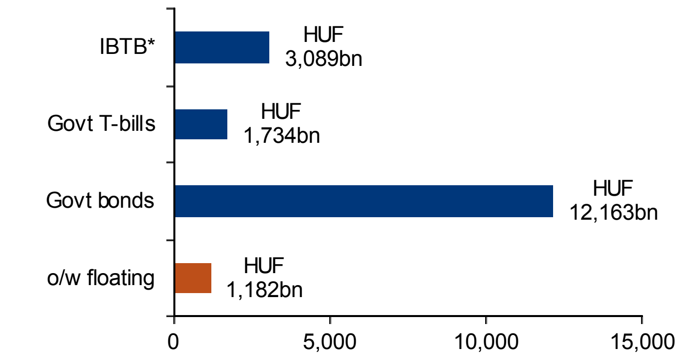
Source: BofA Merrill Lynch Global Research, Bloomberg, Reuters

Chart 90: Maturity profile of outstanding Hungary government securities (HUF bn)



Source: Bloomberg, BofA Merrill Lynch Global Research

Chart 91: Outstanding HUF debt types by category



*Interest Bearing Bill. Source: Bloomberg, BofA Merrill Lynch Global Research

Cross currency swaps. Available but rarely tapped.

FX market

The Hungarian forint (HUF) is fully convertible and deliverable; it has been floating freely since February 2008 when the authorities abandoned the flexible peg of the forint to the euro, which has been in place since May 2001. The government chooses the FX regime in agreement with the MNB. The central bank dislike trend changes in the currencies. A strong currency dampens exports and imposes a loss on the central bank balance sheet, given the Euro accumulation of the past few years. The NBH has intervened verbally whenever EUR/HUF has moved through 305. Historically, the NBH has also turned hawkish in times of weaker currency. Most recently, such interventions haven't been needed but recent emerging market volatility and subsequent HUF stress may trigger some reaction in the fall.

The forint is relatively liquid with average daily volumes of €1.5bn, average ticket size of €10mn and bid-offer around HUF 0.2. EUR/HUF largely dominates trading volumes. Forwards and swaps are liquid up to 1y.

Investor base

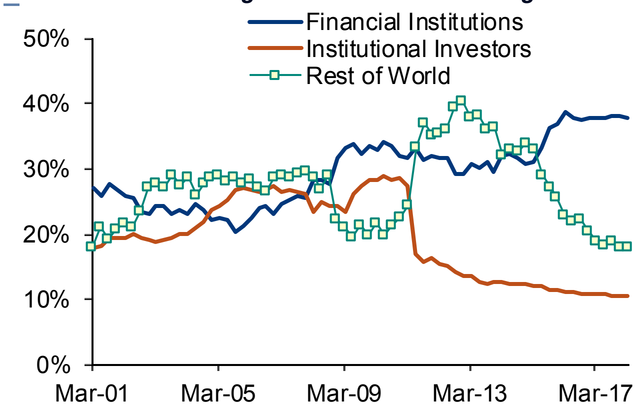
Hungary has a relatively diversified investor base. Foreign investors in the past typically held the largest share of government securities, but this trend was disrupted by the crisis in 2008. Foreign interest in local debt fell after the global financial crisis, but then rose again between 2011 and 2012 amid the Fed's quantitative easing programs. Non-resident holdings fell to around 20% of outstanding debt in 2010 and subsequently recovered to exceed long-term levels at 38% in 1Q13. Since the Fidesz government focuses on reducing external vulnerability, foreign holding of HUF-denominated treasury securities fell again in recent years, to about 18% as of May 2018. Demand has been offset by domestic banks (38%) and households (22%). Government legislation virtually shut down the private pension fund industry in 2011. Investment and pension funds and insurance companies hold around 10% HUF government bonds vs. around 35% in 2011.

Table 103: Vital statistics and characteristics of Hungary's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
HUF Onshore						
Spot	HUF Spot	EUR1.5bn	EUR10m	HUF 0.2	EURHUF=	▪ EUR/HUF dominates trading volumes.
Forwards	Forwards & Swaps	EUR2bn	EUR10-50mn	HUF 0.07	EURHUFFWD=	▪ Forwards liquid up to 1 year, swaps liquid out to 10 years. ▪ 2y most liquid, others often trade as spread to 2y.
Options	FX Options	EUR300mn	EUR50mn	0.45 vol	EURHUFVOL	▪ Liquid up to 1 year.

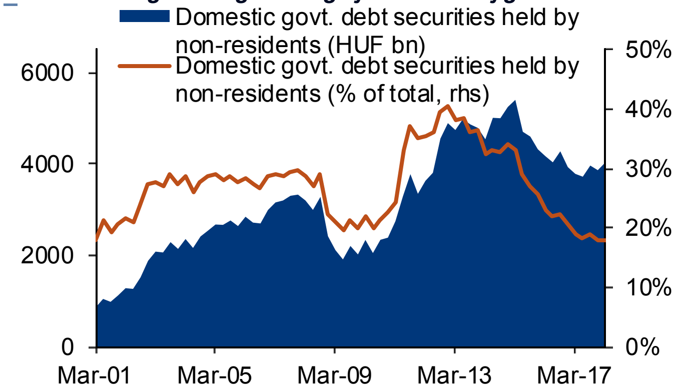
Source: BofA Merrill Lynch Global Research, Reuters

Chart 92: Distribution of government securities holdings



Source: BofA Merrill Lynch Global Research, Haver

Chart 93: Foreign holdings of Hungary local currency govt bonds



Source: BofA Merrill Lynch Global Research, Haver

Rules, regulations, capital controls and taxation

The authorities have lifted all restrictions on FX transactions since 2001. There are also no restrictions on ownership of fixed income securities. There is no withholding tax on interest for non-private investors (entities), but 15% is applied to individual entities (down from 16% as of 2016). The latter can be reduced through double tax treaties.

Clearing and settlement

Settlements for all government paper occur via KELER (the central depository and clearing house). Clients with an account can also settle their transactions via Euroclear and Clearstream.

Table 104: Summary of Hungary bond markets and products

Instrument	Treasury Bills	Government Bonds
Issuer	Government Debt Management Agency (AKK)	Government Debt Management Agency (AKK)
Currency	HUF	HUF
Principal	HUF 10,000	HUF 10,000
Tenor	91, 182, and 364-days	3, 5, 10, and 15 years
Interest rate/coupon	Issued at discount	Fixed
Coupon Payments	Zero	Annual
Day Count Calculation	Act/360	Act/Act
Amortization Schedule	Discount	Bullet
Form	Registered	Registered
Amount outstanding (as of Jun 2018)	HUF 4,823bn	HUF 12,163bn
Secondary Market		
Trading	OTC and Budapest Stock Exchange	OTC and Budapest Stock Exchange
Quotation Convention	Yield	Yield
Settlement Period	T+2	T+2
Average Daily Turnover	HUF 15-25bn	HUF 25-50bn
Bid/offer spread (0-5Y)	9-12bp	5-10bp
Bid/offer spread (5Y+)	NA	6-12bp
Average trade size	HUF 500mn	HUF 500mn
Clearing Mechanism	KELER (central depository and clearing house), Euroclear	KELER (central depository and clearing house), Euroclear, Clearstream
Major players	Primary dealers and brokers	Primary dealers and brokers
Trading hours	8:45–17:00 (Hungary)	8:45 - 17:00 (Hungary)
Bidders	All entities or individuals, including non-residents, may participate.	All entities or individuals, including non-residents, may participate.
Regulations		
Restrictions on Foreign Investment	Treasury Saving Bills and Treasury Saving Bills Plus can be bought only by resident individuals	No restrictions
Custodian	Yes	Yes
Withholding Tax	None for non-individual entities, 15% for individual entities	None for non-individual entities, 15% for individual entities
Capital gains Tax	None for non-individual entities, 15% for individual entities	None for non-individual entities, 15% for individual entities
Entry/Exit Tax	None	None
Primary Auctions		
Auction Style	Competitive discriminatory price	Competitive discriminatory price
Average Issue Size	HUF 50bn	HUF 20bn (bi-weekly for 3, 5 and 10 years)
Minimum Amount of Tender	None	None

Source: BofA Merrill Lynch Global Research, Bloomberg, various local authorities

Israel

Gabriele Foa >>
MLI (UK)

Mai Doan
MLI (UK)

Overview

Israel is a developed market due to its strong fundamentals, high per capita income, skilled human capital, and technology-intensive and innovative industry. At the same time, it enjoys emerging market growth, which has averaged more than 3% over the past 10 years. The flexibility in the economy together with a proactive central bank allowed the country to escape the global recession in 2009. Still, Israel suffers from some developing country problems, while geopolitical risks represent a large fiscal burden on the relatively restricted public finances.

Bank of Israel

Objectives

The Bank of Israel's (BoI) main objective is to maintain price stability as specified by the Bank of Israel Law (2010). Additional functions are to help the government reach its other economic policy goals, especially growth, employment and the narrowing of social gaps, as well as the stability of the financial system – all these provided that price stability is not undermined in the long run. The BoI's functions include managing monetary policy; holding and managing the foreign currency reserves; supporting the orderly activity of the foreign currency market; and supervising and regulating the banking system.

Israel's government, in consultation with the central bank governor, sets a price stability target – an annual rate of increase in the Consumer Price Index (CPI). The BoI formally targets headline inflation, with the current target between 1% and 3%, and the bank is obliged to strive to achieve that goal, according to the Bank of Israel Law.

Legal framework

A new Bank of Israel Law became effective on 1 June 2010. The new law led to the creation of the Monetary Policy Committee (MPC), which decides on monetary policy and actions required to achieve the Bank of Israel's goals, rather than the governor having sole management responsibility, as in the 1954 legislation. A Supervisory Council was also established to supervise the orderly and efficient management of the bank.

Decisions

The Bank of Israel Law prescribes the establishment of two bodies in the Bank of Israel. The Monetary Policy Committee and the Supervisory Council are authorized to make decisions on monetary policy and bank management, and obliged to report their decisions to the Knesset, the government, and the public. The MPC makes decisions on the interest rate level and monetary policy. The Supervisory Council approves administrative decisions on salaries for instance. The MPC and the council include members from outside the bank, with the appropriate professional qualifications.

Table 105: Key facts

Name	Bank of Israel
Founded	24 August 1954
Governor	Professor Karnit Flug
Board members	4 currently (6 required by law)
Autonomous	Yes
Government representative on board	No
Terms	Governor has 5-year term
Inflation target	1-3%
Latest move	Hold (29 August 2018)

Source: Bank of Israel

Table 106: Key links*

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
Statistics
Reports
Presentations and speeches
Legal framework
English version
Ministry of Finance
National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

The MPC's resolutions are passed by a majority of its members participating in the voting; in the event of a tie, the chairperson has the deciding vote. The lawful quorum at committee meetings and for resolutions is a majority of its members, including the governor or, in the governor's absence and with his or her consent, the deputy governor.

The current board

The Monetary Committee has six members. Three are from the bank: the governor, who serves as chairperson of the committee; the deputy governor; and an additional bank employee who is appointed by the governor. The other three committee members are public representatives.

The Bank of Israel Law places special emphasis on the bank's independence. The bank's governor is appointed by the President of Israel for a five-year term, at the recommendation of the government. The governor is responsible for managing the bank, chairs the Monetary Committee and serves as a member of the Supervisory Council.

Dr Karnit Flug was appointed governor on 13 November 2013. Flug served as deputy governor after being appointed by the government in July 2011. Flug served as acting governor from July until November 2013.

Table 107: Board members

Name	Date originally appointed	Current term ends	Term limit ends	Background	Perceived policy stance
Karnit Flug, Governor	Nov 2013	Nov 2018	Nov 2023	PhD in economics from Colombia University. Director of the BoI Research Department and a member of the BoI's senior management. Former International Monetary Fund economist.	Flug has continued Stanley Fischer's policies and tends to be dovish in her positions. However, there has been strong resistance from the MPC against unconventional measures, despite accumulation of easing pressures in the economy.
Nadine Baudot-Trajtenberg Deputy Governor	March 2014	March 2019	March 2024	Dr Nadine Baudot-Trajtenberg has been deputy dean at the IDC Herzliya's School of Economics since 2010. Baudot-Trajtenberg served as head of the Securities Research Division and head of Advisory and Trading Services for Institutional Investors at Bank Hapoalim B.M. Baudot-Trajtenberg served as head of Investor Relations at Bank Hapoalim B.M. from 2003 to 2009. Her areas of academic interest are public finance and macroeconomics. Baudot-Trajtenberg has a BSc in economics from Universite de Montreal and master's degrees in philosophy, politics, and economics at the University of Oxford. She has a PhD in economics from Harvard University, where her advisor was Dr. Lawrence Summers.	Flug appointed Baudot-Trajtenberg and we expect her views to be aligned with those of the governor.
Andrew Abir	Oct 2017	Oct 2022	Nov 2027	Mr. Andrew Abir continues to serve as director of the market operations department at the Bank of Israel. Abir has a BA degree in economics and politics from Oxford University, and an MBA from Hebrew University. Abir began his career as an economist at the Bank of Israel in 1987. In 2011, he was appointed director of the market operations department.	Flug appointed Abir following Sussman's resignation. His views are likely to be aligned with those of the governor.
Reuben Gronau	Oct 2011	Oct 2019	Oct 2019	Gronau is an external member of the Monetary Policy Committee and a professor/researcher at the Hebrew University of Jerusalem. Previously, he was president of the Israeli Economic Association, professor at various top universities, and chair and member of many government committees on pricing and competition in public services. He has a PhD in economics from Columbia University.	Gronau may be marginally more hawkish, but he is the only remaining external member in the MPC, so his influence is unlikely to be significant.
Moshe Hazan	Oct 2017	Oct 2022	Nov 2027	An associate professor at Tel Aviv University's Eitan Berglas School of Economics, and research fellow at the Centre for Economic Policy Research in London. Prof. Hazan also serves as Chairman of the Pinhas Sapir Economic Policy Forum. His studies focus on the interaction between demographic developments and gender differences and economic growth and inequality.	Unknown
Zvi Hercowitz	Oct 2017	Oct 2022	Nov 2027	A professor at the Tiomkin School of Economics at the Herzliya Interdisciplinary Center, and Professor Emeritus at the Eitan Berglas School of Economics, Tel Aviv University. Prof. Hercowitz has served as a consultant to the Bank of Israel Research Department, was a guest researcher at the Federal Reserve Bank in the United States, and has published many articles in the fields of macroeconomics, monetary policy, and the financial system.	Unknown

Source: Bank of Israel

Monetary policy regime and instruments

Bank of Israel adopted an inflation targeting framework in 1998. The government, in consultation with the governor, determines the price stability range, which is currently 1-3%. To achieve its objectives the BoI has a number of policy instruments; the main one is the short-term interest rate – the base rate, which is set by the Monetary Policy Committee. That interest rate is the basis of the interest the bank charges banks on the liquidity it makes available to them, and of the interest it pays on their deposits with the bank.

The BoI sets the rate of interest at a level that will keep inflation within the target range, or that will return inflation to within the range in a period not longer than two years. The bank is independent in setting the short-term interest rate and in using the monetary instruments to achieve its goals.

Exchange rate regime and instruments

ILS is fully convertible and has floated freely since June 2005 when the Bank of Israel formally ended the previous FX regime, a trade-weighted basket with wide fluctuation bands. The shekel has a powerful impact on growth and inflation with Israel being a small, open economy. However, pass-through to inflation is now much less than before 2007, when decades of hyperinflation (which ended in 1985) led to widespread indexation to the USD exchange rate in many sectors of the economy.

In 2008-09, the BoI carried out an FX reserve accumulation program that involved pre-announced daily purchases of foreign currency, alongside QE and aggressive rate cuts in the early days of the global financial crisis. The BoI continues to operate in the foreign exchange market in situations of exchange rate fluctuations that are not in line with fundamental economic conditions or when the foreign exchange market is disorderly.

Since 2013, the BoI has purchased foreign exchange in line with the bank's assessment of the effect of natural gas production on the balance of payments. Natural gas production in Israel is causing the current account to improve, which is leading to appreciation pressures on the shekel. This phenomenon is liable to negatively impact Israel's economy. The Monetary Policy Committee thus follows a foreign exchange purchase plan that should offset the effect of natural gas production on the exchange rate. The BoI purchased US$1.8bn in 2017 within the framework of this plan, following US$1.8bn in 2016 and US$3.1bn in 2015. This program will be reviewed when a wealth fund begins operation.

Credit regulation functions

The Bank of Israel Law empowers the central bank to supervise and regulate the banking system, and to regulate the economy's payment and clearing systems so as to ensure their efficiency and stability. The functions of the Banking Supervision Department within the BoI include supervising banking corporation stability, and avoiding excess risks to that stability and protecting depositors' money; ensuring that the banking corporations are managed properly; and maintaining fairness in bank/customer relations.

Current policy stance

The Bank of Israel is likely mulling over policy normalisation as inflation has returned to the lower bound of the target range, and as the term of the dovish Governor Karnit Flug expires in November. Rate hikes will likely come in 2019, timing largely depends on the ideology of the next Governor: will he/she share the same concern about ILS strength as Flug? If yes then the BoI should not hike rates soon. Higher oil and a weaker ILS should help the inflation outlook, but at the same time we do not see major overshooting risks, with 12m CPI inflation likely around 1 %. A benign inflation outlook, together with increasing risks of a global trade war, suggests that the BoI will be patient and not be rushed into too early or too aggressive tightening. In any case, we see the first rate hikes in 2Q 2019 and YE2019 policy rate at 0.50%.

Meetings, data and information dissemination

By law, the Monetary Policy Committee is required to meet at least eight times a year; a special meeting of the MPC can be called at the request of at least two members, provided the number of special meetings does not exceed 12 annually. Currently, the MPC meets eight times a year on monetary policy. However, the MPC maintains the authorization to change the interest rate in the intermeeting periods, should the MPC deem it necessary. Its major communication instruments include press releases after the rate-setting meetings, live broadcast of the Governor's press conference (in Hebrew), minutes of the rate-setting meetings published about two weeks after the announcement, and reports on price stability and economic developments.

Economic structure and outlook

Israel is a competitive small open economy with developed-market characteristics but it maintains emerging-market trend growth, at around 3%. The composition of growth has changed in recent years, with more reliance on domestic demand and the service sector. The slowdown in exports is likely to be structural, not cyclical or temporary, as Israel is experiencing the negative impact of Dutch disease. The causes of Dutch disease are widespread; hence the impact will likely be strong and persistent: a major discovery of natural gas since 2009 and production from 2013, persistent FDI inflows, and a surge in service exports in relation to the high-tech boom.

The OECD estimates that Israel has lost out vs competitors by around 10-15% in terms of relative unit labor costs and prices of exports between 2014 and 2017. Israel continues to lose market share in world goods exports, and its core goods trade balance (excluding ships, aircraft, diamonds and fuels) has headed quickly into deep deficit. The manufacturing output share in gross value-added continues to shrink, unlike stable trends in its competitors/similar small open economies. We note that medium- to low-tech sectors of the economy have been bearing most of the brunt amid the persistent ILS appreciation trend since 2013.

Bond market

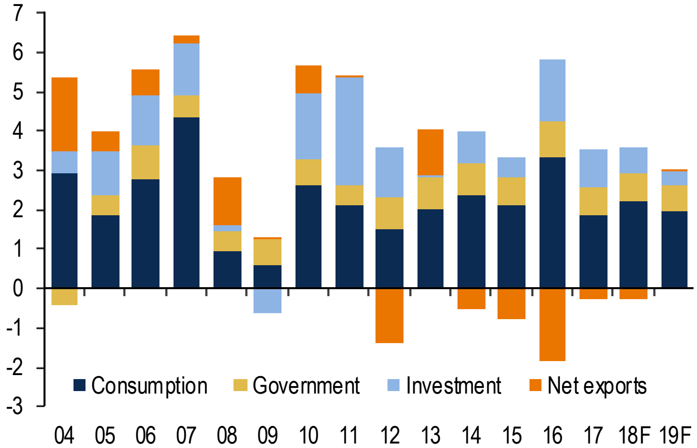
The Israeli bond market is one of the largest debt markets in EEMEA, with total outstanding tradeable debt at around US$140bn. Tradeable debt represents roughly two thirds of Israel's local debt. The remaining third is issued in a particular non-tradeable format, aimed at local pension funds and insurance companies.

Short-term or floating rate debt. T-bills are called makams and issued by the BoI. CPI-linked bonds called ILCPI have been issued since 2005. CPI-linked debt has the largest share in total debt in the region, with around 30% of tradable debt in this category. Floaters are also issued on a regular basis.

Fixed coupon debt. The remaining tradable debt has a fixed coupon. Fixed coupon bonds, the ILGOVs, are the most liquid instruments, with activity concentrated on the 5y and 10y tenors. Average daily trading volume of bonds is US$0.5-0.8bn, with typical trading sizes of US$7-17mn.

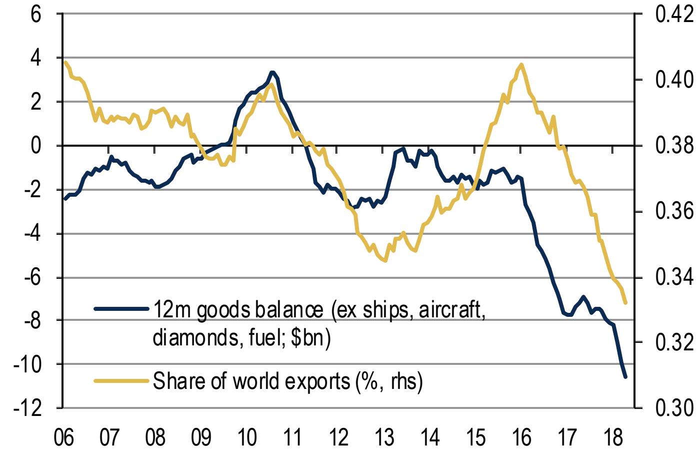
The share of CPI debt has been reduced gradually by the Ministry of Finance in recent years. The proportion of non-tradable debt has been more stable, close to 30% of the total. The curve extends out to 30 years, but liquidity is scarce beyond 10 years.

Chart 94: GDP growth driven mainly by consumption



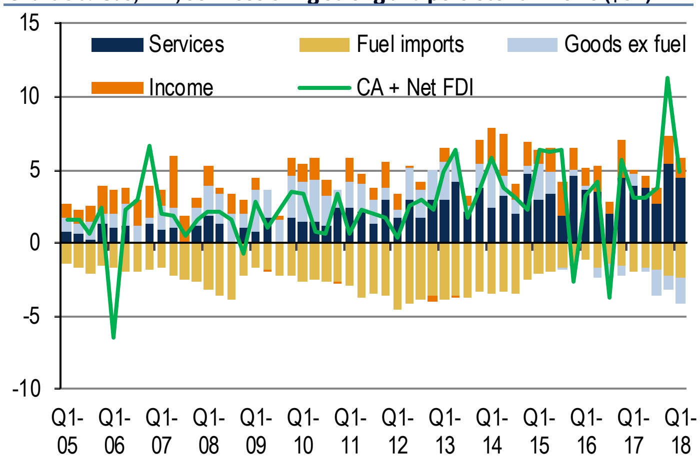
Source: Haver, BofA Merrill Lynch Global Research

Chart 95: Goods exports suffer from ILS strength



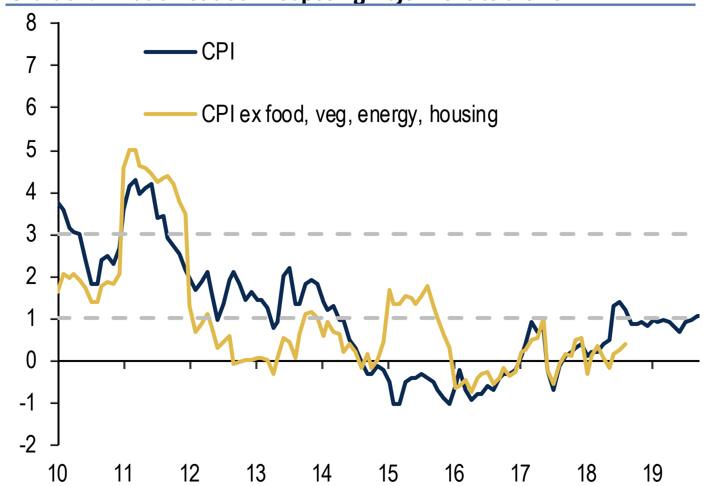
Source: Haver, BofA Merrill Lynch Global Research

Chart 96: Gas, FDI, services bring strong and persistent inflows ($bn)



Source: Haver, BofA Merrill Lynch Global Research

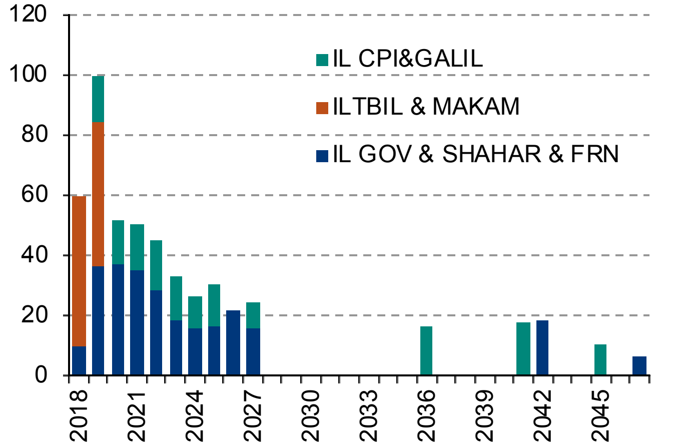
Chart 97: Inflation outlook not posing major risks to the BoI



Source: BoI, Haver, BofA Merrill Lynch Global Research

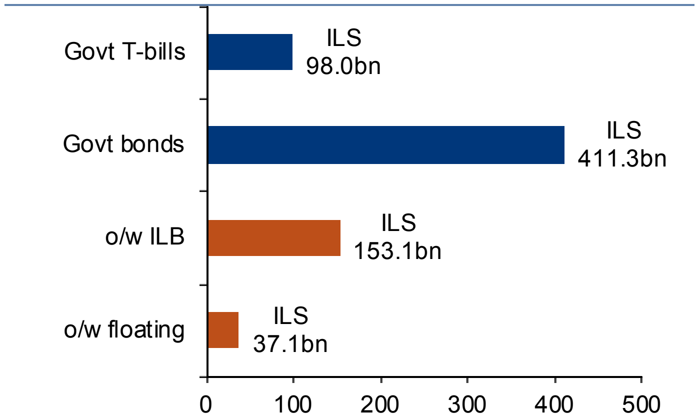
Auction and placement mechanism. Average maturity of outstanding debt has increased steadily in recent years and is currently close to six years. About half of domestic debt is in medium- to long-term debt, with 49% having a maturity equal or greater than four years. About 19% of domestic debt is held in makams, which by definition have maturity up to 12 months. The Ministry of Finance typically issues new bonds at three-, five-, and 10-year maturity, which are referred to as the benchmarks, and at 30y maturity on an occasional basis. The Ministry of Finance's government debt management unit conducts bond issuance. Bonds are issued to primary dealers, Tel Aviv Stock Exchange (TASE) members and other authorized participants. Auctions are conducted by the Bloomberg auction system and biddings are competitive multi-price and non-competitive. Annual issuance plans, monthly calendars and more detailed notifications three days ahead of auctions are provided.

Chart 98: Maturity profile of outstanding Israel government securities (ILS bn)



Source: Bloomberg, BofA Merrill Lynch Global Research

Chart 99: Outstanding ILS debt types by category (latest)



Source: Bloomberg, BofA Merrill Lynch Global Research

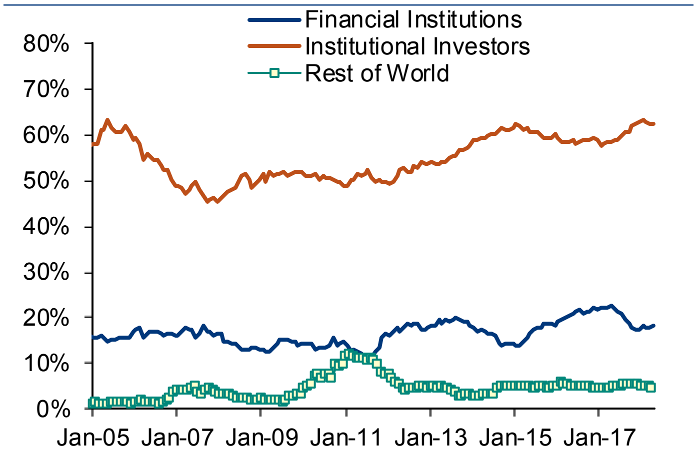
Derivatives market

IRS are liquid, though not as much as government bonds. FRAs and IRS trade out to 20y, but most trading is out to 10y. There is also a market for inflation swaps (real and breakeven). Typical transaction size for IRS is US$5-10k DV01 with 2-3bp bid-offer spreads. In options, there is an active interest rates vol market that goes up to 3y, while the FX vol market is available with vanilla and exotics against both EUR and USD.

FX market

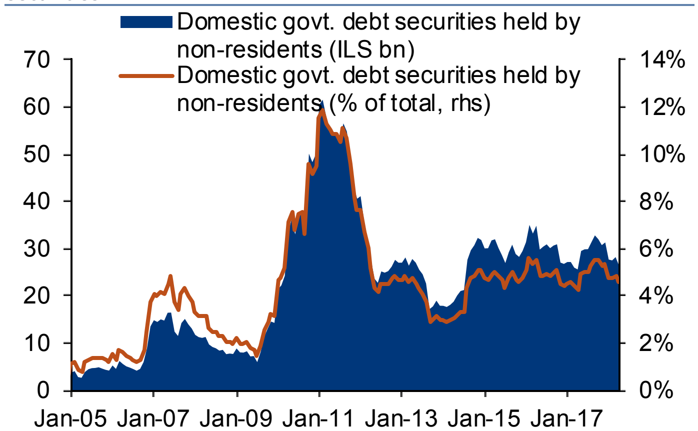
The Israeli shekel is fully convertible and has floated freely since June 2005 when the BoI formally ended the previous FX regime (a trade-weighted basket with wide fluctuation bands). The BoI intervenes on an ad-hoc basis in an attempt to slow ILS appreciation, and when it judges conditions in the FX market are disorderly or do not reflect underlying economic conditions.

Chart 100: Distribution of government securities holdings



Source: Haver, BofA Merrill Lynch Global Research

Chart 101: Foreign holdings of Israel local currency government debt securities



Source: Haver, BofA Merrill Lynch Global Research

ILS has an active market with average daily volumes for spot FX around US$2bn and typical ticket sizes of US$30mn. USD/ILS dominates trading volumes, though EUR/ILS trades a lot as well. The option market is liquid to 1y but quoted to 5y. The forward/swap market is liquid out to 1y.

Table 108: Summary statistics of Israel derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-Ask spread	Bloomberg/Reuters Reference
Interest rate swaps				
2-year	USD 50-100K DV01	USD 5-10K DV01	2-3bp	ISSW1/ILSVIEW
5-year	USD 50-100K DV01	USD 5-10K DV01	2-3bp	ISSW5/ILSVIEW
10-year	USD 50-70K DV02	USD 5-10K DV01	2-3bp	ISSW10/ILSVIEW
Basis swaps				
	USD 100mn	USD 25mn	10-20bp	ISBS/ICAPILS

Source: Bloomberg, Reuters

Table 109: Vital statistics and characteristics of Israel's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
ILS						
Spot	ILS Spot	USD 2bn	USD 20-25mn	ILS 0.003 – 0.005	ILS=	▪ Mainly trades against USD
Forwards	Forwards & Swaps	USD 2bn	USD 25-50mn	ILS 0.006-0.007	ILSFWD=	▪ Liquid up to 1 year.
Options	FX Options	USD 0.2bn	USD 20-50mn	0.45 vol	ILSVOL	▪ Options available till tenor of 5 years but are liquid up to 1.year

Source: BofA Merrill Lynch Global Research

Investor base

The investor base is almost entirely domestic (even for tradeable debt), with foreign ownership of debt very low. Only around 4.6% of domestic government debt is held by non-residents, while foreign holdings of T-bills have fallen to just 3% in April 2018 from the peak of more than 35% in 2011. The latter is due to the introduction of a 10% reserve requirement on foreign residents' transactions in makams and short-term government bonds in January 2011, and subsequently the cancellation of tax exemptions for nonresidents on capital gains and interest income from state loans of less than one year. The ownership of tradable government bonds, which constitute the bulk of local debt, is quite diversified. The public holds the largest share, currently at 18%, due to high household savings. Institutional investors take up the rest of the holdings, with pension funds, mutual funds and insurance companies accounting for, respectively, 14.8%, 11.8% and 13.9% of the debt. Pension/provident funds are the major holders of government debt domestically, even though regulations that required them to hold at least 30% of their AUM in non-tradable government bonds have been abolished.

Rules, regulations, capital control and taxation

Foreign investors are exempt from tax on government bonds issued after May 2000, as of January 2004. With new regulation from 2011, interest income and gains upon redemption of makams issued with a maturity date of no more than 13 months from the date of issuance are subject to a capital gains tax of 25 per cent. In January 2011, the BoI imposed a reporting obligation on Israeli residents and non-residents who transact in FX swaps and forwards for more than US$10mn in a day. Non-residents transacting in makams and short-dated bonds for more than ILS10mn in one day also have to report to the BoI. The reports have to specify transaction details and holdings of such assets.

Clearing and settlement

Bonds are cleared in the Tel Aviv clearing house with trading on the Tel Aviv stock exchange, as well as MTS and other authorized platforms. The market is open from Sunday to Thursday.

Table 110: Summary of Israel bond markets and products

Instrument	Treasury bills (makams)	Government bonds (ILGOV)	Inflation-linked bonds (ILCPI)
Issuer	Ministry of Finance	Ministry of Finance	Ministry of Finance
Currency	ILS	ILS	ILS
Principal	ILS100 (par)	ILS10,000 (par)	ILS10,000 (par)
Tenor	Up to 1 year	Up to 30 years	Up to 30 years
Interest rate/coupon	Issued at discount	Fixed / Floating	CPI Linked
Coupon Payments	Zero	Annual (quarterly for floating)	Annual
Day Count Calculation	Act/365	Act/365	Act/365
Amortization Schedule	Bullet	Bullet	Bullet
Form	Scripless	Scripless	Scripless
Amount outstanding (as of Jun 2018)	ILS98bn	ILS411.3bn	ILS153.1bn
Secondary Market			
Trading	OTC and Stock Exchange	OTC and Stock Exchange	OTC and Stock Exchange
Quotation Convention	Price	Price	Price
Settlement Period	T+1	T+1	T+1
Average Daily Turnover	USD70mn	USD500-800mn	USD150-350mn
Bid/offer spread (0-5Y)	2bp	1-2bp	2bp
Bid/offer spread (5Y+)	NA	2bp	3bp
Average trade size	USD30mn	USD7-17mn	USD7mn
Clearing Mechanism	Tel Aviv Clearing House (TACH)	Tel Aviv Clearing House (TACH)	Tel Aviv Clearing House (TACH)
Major players	Primary dealers	Primary dealers	Primary dealers
Trading hours	10:00 – 17:00 (Israel)	9:30 – 17:30 (Israel)	9:30 – 17:30 (Israel)
Bidders	All entities or individuals, including non-residents, may participate. Mostly local banks.	All entities or individuals, including non-residents, may participate. Mostly local banks, pension, provident, and insurance funds.	All entities or individuals, including non-residents, may participate. Mostly local banks, pension, provident, and insurance funds.
Regulations			
Restrictions on Foreign Investment	No restrictions	No restrictions	No restrictions
Custodian	Yes	Yes	Yes
Withholding Tax	None on interest from bonds issued after 08 May 2000 (23% WHT on interest for bonds issued earlier).	None on interest from bonds issued after 08 May 2000 (23% WHT on interest for bonds issued earlier).	None on interest from bonds issued after 08 May 2000 (23% WHT on interest for bonds issued earlier).
Capital gains Tax	Tax on gains upon redemption of Makams issued with a maturity date < 13 months from the date of issuance at 25%.	None	None
Entry/Exit Tax	None	None	None
Primary Auctions			
Auction Style	Competitive tender in a multiple price format via primary dealers	Competitive tender in a multiple price format via primary dealers	Competitive tender in a multiple price format via primary dealers
Average Issue Size	ILS2-8bn	ILS 200-250mn	ILS200mn
Minimum Amount of Tender	None	None	None

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	A1/A+/A+	A1/A+/A+
2017	A1/A+/A+	A1/A+/A+
2016	A1/A+/A+	A1/A+/A
2015	A1/A+/A+	A1/A+/A
2014	A1/A+/A+	A1/A+/A
2013	A1/A+/A+	A1/A+/A
2012	A1/AA-/A+	A1/A+/A
2011	A1/AA-/A+	A1/A+/A
2010	A1/AA-/A+	A1/A/A
2009	A1/AA-/A+	A1/A/A
2008	A1/AA-/A+	A1/A/A
2007	A2/AA-/A	A2/A/
2006	A2/A+/A	A2/A-/
2005	A2/A+/A	A2/A-/
2004	A2/A+/A	A2/A-/
2003	A2/A+/A	A2/A-/
2002	A2/A+/A	A2/A-/
2001	A2/AA-/A+	A2/A-/
2000	A2/AA-/A+	A2/A-/

Source: Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds
Quote: Yield to maturity
Settlement: T+1
Basis: Act/365
Coupon frequency: Annual

IRS
Fixing: 3m TELBOR 12 noon
Coupon frequency: Annual fixed Act/365, quarterly floating Act/365

Bloomberg pages
ILS Curncy ALLQ<GO> FX rates
OTC ILS<GO> - Market monitor
BOI<GO> - Central Bank and Bond auctions

Reuters pages
FX page <BOIT12>
Bonds page 0#ILSAHR=TA

Useful websites

Bank of Israel
www.bankisrael.gov.il

Ministry of Finance
www.mof.gov.il

Central Bureau of Statistics
www.cbs.gov.il

Tel Aviv Stock Exchange
www.tase.co.il

Israel Securities Authority
www.isa.gov.il

*Links are to third-party websites, and do not contain BofAML Global Research.

Nigeria

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MLI (UK)

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Overview

Nigeria is a mixed economy with agriculture, oil and trade being the key sectors, while telecommunications, construction and financial services have grown rapidly in recent years. The oil sector now contributes less than 10% to GDP (from 30% in the early 2000s) but continues to account for over 50% of fiscal revenues and 90% of exports. After growing by an average 7% over the past two decades, the economy went into recession in 2016 due to falling oil prices and militant attacks on oil infrastructure with subsequent fuel, power and FX shortages hitting the non-oil sector. A gradual recovery is underway with partial currency devaluation in 2016 and moves to market reflective rates in key FX windows in 2017 playing a positive role in improving domestic and foreign sentiment. Upcoming elections, militant attacks, religious and ethnic conflicts as well as falling oil prices are the main risks to the near-term outlook.

Objectives

The Central Bank of Nigeria (CBN) Act of 2007 charged the bank with overall control and administration of the federal government's monetary and financial sector policies. The CBN's mission is to provide a stable framework for Nigeria's economic development. Its main objectives are to ensure monetary and price stability, issue legal tender currency, maintain external reserves, promote a sound financial system, act as bank, and provide economic and financial advice to the federal government.

The CBN also plays a developmental role, especially in the financial, agricultural and industrial sectors. Development initiatives include policy formation, an agricultural credit guarantee scheme, and micro/small and medium enterprise finance programs. The CBN launched the National Financial Inclusion Strategy in 2012 to increase financial inclusion to 80% by 2020. The policy is currently under review with inclusion rates around 60%.

Legal framework

The Central Bank of Nigeria became fully operative in July 1959, following the Central Bank Act of 1958 and the Banking Decree of 1969, which constitute the legal framework within which the CBN operates and regulates banks. In 1997, the federal government enacted an amendment decree that removed the limited autonomy the bank enjoyed since 1991 and brought the CBN back under the Ministry of Finance's supervision. At this time, the CBN had very little discretionary power. The CBN Act of 2007, the current legal framework, repealed previous acts and amendments to restore the institution as a fully autonomous body. The remit of the bank was widened to include monetary and price stability, in addition to its existing role of monitoring the financial sector and promoting continuity in economic management.

Table 111: Key facts

Name	Central Bank of Nigeria
Founded	1959
Governor	Godwin Emefiele
MPC members	12
Autonomous	Yes
Government representative on board	Accountant General of The Federation; Permanent Secretary, Federal Ministry of Finance
Terms	5 years, maximum of 2 terms
Inflation target	6-9%
Latest move	On hold at 14% (July 2018)

Source: BofA Merrill Lynch Global Research, CBN

Table 112: Key links*

Main page
Board members
Monetary policy decisions
Statistics
Reports
Presentations and speeches
Legal framework
Ministry of Finance
National Department of Statistics
Debt Management Office

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research.

Decisions

The Monetary Policy Committee (MPC) is the bank's supreme decision-making body. The MPC consists of the CBN governor, who is the MPC chair, four deputy governors, two members of the board of directors and two members appointed by the governor. The MPC must meet at least four times a year with at least six members present. Monetary policies are decided by a majority vote. In the event of a tie, the chairperson has the casting vote.

The current board

The executive board consists of the central bank governor (chair) and four deputy governors, each in charge of a key department (Economic Policy, Financial Systems Stability, Operations and Corporate Services). In addition, there is a non-executive board that includes the accountant general of the Federation, the permanent secretary of the Federal Ministry of Finance and five external directors.

The governor, deputy governors and five directors are appointed by the president, subject to confirmation by the Senate. The governor and deputy governors are appointed for five-year terms and eligible for a maximum of two terms. Directors have four-year terms and are eligible for a maximum of two terms as well.

Monetary policy regime and instruments

Price stability remains the core aim of Central Bank of Nigeria policy. Policy is based on monetary targeting, with broad money used as the policy target and reserve money as the operating target. However, the CBN is gradually transitioning toward an inflation targeting regime. The CBN targets inflation between 6% and 9%.

Open market operations are the primary instrument of monetary policy, complemented by reserve requirements, discount window operations and foreign exchange market intervention. The monetary policy rate (MPR) is the key policy rate and the indicative rate for interbank transactions in the money market.

It is worth noting some technical difficulties with the monetary targeting regime. Monetary aggregates consistently increased faster than CBN targets between 2000 and 2009, yet inflation moderated more than expected. In a country where money demand can be relatively volatile, the transmission mechanism for monetary policy is unclear. In addition, unreliable fiscal revenue and expenditure due to oil price volatility increases liquidity's volatility.

Exchange rate regime and instruments

There is a high degree of pass-through from the exchange rate into inflation given Nigeria's import dependence. As a result, the Central Bank of Nigeria mandate of

Table 113: Central Bank of Nigeria Board members

Name	Date originally appointed	Current term ends	Background	Known policy stance
Godwin Emefiele, governor	Jun 2014	2019	Appointed governor in June 2014. Former CEO of Zenith Bank, with 26 years of experience in banking; previously a lecturer in finance and insurance.	Dovish
Aishah Ahmad, deputy governor	Mar 2018	2023	Former executive director of retail banking at Diamond Bank, with over 22 years' experience as a corporate executive and finance expert.	Current policy stance unknown
Okwu Nnanna, deputy governor	Feb 2015	2020	Former CBN director of research and special advisor to CBN governor in 1994-1999; alternate Executive Director at the International Monetary Fund.	Dovish
Edward Adamu deputy governor	Mar 2018	2023	Former director of human resources, strategy management at the Central Bank of Nigeria. Over 35 years in public and civil service.	Current policy stance unknown
Adebayo Adelabu, deputy governor	Feb 2014	2019	Former CFO of First Bank of Nigeria with 18 years of experience in banking and accounting.	Dovish
Festus Adenikinju	Mar 2018	2023	Professor of economics and consultant	Current policy stance unknown
Dahiru Balami	Mar 2018	2023	Lecturer and economics consultant.	Current policy stance unknown
Aliyu Sanusi	Mar 2018	2023	Economics professor	Current policy stance unknown
Asheikh Madigu	Mar 2018	2023	Director of Federal Inland Revenue Service	Current policy stance unknown

Source: BofA Merrill Lynch Global Research, CBN ensuring monetary and price stability implicitly includes exchange rate stability. It is for this reason that a Naira peg (at NGN/USD305) has been maintained for so long, despite the consequent dollar shortage, leading to a severe growth slowdown, portfolio outflows and index exclusion in 2015 and 2016. Dollar shortages in the formal interbank market as well as other administrative measures (such as import restrictions) pushed demand to the parallel market where FX traded at a substantial premium.

The Central Bank of Nigeria (CBN) announced in June 2016 that it was moving away from its multi-tiered FX policy to a single and flexible interbank exchange rate market. All dollar demand and supply would then go through the interbank market. The CBN would continue to intervene in the interbank market in order to prevent excessive volatility, but there would no longer be an administered rate or band within which the Naira must trade. The CBN stated that it will mainly intervene through 10 primary dealers appointed at commercial banks, but also use the forward and futures market. The BDC rate, however, weakened by over 70% after the announcement and the CBN returned to managing the currency shortly after.

Since then further moves have been made towards exchange rate unification but multiple currency practices are still in place The Nigerian Autonomous Foreign Exchange Rate Fixing (NAFEX) or the Investors and Exporters window was introduced on April 21 2017 to improve liquidity. Participants include authorised dealers, domestic and foreign portfolio investors, exporters and any other parties wanting to change FX. Permitted transactions include 'invisibles' such as loan repayments, dividends, capital repatriations and trade-related payment obligations. Derivatives are also traded in this window. On August 2 2017, the FMDQ issued a directive for domestic banks to submit real time indicative rates in the NAFEX window and USDNGN depreciated by 16% after the announcement, moving in line to the NAFEX window. Parallel markets have now converged with USDNGN trading in a tight range between 360/363.

Credit regulation functions

Banking supervision is under the remit of the Financial Systems Stability Department. Since 2009, the Central Bank of Nigeria has implemented various measures, such as the establishment of the Asset Management Corporation of Nigeria (AMCON) as a special purpose vehicle (SPV), which helped to clean up the toxic assets that resulted from the banking crisis.

AMCON is funded through a combination of loan recoveries, contributions from the CBN, sales of assets pledged and a sinking fund that currently constitutes a 0.5% levy of bank's total assets and 0.3% of off-balance sheet items annually. The Central Bank of Nigeria and the Nigeria Deposit Insurance Corporation are reported to have set up a committee to discuss plans related to the creation of a bad bank to house the bad loans in the sector ahead of the expiration of the terminal life of AMCON.

The CBN has also intensified monitoring of banking operations, establishing a Consumer and Financial Protection Division, and introducing International Financial Reporting Standards (IFRS). Phasing out of charges, such as the Commission on Turnover (COT) and mandated minimum payments on savings deposits (30% of MPR) have made the banks more consumer-friendly. Systemically important banks did have until July 2016 to implement recapitalization plans to satisfy a new regulatory minimum of a 16% capital

Table 114: Central Bank of Nigeria Monetary Policy Committee 2018 calendar

	Monetary policy meeting	Monetary policy minutes
Jan	23-24 Jan	24 Jan
Mar	20-21 Mar	21 Mar
May	22-23 May	23 May
Jul	24-25 Jul	25 Jul
Sep	25-26 Sep	26 Sep
Nov	20-21 Nov	21 Nov

Source: CBN

adequacy ratio (compared to 15% previously). However, given that the CBN wants to encourage lending to the slowing economy, implementation has been postponed.

Current policy stance

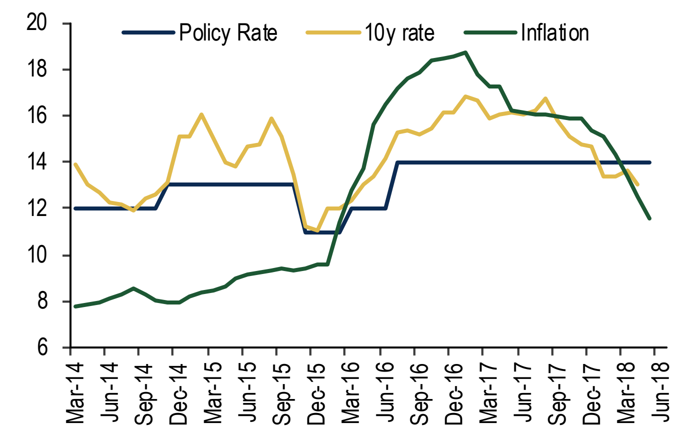
Currency depreciation and higher energy tariffs pushed inflation to a peak of 18.7% in January 2017. This was double the rate for 2015 and twice the Central Bank's upper limit target of 6-9%. The increase reflected currency devaluation (with a 55% depreciation in the interbank market, and 84% in the parallel market in 2016) as well as cost-reflective hikes in electricity and fuel tariffs (by 45 and 68% respectively).

Inflation has since fallen for the 17th consecutive month to 11.2% in June 2018 from 11.6% in May. This was driven by favourable base effects as well as lower core and food inflation. Despite the relief, we expect the Central Bank of Nigeria (CBN) to remain on hold given risks of sustained capital outflows and NGN pressures. FX reserves peaked at US$48bn in May and have eased since then as the CBN has doubled FX sales to US$128mn in the Investors and Exporters Window. It has also increased the frequency of sales to Bureau De Changes to limit pressures in parallel markets. At over11 months of import cover, FX reserves provide ample ammunition to defend the Naira but on-going risks justify a cautious monetary policy stance.

Meetings, data and information dissemination

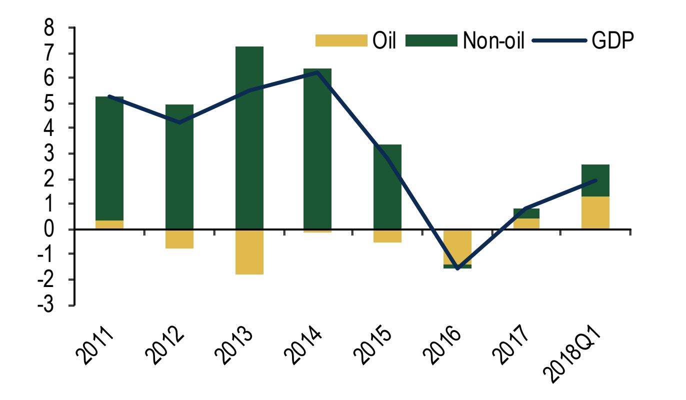
The Monetary Policy Committee meets every other month to decide on the policy rate. Minutes of the rate-setting meetings are usually released on the second day of the meeting. Inflation reports are available monthly from the National Bureau of Statistics.

Chart 104: Inflation declining from 2016 highs



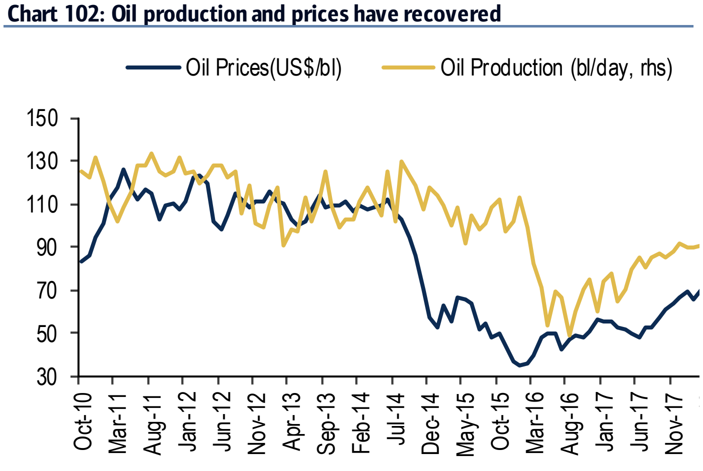
Source: BofA Merrill Lynch Global Research, Haver

Chart 105: Oil driven recovery



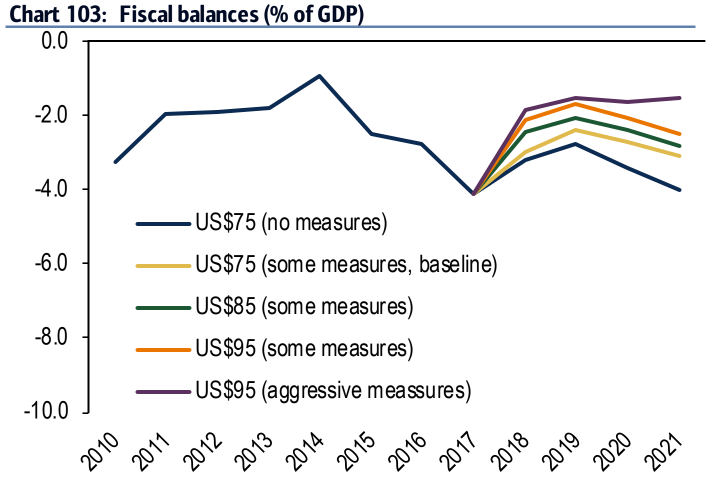
Source: BofA Merrill Lynch Global Research, Haver

Chart 102: Oil production and prices have recovered



Source: BofA Merrill Lynch Global Research, Haver

Chart 103: Fiscal balances (% of GDP)



Source: BofA Merrill Lynch Global Research

In the past, the MPC has held emergency meetings, normally at times of excessive market volatility. The central bank releases detailed data sets on interest rates, external sector activity, monetary statistics, development finance and bi-weekly FX auctions. It also publishes comprehensive economic reports every quarter.

Economic structure and outlook

Growth is improving from the 2016 recession but is likely to remain lacklustre without significant reforms. Exchange rate interventions, delays to the passing of the budget and an over-reliance on oil revenues continue to hinder investment. Implementation of the 2017-20 Economic Growth and Recovery Plan (ERGP) has been slow given waning appetite for drastic policy changes ahead of the 2019 elections.

Nigeria's 2018 Budget (passed after a near 6-month delay) takes advantage of higher oil revenues to raise spending while fiscal balances improve. Spending was raised by 23% to N9.1tn versus the 2017 budget, on higher capex plans ahead of presidential elections scheduled for February 2019.

Under our baseline with a US$70/bbl oil price and some non-oil revenue mobilizing measures, we expect the fiscal deficit to narrow from -4.1% of GDP in 2017 to -3.0% in 2018 but remain below the budget target at -1.7% of GDP. In turn, we see risks of higher issuance relative to the budget proposal. Authorities have already announced plans for new EXD issuance of up to US$4.5bn. GDP growth upside from higher oil is offset by the consistently weak non-oil economy. Q1 GDP growth slowed to 1.95% from 2.1% in Q1. We maintain our view for growth of 2.5% in 2018 versus the budget target of 3.5%. Conflicts in the in the middle belt have escalated with increasing scrutiny of the Buhari administration for lack of a significant response. If sustained, this could also pose risks to agricultural production. Stoppages at key pipelines are also key to watch. Risks of major militant and ethno-religious conflicts will continue to rise ahead of elections, in our view.

Local/external debt ratings

	Local	External
2018	B2/B/B+	B2/B/B+
2017	B2/B/B+	B2/B/B+
2016	B1/B/B+	B1/B/BBB-
2015	Ba3/B+/BB	Ba3/B+/BB-
2014	Ba3/BB-/BB	Ba3/BB-/BB-
2013	Ba3/BB-/BB	Ba3/BB-/BB-
2012	Ba3/BB-/BB	Ba3/BB-/BB-
2011	B+/BB	BB+/BB-
2010	B+/BB	B+/BB-
2009	B+/BB	B+/BB-
2008	BB/BB	BB-/BB-
2007	BB/BB-	BB-/BB-
2006	BB/BB-	BB-/BB-
2005	-	-
2004	-	-
2003	-	-
2002	-	-
2001	-	-
2000	-	-

Source: BofAML Global Research, Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+2
Basis: Act/Act
Coupon frequency: Semi-annual

Bloomberg pages

NGN Currency ALLQ<GO> FX rates
OTC NGN<GO> - Market monitor
CBN<GO> - Central bank monitor

Useful websites

Central Bank of Nigeria
www.cbn.gov.ng

Federal Budget Office
www.budgetoffice.gov.ng

National Bureau of Statistics
www.nigerianstat.gov.ng

Debt Management Office
www.dmo.gov.ng

Nigerian Stock Exchange (NSE)
www.nse.com.ng

FMDQ OTC Securities Exchange
www.fmdqotc.com

*Links are to third-party websites, and do not contain BofAML Global Research.

Bond market

At US$85bn (roughly 20% of GDP), Nigeria's total public debt stock remains small but has grown substantially since 2010. Debt is mostly domestic. Authorities' debt management strategy is to reduce the ratio of domestic to foreign debt from 70/30 currently to 60/40 by 2019. Foreign interest is concentrated on short-end bills, especially since the 2017 devaluation.

Short-term or floating rate debt. T-bills constitute two thirds of the total stock of tradeable debt and short-end issuance increased substantially in 2016-17. Most T-bills are issued by the central bank in the form of zero-coupon bills. Bills are issued for 91, 182, and 364-day tenors.

Fixed coupon debt. The remaining 37% of debt is composed of fixed-coupon bonds. The yield curve extends up to 2037 with liquidity focused on 5y, 10y and 20y tenors. Foreign presence in longer dated bonds is lower. The average life to maturity of outstanding bonds is 9.2 years, broadly in line with the government's 10-year target.

Auction and placement mechanism

The CBN conducts T-bill auctions on behalf of the Ministry of Finance Bills auctions are held on a weekly basis, and results are announced at the end of day. Bond auctions are less frequent, usually held once a month. The Debt Management Office publishes the quarterly issuance calendar a few days into the quarter with auction results also available at the end of day.

Derivatives market

There is no liquid swap/FRA market in Nigeria.

FX market

The de facto exchange rate regime in Nigeria has been 'other managed' since 26 August 2016. The de jure exchange rate arrangement is floating, with the CBN announcing the move to a flexible regime on June 20, 2016. The Naira was devalued the last time in July 2017 and the central bank keeps USD/NGN very close to 360, in a de facto pegged arrangement.

The Nigerian Autonomous Foreign Exchange Rate Fixing (NAFEX) or the Investors and Exporters window was introduced on 21 April 2017. Participants include authorized dealers, domestic and foreign portfolio investors, exporters and any other parties wanting to change FX. Permitted transactions include 'invisibles' such as loan repayments, dividends, capital repatriations and trade-related payment obligations. Derivatives are also traded in this window.

On 2 August 2017, the FMDQ-OTC Securities Exchange issued a directive for domestic banks to submit real time indicative rates in the NAFEX window and USDNGN depreciated by 16% after the announcement, moving in line to the NAFEX window. The convergence between the key windows has helped improve investor sentiment and FX inflows.

Table 115: Vital statistics and characteristics of Nigeria's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
ZAR						
Spot	NGN Spot	Illiquid	NA	NA	NGN=	▪Mainly trades against USD.
Forwards	NAFEX NDF	USD100m (during auctions)/ USD25mn normally	USD5-10mn	N5-7		

Source: BofA Merrill Lynch Global Research, Reuters

The CBN intervenes in the FX market via the interbank market and Secondary Market Intervention Sales (SMIS). In the interbank window, the CBN intervenes using the spot rate, forwards and non-deliverable OTC FX futures. The CBN may, at its discretion, also intervene in the FX market through the sale of FX to Authorized Dealers (wholesale) or to end-users through authorized dealers (retail) via a multiple-price book building process. All FX spots and forwards purchased in the wholesale window are transferable to the interbank market and the CBN may offer long-tenured FX forwards of 6-12 months or any tenor to Authorized Dealers.

Investor base

The domestic banking sector has traditionally dominated the domestic debt market, since Nigeria is not part of major EM indexes and foreign interest has historically been limited. The recent devaluation and the broad positive emerging markets sentiment that prevailed in 2H17 pushed foreign holdings up. Foreigners accessed the market mainly via T-bills position, in order to take advantage of the high interest rates offered by the Naira. The Treasury does not publish statistics on foreign ownership (as opposed to most of the rest of emerging markets), but the IMF estimates it at 38% as of May 2018.

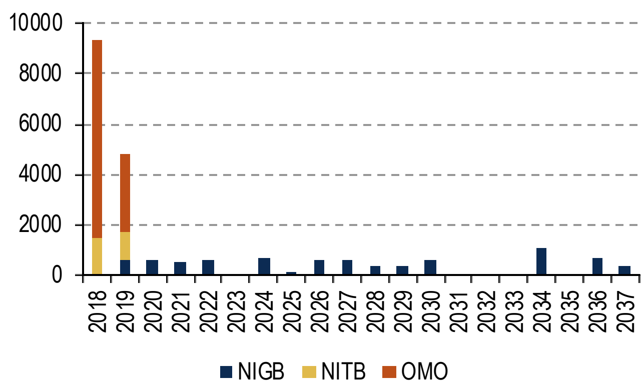
Rules, regulations, capital control and taxation

There are no restrictions or regulations for foreign investors to enter the Nigerian market. The nominee concept is recognized under local law at the depository level. Foreign investors can invest and divest at will, with no restrictions or repatriation mechanisms in place. There is no capital gains tax but a 10% withholding tax is applicable to dividend payments and deposits.

Clearing and settlement

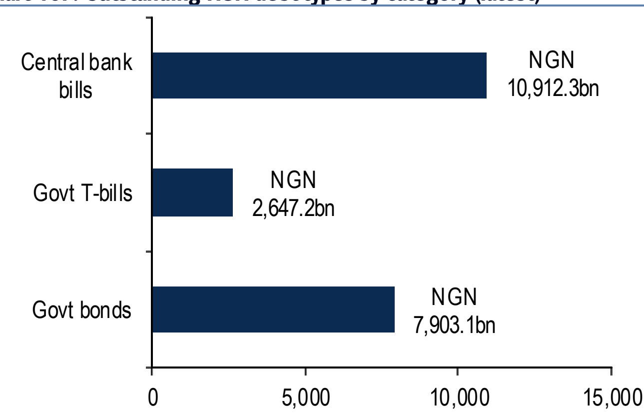
The Central Securities Depository manages the movement of securities while the Central Bank of Nigeria effects the settlement of cash. Free of payment transactions are only permissible for Government Securities which are traded off-exchange.

Chart 106: Maturity profile of outstanding Nigerian government securities (NGN bn)



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 107: Outstanding NGN debt types by category (latest)



Source: BofA Merrill Lynch Global Research, Bloomberg

Poland

Gabriele Foa >>
MLI (UK)

Mai Doan
MLI (UK)

Overview

Poland is the largest and most diversified economy in the CEE. The broad domestic demand base helps cushion the country during external downturns. Poland is also the largest recipient of EU structural and cohesion funds in the current financial perspective 2014-20, which implies a strong pipeline of investments for the next 3-5 years. We expect Poland to maintain a fast growth rate of 3.5-4% in 2017-18, while potential growth is at a solid 3%.

The National Bank of Poland

Objectives

The National Bank of Poland's (NBP) basic objective is to maintain price stability, while supporting the government's economic policy, insofar as it does not constrain the pursuit of the NBP's basic objective. Every year, the NBP releases a monetary policy strategy that updates and stipulates guidelines for policy implementation. The inflation target has been set at 2.5% with a permissible symmetric corridor of 1%, according to published monetary policy strategy since 2003. The NBP is also responsible for the stability of the zloty and preservation of financial stability.

The operational tasks of the NBP include supervising and regulating the payment system; managing foreign exchange reserves; regulating banks' liquidity and providing them with refinancing facilities; establishing the necessary conditions for the development of the banking system; acting to sustain financial system stability; and compiling monetary and banking statistics, as well as balance of payments and international investment position data.

Legal framework

The National Bank of Poland is the central bank of the Republic of Poland. Its tasks are stipulated in the Constitution of the Republic of Poland, the Act on the National Bank of Poland and the Banking Act.

Decisions

The Monetary Policy Council and the Management Board are the two supreme decision-making bodies of the National Bank of Poland. The MPC is led by the NBP president and is responsible for conducting monetary policy, including setting interest rates, reserve requirements and open market operations. All motions are adopted by a majority vote when at least five members are present, including the council chairperson. In the event of a tie, the president has the deciding vote. The MPC discloses voting records in its Inflation Report and on its website with a delay of six weeks if the motion did not pass, or after the decision has been published in the Court and Economic Monitor if interest rates were changed, which essentially means a 1-3 month delay.

Table 116: Key facts

Name	National Bank of Poland
Founded	1945
Governor	Adam Glapinski
Board members	10
Autonomous	Yes
Government representative on board	None
Terms	6 years; limited to 1 term
Inflation target	2.5% with ±1pp tolerance band
Latest move	Hold (5 September 2018)

Source: BofA Merrill Lynch Global Research, National Bank of Poland

Table 117: Key links*

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
Statistics
Reports
Presentations and speeches
Legal framework
English version
Ministry of Finance
National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research. Source: BofA Merrill Lynch Global Research

The current board

The MPC consists of nine members and the chairperson, and has usually been characterized by diverging views. The chair is the president of the National Bank of Poland, and cannot serve for more than two terms. The other nine members of the Monetary Policy Council are appointed in equal numbers by the President of the Republic of Poland, the Sejm and the Senate. Almost the entire council is replaced every six years.

President Adam Glapinski was appointed by the Law and Justice (PiS) government in June 2016 in a well-anticipated decision, following the end of his predecessor's term, Marek Belka. Glapinski, served on the MPC between February 2010 and February 2016 and so his appointment reassured markets on policy prudence and continuity.

Eight other members of the MPC were appointed by PiS in January-March 2016. This Council has not decided on an interest rate change, and comments generally point to a dovish but cautious approach to monetary policy. In any case, this MPC will likely be more pro-government than its predecessor.

The council tends to be against unconventional monetary policy tools and, at least

Table 118: Monetary Policy Council members

Name	Date originally appointed	Current term ends	Term limit ends	Background	Known policy stance
Adam Glapinski, Chairperson	Jun 2016	Jun 2022	Jun 2028	PhD in economics, Central School of Planning and Statistics; former minister of Construction and Spatial Planning, former minister of Foreign Economic Relations, economic advisor to the president of the Republic of Poland	Dovish, pro-PiS government
Grażyna Ancyparowicz	Feb 2016	Feb 2022	Feb 2028	Graduate of the Central School of Planning and Statistics (currently Warsaw School of Economics). Until 2011, she combined her research with work in government institutions, holding the position of department director in the Central Planning Office and then in the Central Statistical Office. In 1996-2002, she worked in one of the largest Polish financial corporations.	Dovish/swing
Eugeniusz Gatnar	Jan 2016	Jan 2022	Jan 2028	Professor of Economics, graduate of the Faculty of Management of the Academy of Economics in Katowice (currently the University of Economics). His career is connected with this university, where he is head of the Department of Business and Financial Analysis in the Faculty of Finance and Insurance. In 2000-2010, he was a member of the Main Council of the Polish Statistical Association, and in 2007-2015 he was a representative of NBP in the Statistical Council. In 2007-2010, he was an adviser to the President of NBP, then in 2010-2016 he was a Member of the Management Board of NBP.	Hawkish
Łukasz Hardt	Feb 2016	Feb 2022	Feb 2028	In 2002, he graduated from the Faculty of Economic Sciences at the University of Warsaw, and now heads the Department of Political Economy there. Hardt was a visiting professor at the University of Cambridge, and also had research internships in universities in Helsinki and Milan, as well as in the London School of Economics and Political Sciences. He was a member of the Supervisory Board of the Warsaw Stock Exchange.	Hawkish
Jerzy Kropiwnicki	Jan 2016	Jan 2022	Jan 2028	Graduate of the Department of Foreign Trade at the Central School of Planning and Statistics (currently Warsaw School of Economics). For many years he has been active in public service, among others as a Member of Parliament of the first and third terms. In 2010-2016, he was adviser to the President of NBP.	Dovish/swing
Eryk Łon	Feb 2016	Feb 2022	Feb 2028	Graduate of the Faculty of Economics at the Academy of Economics in Poznań (currently Poznań University of Economics) and the Faculty of Law and Administration at the Adam Mickiewicz University in Poznań. His career is connected with the Poznań University of Economics. He is author of the report "Why Poland should not join the euro area" published on the NBP website during the term of office of the late NBP President Sławomir Skrzypek.	Dovish
Jerzy Osiatyński	Dec 2013	Dec 2019	Dec 2025	Professor of economics, Warsaw School of Economics; former finance minister and parliament member	Swing
Rafal Sura	Nov 2016	Nov 2022	Nov 2028	Graduate of law at the Catholic University of Lublin and holder of postdoctoral degree in the Science of Law. Until 16 November 2016 he was a judge of the Tribunal of State. He is the author of numerous research papers and legal opinions in the area of banking law and administrative law.	Moderately dovish
Kamil Zubelewicz	Feb 2016	Feb 2022	Feb 2028	Graduate of International and Political Relations at the Warsaw School of Economics and the Faculty of Law and Administration at the University of Warsaw.	Hawkish
Jerzy Zyżyński	Mar 2016	Mar 2022	Mar 2028	Graduate of the Faculty of Economic Sciences at the University of Warsaw, and an employee of the University of Warsaw since 1974. Prior to his appointment to the MPC, he was a member of parliament during the seventh and eighth term.	Dovish

Source: BofA Merrill Lynch Global Research, National Bank of Poland nominally, does not target the exchange rate. That said, as a small, open economy with still high vulnerability to FX loans, the exchange rate has a meaningful pass-through to inflation and has a marked impact on exports, as well as financial stability. As a result, the MPC occasionally engages in verbal and actual intervention when it views currency moves as too fast to be explained by fundamental changes and could put the economy, the financial system or the achievement of the inflation target in jeopardy.

Monetary policy regime and instruments

The National Bank of Poland has been an inflation targeter since 1998, among the first in Central and Eastern Europe. It has targeted a 2.5% +/-1% corridor since 2004. The primary policy rate tool, referred to as the reference rate, is the seven-day repo rate. The NBP also sets deposit and Lombard rates, which create a +/-1% corridor around the policy rate.

Banks are required to maintain reserves with the NBP. Beginning 31 December 2010, the required reserve rate has been 3.5% for all deposits, except for funds obtained from repurchase agreements, whose required reserve rate is 0%. Since 30 September 2003, all banks have been reducing their calculated required reserves by an equivalent of €500,000. The Monetary Policy Council seldom changes the required reserve rate; when it does, it is either to converge/follow European Central Bank measures or to prepare the market for a change in the monetary policy stance.

During the worst of the 2008 global financial crisis, the NBP introduced special FX swap facilities given widespread private sector use of FX loans.

Exchange rate regime and instruments

The zloty has been fully floating since 2000. However, the National Bank of Poland reserves the right to intervene, and though the Monetary Policy Council does not target a level in the exchange rate there are various influences on the currency.

First, the Ministry of Finance and NBP can decide whether to convert the inflows from Eurobonds and the EU structural funds received by Poland in the market. This measure is often used when authorities believe exceptional global uncertainty is generating unfounded spillover effects on the zloty.

Second, the MPC occasionally signals an assessment of the zloty, taking into consideration inflation, the growth performance of the economy and the exchange rate level relative to the levels exporters indicate as thresholds for profitability, generally around €3.8.

Third, the NBP can decide to intervene directly in the market. All these tools are deployed primarily to avoid excessive volatility in the market rather than guiding the market toward a specific rate.

Credit regulation functions

The Polish Financial Supervision Authority (KNF) supervises the financial services industry in Poland. The National Bank of Poland has a strong financial stability division and the council is mindful of financial stability spillovers from domestic and external monetary policy decisions. Real interest rates and retail deposit rates are among the key variables that the council focuses on when setting monetary policy, as a means to monitor potential unwanted medium-term consequences of the country's ability to generate savings. Governor Glapinski proposes that the financial supervision function be incorporated into the NBP's mandate.

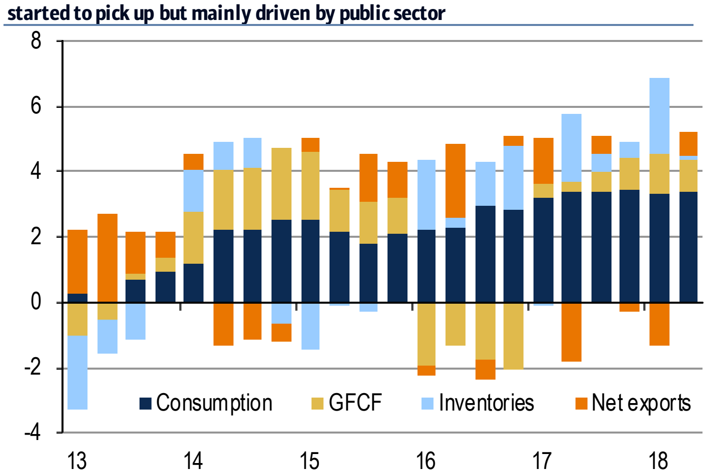
Current policy stance

The MPC maintains a neutral stance, and so far Governor Glapinski has strongly resisted rate hike discussions, as inflation developments remain extremely benign where core inflation stays below 1%. We do not think the NBP will be too slow moving in response to upside inflation risks, but the CPI outlook and the MPC's dovish leaning suggest no rate hikes in 2019.

Meetings, data and information dissemination

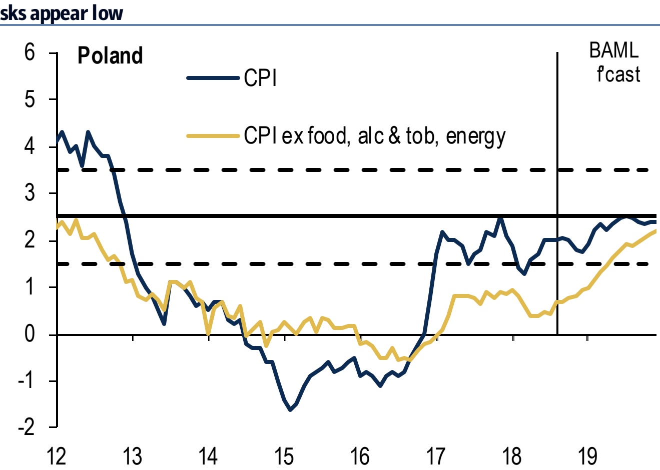
The Monetary Policy Council meets once a month to decide on a level of interest rates consistent with the adopted inflation target. After each interest rate decision, the MPC releases a statement at 16:00 local time, including an overview of the main factors influencing the decision and often an indication of the monetary policy stance. The president and one or two council members lead a press conference with Q&A. Minutes of the rate-setting meetings are released on around the 20th of each month and an inflation report is published quarterly. The National Bank of Poland compiles monetary and banking, the balance of payments, and international investment position data.

Chart 108: Strong growth supported by consumption, while investments have started to pick up but mainly driven by public sector



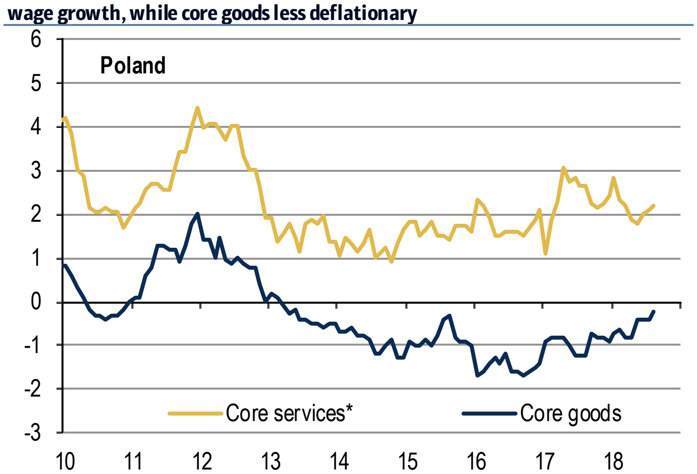
Source: Haver, BofA Merrill Lynch Global Research

Chart 109: NBP's neutral bias will likely extend into 1H18 as CPI overshooting risks appear low



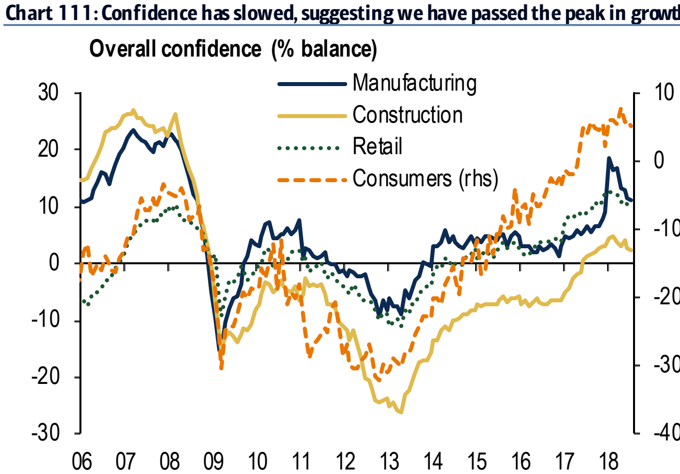
Source: Haver, BofA Merrill Lynch Global Research

Chart 110: Core services inflation has not picked up materially despite robust wage growth, while core goods less deflationary



*Excluding financial services in 2018 due to large one-off impact. Source: BofA Merrill Lynch Global Research, Haver

Chart 111: Confidence has slowed, suggesting we have passed the peak in growth



Source: BofA Merrill Lynch Global Research, NBP

Economic structure and outlook

Polish GDP is well supported by buoyant private consumption, while the investment recovery funded by EU funds should add further support to growth, likely running in a 3.5-4% range in 2018-19. Consumer confidence has been on a steep uptrend, now at record highs since the series started in 2004. Households are enjoying several tailwinds from favorable labor market conditions and low interest rates, and we expect real spending growth to remain around 4-5%. Poland's plan to absorb EU funds of 2-2.5% of GDP in the next 3-5 years, implying a strong pipeline for investments and solid cushion against external risks.

Bond market

Local/external debt ratings

	Local	External
2018	A2/A-/A-	A2/BBB+/A-
2017	A2/A-/A-	A2/BBB+/A-
2016	A2/A-/A	A2/BBB+/A-
2015	A2/A/A	A2/A-/A-
2014	A2/A/A	A2/A-/A-
2013	A2/A/A	A2/A-/A-
2012	A2/A/A	A2/A-/A-
2011	A2/A/A	A2/A-/A-
2010	A2/A/A	A2/A-/A-
2009	A2/A/A	A2/A-/A-
2008	A2/A/A	A2/A-/A-
2007	A2/A/A	A2/A-/A-
2006	A2/A-/A	A2/BBB+/BBB+
2005	A2/A-/A	A2/BBB+/BBB+
2004	A2/A-/A	A2/BBB+/BBB+
2003	A2/A-/A+	A2/BBB+/BBB+
2002	A2/A/A+	A2/BBB+/BBB+
2001	A2/A+/A+	Baa1/BBB+/BBB+
2000	A2/A+/A+	Baa1/BBB+/BBB+

Source: BofAML Global Research, Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+2
Basis: Act/Act
Coupon frequency: Annual

IRS

Fixing: 6m WIBOR 11am CET (1y IRS fixes against 3m WIBOR)
Coupon frequency: Annual fixed Act/Act, semi-annual floating ACT/365

Bloomberg pages

PLN Curncy ALLQ<GO> FX rates
OTC PLN<GO> - Market monitor
PLMF<GO> - Bond auctions page
NBP<GO> - Central Bank monitor

Reuters pages

FX page <ECB37>
Bonds page 0#PLTSY=

Useful websites

National Bank of Poland
www.nbp.pl

Ministry of Finance
www.mf.gov.pl

Central Statistics Office
www.stat.gov.pl

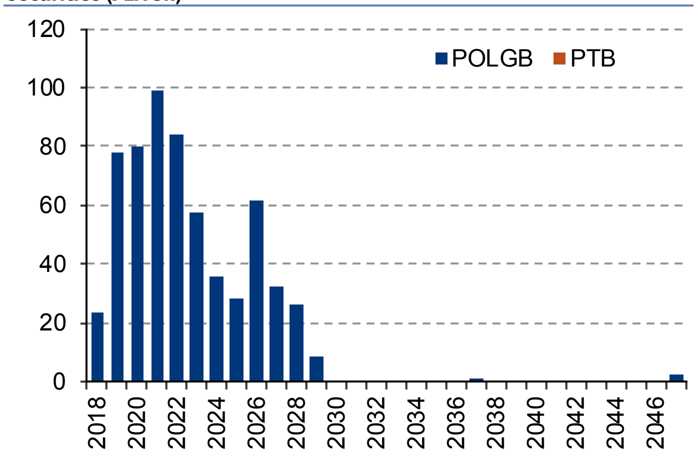
Financial Supervision Authority
www.knf.gov.pl

Warsaw stock exchange
www.gpw.pl

The National Depository for Securities
www.kdpw.pl

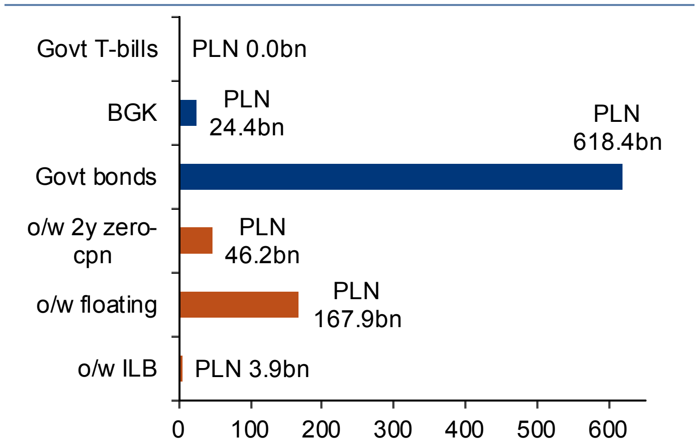
*Links are to third-party websites, and do not contain BofAML Global Research.

Chart 112: Maturity profile of outstanding Poland government securities (PLN bn)



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 113: Outstanding Polish debt types by category (latest)



Source: BofA Merrill Lynch Global Research, Bloomberg

The Polish bond market is one of the largest and one of the most liquid in EEMEA. Total outstanding debt for the government sector is about US$174bn, almost all (96%) composed of bonds.

Short-term of floating rate debt. Treasury bills are not used as a debt instrument, while floaters constitute 26% of local debt. Floaters are issued regularly (though in smaller size than fixed-coupons), mostly for domestic banking sector consumption. The Treasury also issues a small share of zero coupon bonds, which is mostly absorbed by domestic players too. The 2y zero coupon bonds (OK series) are among the most liquid instruments and comprise about 7% of bonds. State-owned bank BGK also infrequently issues bonds at auctions.

Fixed coupon debt. Excluding zero-coupon, floaters and linkers, the remaining 62% of debt has fixed coupons. The curve extends to 2047, but liquidity dries up past 28s, so

10y is really the longest tradable maturity. Foreign presence (and hence liquidity) concentrates on the 5-10y segment of the curve. There is only one CPI-linked bond that is very illiquid and only rarely tapped.

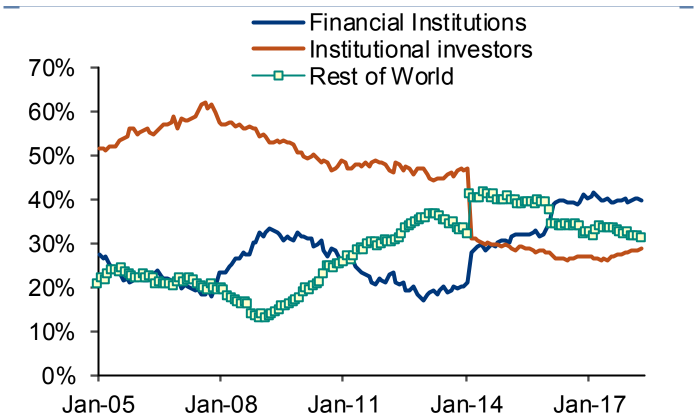
Table 119: Summary statistics of Poland derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-Ask spread	Bloomberg/Reuters Reference
Interest rate swaps				
2-year	75K DV01	10-15K DV01	1-2bp	PZSW1/PLNVIEW
5-year	125K DV01	10-15K DV01	1-2bp	PZSW5/PLNVIEW
10-year	100K DV01	10-15K DV01	2-3bp	PZSW10/PLNVIEW
Basis swaps				
	EUR 100mn	EUR 25mn	5-10bp	PZBS/ICAPPLN

Source: BofA Merrill Lynch Global Research, Bloomberg, Reuters

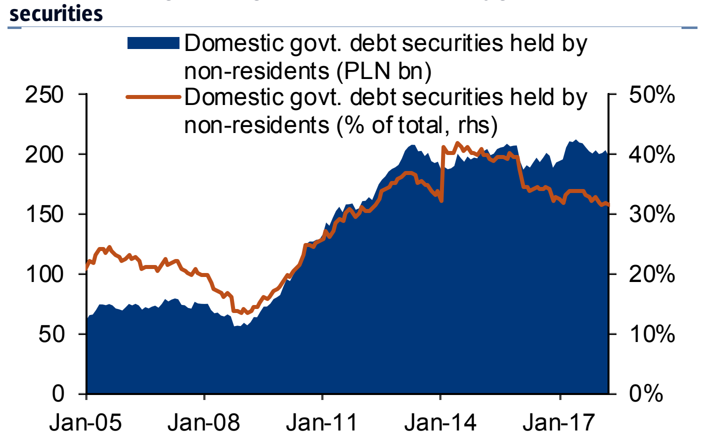
Auction and placement mechanism. The average time to maturity of domestic debt is low, as it equaled 4.5 years as of June. About 38% of outstanding domestic debt matures between 5 and 10 years, while only 2% of outstanding debt has maturity greater than 10 years. Strong fiscal performance and null/negative State budget borrowing requirements recently helped issuance trends. In the summer of 2017, the MinFin did not issue for four months in a row. Most recently, repurchases more than offset issuance in a few months (e.g. April 2018) resulting in negative net issuance.

Chart 114: Distribution of government securities holdings



Source: BofA Merrill Lynch Global Research, Haver

Chart 115: Foreign holdings of Polish local currency government debt securities



Source: BofA Merrill Lynch Global Research, Haver

The NBP organizes the auctions for the Finance Ministry. Sale auctions are carried out in single-price format via primary dealers. Non-competitive bidding for T-bonds and T-bills was introduced in January 2012. The share of non-competitive bids in the total sales value on a given auction cannot exceed 5%. Auctions are typically held once per month, in the last week of the month. Fixed-coupon bonds and floaters are typically on offer. The final offer/supply is announced two days before the auction and offered amounts may change depending on market sentiment. Typically, maturities on offer are focused on 3-, 5- and 10-year maturities, and occasionally 30y. Switch auctions are held the first or the second week of the month. Short-end maturities can be exchanged for benchmark bonds across zero-coupon, floating and fixed-coupon bonds.

Derivatives market

The derivatives market is well developed, with FRAs and IRS relatively liquid. In IRS, 5y and 10y are most liquid but the 2y segment is heavily traded too. Forward swaps are fairly liquid with 1y1y and 5y5y being the most popular. Longer maturities are less liquid. FRAs fix against either 3m or 6m WIBOR. While an overnight rate, POLONIA, is published daily by the NBP (based on overnight interbank deposits), the OIS market is not very liquid. The most liquid interest rate derivative is the single currency interest rate swap (fixed for floating) with liquidity going up to 12y. Note that for the 2y and the 1y1y forward the fixing rate is the 3-month WIBOR. Basis swaps are also actively traded.

FX market

The Polish zloty is fully convertible and has been freely floating since April 2000. It is a relatively liquid EM currency with average daily volumes ranging about EUR2bn, ticket sizes typically around €20mn and bid-offer spreads at PLN 0.002. EUR/PLN comprises the overwhelming bulk of trading volumes. Forwards and swaps are liquid up to 1y. A foreign exchange swap involves the purchase (or sale) of zloty by the NBP for foreign currency in the spot market, with a simultaneous sale (repurchase) under a specified date forward transaction.

The NBP used to regularly carry out intervention to dampen market volatility, but its activity on FX has been substantially reduced recently. Poland historically had Euro adoption as a medium-term policy target, but most recently the political appetite may have decreased.

Investor base

Poland's local debt market has one of the most diversified investor bases, although the government's private pension reforms in 2014 have led to significant changes in the structure of debt holdings. Domestic institutional investors are important participants, with domestic banks holding around 40% of outstanding domestic treasury securities and the domestic non-banking sector another 29%. Foreign investors comprise the remaining 31%. Foreign interest has been strong in the past decade, rising from less than 15% in early 2009 to a peak of around 40% in 2014, when the government required pension funds of the second pillar to transfer government bonds to the state. The fall in foreign holdings observed early in 2016 reflected investors' caution about the changeover in the government in 2015, and associated fears regarding policy predictability. The international investor base is well diversified, with strong presence in Asia. Both the level of foreign holdings and the diversified presence in the market are helped by being one of the few emerging markets to be part of the Citi WGBI index, one of the key global fixed income benchmarks.

The Polish government is currently in talks for the introduction of a third pillar to the pension system, inspired to the US 401(k) plan. Participation to the scheme should be voluntary but with automatic enrolment. The program should kick-in in January 2019, but it is facing some criticism given the cost for employers originating from their planned contribution. The introduction of the plan has the potentially to further develop the local bid for Polish domestic debt.

Table 120: Vital statistics and characteristics of Poland's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
PLN Onshore						
Spot	PLN Spot	EUR2bn	EUR20m	PLN 0.002	EURPLN=	▪ Mainly trades against EUR, most liquid benchmark currency in CE
Forwards	Forwards & Swaps	EUR3bn	EUR25-50mn	PLN 0.003	EURPLNFWD=	▪ Liquid up to 1 year.
Options	FX Options	EUR0.25bn	EUR50mn	0.45 vol	EURPLNVOL	▪ Options available till tenor of 5 years but are liquid up to 2.

Source: BofA Merrill Lynch Global Research, Reuters

Rules, regulations, capital control and taxation

The Foreign Exchange Law of 2002 harmonized Polish regulations with European Union standards. It removed all limitations on capital flows between Poland, the European Economic Area (EEA) and the Organization for Economic Co-operation and Development (OECD). Capital flows involving countries outside the EEA and OECD are subject to NBP authorization. A withholding tax is deducted at 19% on dividends and 20% on royalties and interest payments to non-residents, unless reduced by double tax treaties.

Clearing settlement and taxation

The national depository for securities (KDPW) conducts the settlement of T-bond transactions in the secondary market. As of 16 April 2012, Polish securities are also Euroclearable.

Table 121: Summary of Poland bond markets and products

Instrument	Treasury bills	Government bonds
Issuer	Ministry of Finance	Ministry of Finance
Currency	PLN	PLN
Principal	PLN1,000 (par)	PLN 1,000 (par)
Tenor	30, 49 and 52 weeks	2-30 years
Interest rate/coupon	Issued at discount	Fixed / Floating
Coupon Payments	Zero	Annual (semi-annual for floating)
Day Count Calculation	Act/360	Act/Act
Amortization Schedule	Discount	Bullet
Form	Registered	Registered
Amount outstanding (as of Jun 2018)	_	PLN 618.2bn
Secondary Market		
Trading	OTC and Stock Exchange	OTC and Stock Exchange
Quotation Convention	Price	Price
Settlement Period	T+2	T+2
Average Daily Turnover	PLN0.3bn	PLN2-2.5bn
Bid/offer spread (0-5Y)	4bp	1bp
Bid/offer spread (5Y+)	NA	1bp
Average trade size	PLN15-20mn	PLN 25mn
Clearing Mechanism	National Depository for Securities (KPDW)	National Depository for Securities (KPDW)
Major players	Primary dealers	Primary dealers
Trading hours	9:00 – 16:30 (Poland)	9:00 – 16:30 (Poland)
Bidders	All entities or individuals, including non-residents, may participate. Mostly local banks, investment funds, corporates.	All entities or individuals, including non-residents, may participate. Mostly local banks, investment funds, corporates.
Regulations		
Restrictions on Foreign Investment	No restrictions	No restrictions
Custodian	Yes, through KDPW	Yes, through KDPW
Withholding Tax	Withholding tax at 19% on dividends, 20% on royalties and interest payments to non-residents, unless reduced by double tax treaties.	Withholding tax at 19% on dividends, 20% on royalties and interest payments to non-residents, unless reduced by double tax treaties.
Capital gains Tax	19% for institutional investors	19% for institutional investors
Entry/Exit Tax	None	None
Primary Auctions		
Auction Style	Competitive tender in a single-price Dutch auction format via primary dealers or non-competitive tender	Competitive tender in a single-price Dutch auction format via primary dealers or non-competitive tender
Average Issue Size	NA	PLN0.5-1bn
Minimum Amount of Tender	None	None

Source: BofA Merrill Lynch Global Research, Bloomberg, various local authorities

Romania

Gabriele Foa >>
MLI (UK)

Mai Doan
MLI (UK)

Overview

Being one of the least developed states in the EU, the upside potential for Romania is large, but should not be taken for granted. The economy transformed itself under the IMF program in 2009-11, but the strong macro buffers since then have been eroding quickly as the authorities in recent years have loosened focus on structural reforms and EU funds absorption in favor of substantial fiscal stimulus. GDP growth, running above potential, has been unsustainably driven by consumption after a series of tax cuts and wage hikes, undermining the current account again. We do not see major financing risks as FDI stays robust and EU funds still provides support, but the steady deterioration in macro trends should keep Romanian assets underperforming.

National Bank of Romania

Objectives

The National Bank of Romania's (NBR) primary objective is to ensure and maintain price stability. Without prejudice to its primary objective, the NBR supports the government's general economic policy.

One of the NBR's main tasks is to define and implement the monetary policy and the exchange rate policy. In addition, with a view to attaining its primary objective, the central bank defines the monetary policy strategy and decides on the actual instruments and procedures to be used in conducting monetary policy. Other tasks include conducting the authorization, regulation and prudential supervision of credit institutions; overseeing the smooth operation of the payment systems with a view to ensuring financial stability; and managing the official foreign reserves of Romania. Since December 2015, the NBR has been the resolution authority for the banking sector.

Legal framework

Law No. 312/28 passed in June 2004, abiding by the provisions of Article 75 and Article 76 of the Constitution of Romania, lays out the statute of the National Bank of Romania. As the law specifies, the NBR is an independent public institution. It is empowered to issue the regulations required to implement legal provisions and ensure their observance. Starting 1 January 2007, when Romania joined the European Union, the NBR became part of the European System of Central Banks (ESCB) and the NBR's governor became a member of the General Council of the European Central Bank (ECB).

Decisions

The Board of Directors is the National Bank of Romania's decision-making body, which sets the monetary and exchange rate policies, the measures relating to authorization, regulation and prudential supervision of credit institutions. It also oversees the payment systems, establishes the internal organization structure, and assigns the tasks to the executives and to NBR staff.

Table 122: Key facts

Name	National Bank of Romania
Founded	23 April 1880
Governor	Mugur Isărescu
Board members	9
Autonomous	Yes
Government representative on board	No
Terms	5 years
Inflation target	2.5±1%
Latest move	Hold (6 August 2018)

Source: BofA Merrill Lynch Global Research, National Bank of Romania

Table 123: Key links*

- Main page
- Board members
- Inflation Report
- Calendar, communiqués and minutes
- Statistics
- Reports
- Presentations and speeches
- Legal framework
- English version
- Ministry of Finance
- National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

In order to ensure an effective decision-making process, the four operational bodies are responsible for the performance of the main tasks of a central bank: the Monetary Policy Committee (MPC), the Supervisory Committee, the Foreign Reserve Management Committee and the Audit Committee.

The Monetary Policy Committee is a decision-making body made up of 10 members, chaired by the NBR governor. The MPC is responsible for monetary policy decisions (strategy, objectives and guidelines). The MPC also makes operational decisions to enhance the effectiveness of monetary policy and its operational framework, and to bring it in line with European Central Bank requirements.

The public finance minister and one of the state secretaries in the Ministry of Public Finance may participate, without voting rights, in board meetings.

The current board

The Board of Directors consists of nine members appointed by Parliament, following the nominations by the standing committees of the two Chambers of the Parliament. Out of the nine members, four members are senior executives of the NBR, i.e. the Governor, the first deputy governor, and two deputy governors. The other five members of the Board are not on the payroll of the NBR. The chairman of the Board is the Governor of the NBR.

Terms are for five years and can be renewed. In case the board becomes incomplete, the vacancies must be filled for the respective office, for the entire period of the tenure. A board member may be recalled from office by Parliament if he or she no longer fulfils the conditions required to perform of his or her duties, or if he or she has been found guilty of serious misconduct.

Governor Mugur Isărescu has headed the National Bank of Romania since 1991. He tends to advocate a cautious monetary stance to avoid the exchange rate impact on inflation expectations. Isărescu strongly supported high reserve requirements going into the crisis for financial stability reasons, but recently those requirements were loosened. He is also leading a convergence of monetary policy to European Central Bank standard practices, and is a big supporter of the International Monetary Fund program. There is limited information about the Monetary Policy Committee's voting procedures and records, with the governor likely having an influence on the rest of the committee.

Table 124: Board of Directors members

Name	Date originally appointed	Current term ends	Background	Known policy stance
Mugur Isărescu, governor	1991	Oct 2019	PhD in economics from the Academy of Economics in Bucharest; reappointed as governor of the NBR in 1998, 2004, 2009, and 2014; formerly prime minister of Romania, director of the Institute of World Economy	Cautious stance, usually with a preference to avoid the exchange rate impact on inflation expectations
Prof. Florin Georgescu, first deputy governor	Oct 2004	Dec 2018	PhD in economics from and a professor at the Academy of Economic Studies in Bucharest; formerly vice prime minister of Romania, finance minister	Limited public appearances, policy bias unknown
Prof. Eugen Nicolaescu, deputy governor	May 2017	May 2022	Professor in the Faculty of Commerce, Academy of Economics, Bucharest.	Limited public appearances, policy bias unknown
Prof. Liviu Voinea, deputy governor	Oct 2014	Oct 2019	PhD in economics from the Academy of Economics in Bucharest; Romania's budget minister from December 2012 to August 2014.	Dovish
Prof. Marin Dinu	Oct 2014	Oct 2019	PhD in economics, professor at the Academy of Economics, Bucharest, editor of economic magazines	Limited public appearances, policy bias unknown
Daniel Dăianu	Oct 2014	Oct 2019	PhD in economics from the Academy of Economics in Bucharest; member of the European Parliament and Romania's finance minister in 1997 and 1998.	Dovish
Gheorghe Gherghina	Oct 2014	Oct 2019	PhD in economics from the Academy of Economics in Bucharest; formerly secretary of state at the Ministry of Public Finance	Limited public appearances, policy bias unknown
Agnes Nagy	1998	Oct 2019	PhD in finance, professor at the Academy of Economics, Bucharest	Limited public appearances, policy bias unknown
Prof. Virgiliu Stoenescu	Oct 2004	Oct 2019	PhD in international economic relations, professor at the Academy of Economics, Bucharest	Limited public appearances, policy bias unknown

Source: BofA Merrill Lynch Global Research, National Bank or Romania

Monetary policy regime and instruments

In August 2005, the National Bank of Romania adopted its inflation targeting regime. This regime is based primarily on anchoring inflation expectations to the inflation target announced by the central bank, and therefore on efficient communication with the public. Inflation targets are formulated in terms of the annual change in the Consumer Price Index and are set as midpoints within a target band of +/-1 percentage points.

There are two distinct phases in the type and the levels of the inflation targets set by the NBR so far: 1) 2005-2012 – declining inflation targets, set over a two-year horizon as year-end annual rates; and 2) starting 2013 – a flat multi-annual inflation target 2.5% ± 1%, consistent with the medium-term price stability definition in the Romanian economy.

In conducting monetary policy, the NBR uses procedures and instruments specific to open market operations and lending to credit institutions, as well as the required reserve mechanism.

Open market operations are the most important monetary policy instrument for the NBR. They are conducted at the central bank's initiative and play a role in steering interest rates, managing liquidity conditions in the money market and signaling the monetary policy stance. The main categories are: repo operations, deposit-taking operations, issuance of certificates of deposit, reverse repo operations, credit operations against eligible assets as collateral, outright sales/purchases of eligible assets, foreign exchange swaps.

Standing facilities to credit institutions aim to absorb and provide overnight liquidity, signal the general monetary policy stance, and bound overnight interbank rates through the corridor defined by the interest rates on the lending and deposit facilities. The interest rates on the NBR's standing facilities, ie, the deposit facility and the lending facility, are set at ±100bp around the monetary policy rate.

There are reserve requirements on leu and on foreign currency-denominated holdings of credit institutions in accounts opened with the NBR. The main functions of leu-denominated reserve requirements are the monetary control and the stabilization of interbank money market rates. The major role of foreign currency-denominated reserve requirements is to contain the expansion of foreign exchange loans.

Exchange rate regime and instruments

The exchange rate regime can be characterized as a managed float. At the same time, inflation targets are used as a nominal anchor for monetary policy and allowing for a flexible policy response to unpredicted shocks likely to affect the economy.

Given Romania's relatively still high external vulnerability, the NBR frequently intervenes in the FX market to smooth out volatility. The focus on inflation, as well as the still large stock of FX-denominated debt in the private sector, most likely implies that the central bank is less tolerant of RON depreciation than appreciation.

Current policy stance

The NBR has embarked on the monetary tightening path with the policy rate hikes of 75bp since January 2018 to bring policy rate to 2.50%, but has recently claimed victory to inflation as headline CPI slows on base effects. We think further hikes are needed, but acknowledge that it will be unlikely this year given the dovish turnaround in the NBR's rhetoric. Increasing political influence on the Board has also constrained the central bank in this tightening cycle. The likely changeover in the Governorship in 2019 as Governor Isarescu's term expires could raise concerns among investors about the NBR's credibility going forward, as his deputies are perceived as more dovish and close to the ruling PSD.

Meetings, data and information dissemination

The National Bank of Romania meets eight times a year to decide on policy rates. A post-meeting press conference is held after the end of the meeting at 3pm local time, together with the release of a statement explaining the board's decision. The NBR publishes minutes of its monetary policy meetings from Oct 2016 with one week lag.

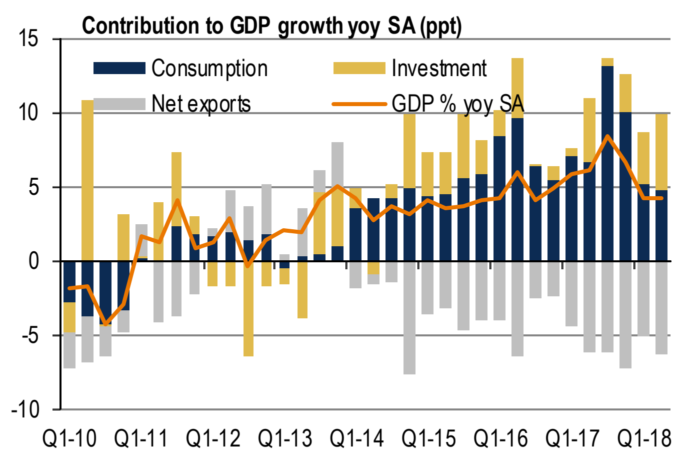
The Inflation Report is the NBR's main communication tool in its current monetary policy strategy. Published quarterly, the Inflation Report consists of five main sections: an assessment of current economic developments; the rationale behind the monetary policy decisions in the reviewed period; the NBR's projection on inflation rate developments over an eight-quarter time horizon; the uncertainties and risks associated with the projection; and the implications on future monetary policy.

The NBR is required to submit its annual report to Parliament. It also publishes economic and financial data on its web page.

Economic structure and outlook

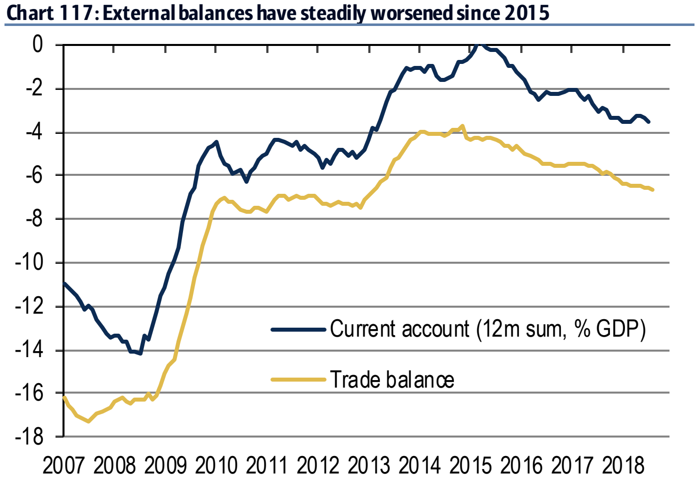
Being one of the least developed states in the EU, the upside potential for Romania is large, but should not be taken for granted. The economy transformed itself under the

Chart 116: Some cooling off in the economy but growth is still above potential



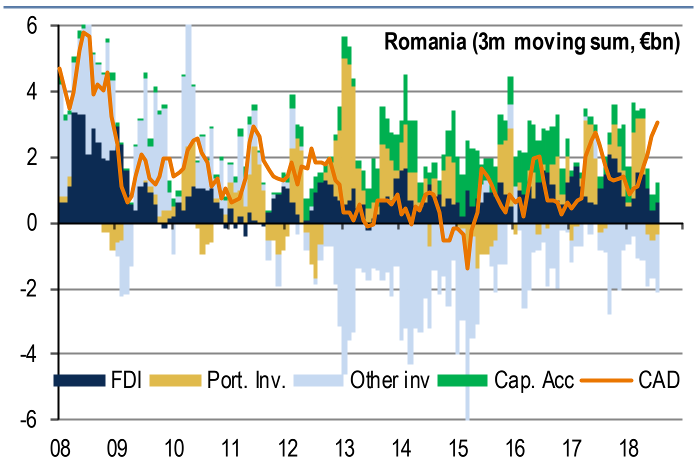
Source: BofA Merrill Lynch Global Research, Haver

Chart 117: External balances have steadily worsened since 2015



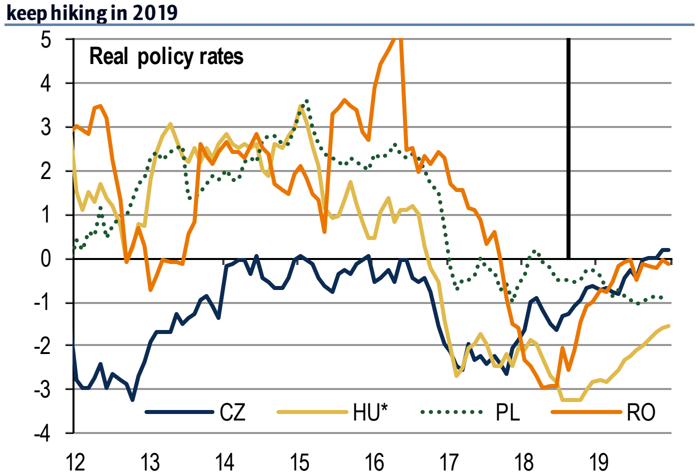
Source: BofA Merrill Lynch Global Research, Haver

Chart 118: Current account financing looks vulnerable



Source: BofA Merrill Lynch Global Research, Haver

Chart 119: RO real rates low vs weak fundamentals and vs peers – NBR needs to keep hiking in 2019



Source: BofA Merrill Lynch Global Research, Haver

IMF program in 2009-11, with a major turnaround in macro imbalances. The current account deficit narrowed from -16% of GDP in 2007 to around balanced in 2014/15, budget deficit improved from -9.5% of GDP to -0.8% in 2015 and the external deleveraging process is almost complete. However, macro buffers, while still strong, have been eroding quickly after more than four years of significant fiscal expansion, as the domestic power struggle means a clear bias by political parties for populist policies. GDP growth has slowed from the high single-digit rate last year. But the economy continues to overheat, driven primarily by consumption, as wage growth has been running at double-digit rates. The current account deficit has widened again to close to 4% of GDP.

Cheap labor continues to be an important positive factor for Romania's competiveness, which has helped attract FDI. But the relative cost advantage compared with other CEE countries has worsened. Rapid wage growth, limited productivity gains, and slow progress in structural reforms bode ill for exports and the medium- to long-term growth outlook. The National Bank of Romania consequently faces a challenging job balancing several risks at home and abroad, and is now set on a course of monetary tightening.

Bond market

The Romanian local debt market. The market remains small with around US$37bn in outstanding debt.

Short-term or floating rate debt. Around 2% of the debt is in T-bills, which have zero-coupon.

Fixed coupon debt. The remaining 98% of debt has a fixed coupon. The yield curve extends to 2031 but liquidity dries down after 2027. Bonds are traded on the Bucharest stock exchange or over the counter. Average daily trading volumes for T-bills and bonds are around RON100-150mn, with typical ticket sizes of RON10mn.

Auction and placement mechanism. The Ministry of Public Finance focuses issuance in local currency in an attempt to reduce the share of foreign currency debt. In local markets, refinancing risk is generally low. The share of local debt maturing in less than a year has been falling since 2015 and is now 7%. The average time to maturity of local debt is 3.5 years.

The NBR acts as the agent of the Ministry of Public Finance and is in charge of the auction and placement of government securities. Both competitive and non-competitive bids can be submitted. Non-competitive bids are admitted in a share of 25% of the total nominal value of each issuance. Authorities tend to reject bids at issuance in times of high interest rates. In January and February, for example, several auctions ended up with no placement.

The Ministry of Finance publishes an annual issuance plan and monthly auction announcement on its website. Auctions are conducted on Mondays and Thursdays. Issuance focuses on bills and benchmark bonds with maturities of 3, 5, and 10y.

Derivatives

Swaps trade mostly cross-currency but are illiquid. 1y and 2y swaps have bid-ask spreads around 10-15bp.

FX market

The Romanian leu (RON) is fully convertible and is currently in a managed float regime. Given Romania's relatively high external vulnerability, the NBR frequently intervenes in the FX market to smooth out volatility (which explains the tight trading range in EUR/RON). The focus on bringing down inflation, as well as the large stock of FX-denominated debt in the private sector, in the past implied that the central bank is less tolerant of RON depreciation than appreciation trend. But as the external deleveraging process is almost complete and inflation environment remains weak, this bias on the RON has likely weakened.

EUR/RON dominates trading with daily volumes averaging US$1bn, with typical ticket sizes of US$20mn and bid-offer around RON 0.03-0.04. The forwards market is liquid out to one year.

Local/external debt ratings

	Local	External
2018	Baa3/BBB-/BBB-	Baa3/BBB-/BBB-
2017	Baa3/BBB-/BBB-	Baa3/BBB-/BBB-
2016	Baa3/BBB-/BBB	Baa3/BBB-/BBB-
2015	Baa3/BBB-/BBB	Baa3/BBB-/BBB-
2014	Baa3/BBB-/BBB	Baa3/BBB-/BBB-
2013	Baa3/BB+/BBB	Baa3/BB+/BBB-
2012	Baa3/BB+/BBB	Baa3/BB+/BBB-
2011	Baa3/BB+/BBB	Baa3/BB+/BBB-
2010	Baa3/BBB-/BBB-	Baa3/BB+/BB+
2009	Baa3/BBB-/BBB-	Baa3/BB+/BB+
2008	Baa3/BBB-/BBB-	Baa3/BB+/BBB
2007	Baa3/BBB/BBB+	Baa3/BBB/BBB
2006	Baa3/BBB/BBB+	Baa3/BBB/BBB
2005	Ba1/BBB/BBB	Ba1/BBB/BBB-
2004	Ba3/BBB-/BBB	Ba3/BB+/BBB-
2003	Ba3/BB+/BB+	Ba3/BB/
2002	B1/BB-/BB	B1/B+/
2001	B2/B+/B+	B2/B/
2000	Caa1/B/B	B3/B/

Source: BofAML Global Research, Bloomberg , Moody's, S&P, Fitch

Conventions
Bonds
Quote: Yield
Settlement: T+0
Basis: Act/Act
Coupon frequency: annually

Bloomberg pages
RON Currency ALLQ<GO> FX rates
OTC RON<GO> – market monitor
NBRO<GO> – central bank and bond auctions

Reuters pages
FX page <ECB37>
Bonds page 0#ROTSY=

Useful websites
Romanian National Bank
www.bnro.ro

Ministry for National Economy
www.minind.ro

Ministry of Public Finance
www.mfinante.ro

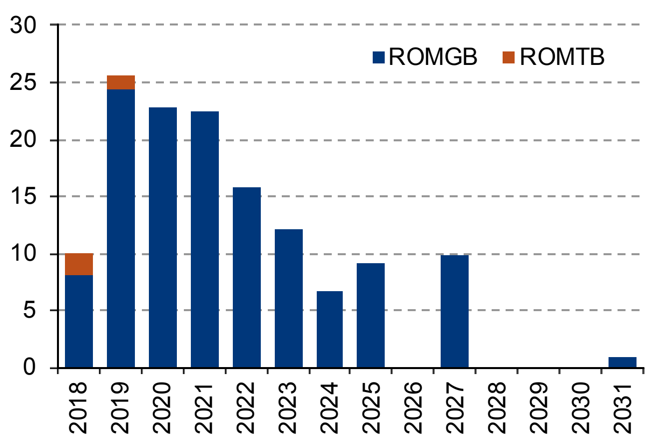
Central Statistics Office
www.insse.ro

Bucharest Stock Exchange
www.bvb.ro

Financial Supervisory Authority
www. asfromania.ro

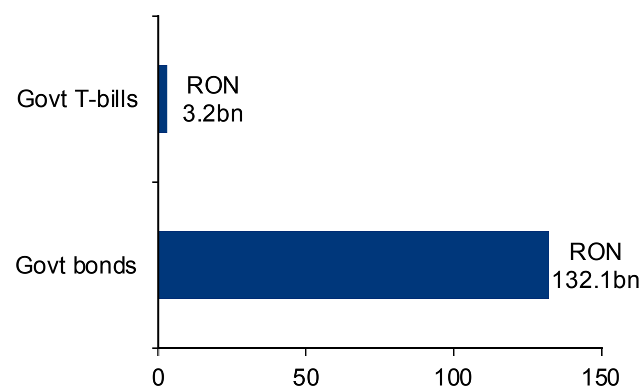
*Links are to third-party websites, and do not contain BofAML Global Research.

Chart 120: Maturity profile of outstanding govt. securities (RON bn)



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 121: Outstanding RON debt types by category (latest)



Source: BofA Merrill Lynch Global Research, Bloomberg

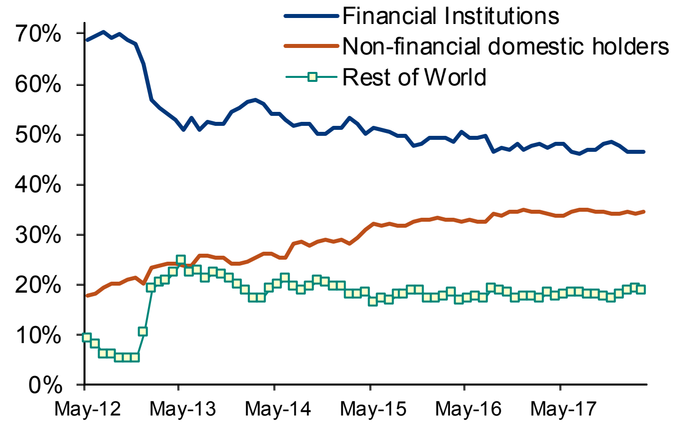
Investor base
The domestic financial institutions are the biggest holders of domestic debt, but the importance of foreign investors rose with the inclusion of local bonds in the JP Morgan GBI-EM index in March 2013. Financial institutions account for more than 46% of domestic debt while domestic private pension funds hold around 18%. Foreign holdings have been broadly stable at 19%, from their high of 25% in May 2013.

Rules, regulations, capital controls and taxation
The liberalization process of capital flows began in 1991 with the adoption of the Foreign Investment Law, which was completed in September 2006. Withholding tax applies on eligible dividend and interest payments and stands at 16%, unless reduced through a double tax treaty.

Clearing settlement and taxation

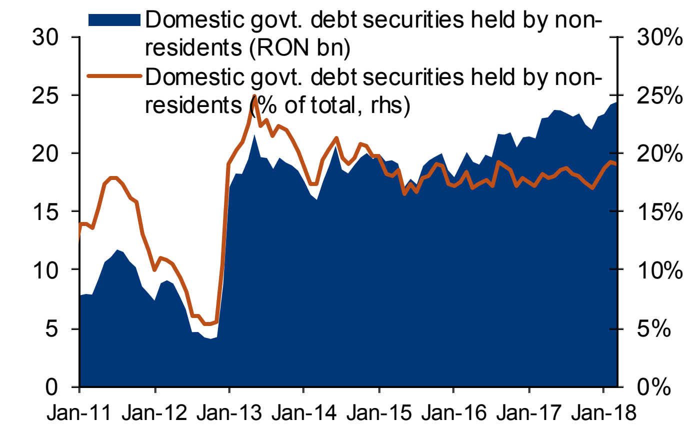
Settlements occur via the SaFIR, which is the central and sole house for settlement and clearing operations for T-bills and bonds.

Chart 122: Distribution of government securities holdings



Source: Ministry of Finance

Chart 123: Foreign holdings of local currency government debt securities



Source: Ministry of Finance

Table 125: Vital statistics and characteristics of the Romania's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
RON						
Spot	RON Spot	USD1bn	USD20mn	RON 0.001	EURRON=	▪ EUR/RON dominates trading
Forwards	Forwards & Swaps	USD0.5-1bn	USD20-30mn	RON 0.001	EURRONFWD=	▪ Forwards are liquid up to 1 year.

Source: BofA Merrill Lynch Global Research, Reuters

Table 126: Summary of Romania bond markets and products

Instrument	Treasury bills	Government bonds
Issuer	Ministry of Public Finance	Ministry of Public Finance
Currency	RON	RON
Principal	RON 5,000	RON 5,000
Tenor	182d, 201d, 327d, 364d	2-15 years
Interest rate/coupon	Issued at discount	Fixed
Coupon Payments	Zero	Annual
Day Count Calculation	Act/360	Act/Act
Amortization Schedule	Bullet	Bullet
Form	Book Entry	Book Entry
Amount outstanding (as of Jun 2018)	RON3.2bn	RON 132.1bn
Secondary Market		
Trading	Interbank market and Bucharest Stock Exchange	Interbank market and Bucharest Stock Exchange
Quotation Convention	Price	Price
Settlement Period	T+0	T+0
Average Daily Turnover	NA	RON100-150mn
Bid/offer spread (0-5Y)	NA	3-4bp
Bid/offer spread (5Y+)	NA	4-5bp
Average trade size	NA	RON10mn
Clearing Mechanism	SaFIR	SaFIR
Major players	Primary dealers	Primary dealers
Trading hours	9:30 – 16:30 (Romania)	9:30 – 16:30 (Romania)
Bidders	All entities or individuals, including non-residents, may participate.	All entities or individuals, including non-residents, may participate.
Regulations		
Restrictions on Foreign Investment	No restrictions	No restrictions
Custodian	Yes	Yes
Withholding Tax	None	None
Capital gains Tax	None	None
Entry/Exit Tax	None	None

Source: BofA Merrill Lynch Global Research, Bloomberg, various local authorities

Russia

Gabriele Foa >>
MLI (UK)

Vladimir Osakovskiy
Merrill Lynch (Russia)

Overview

The Russian economy remains in recovery mode and is expected to grow by modest 1.5% this year and 1.2% in 2019. The initial recovery was driven by robust exports growth, as drastic RUB depreciation has boosted corporate profits and investment. Profits started to weaken in 2017, which might start to slow investment growth. However, tight labor markets due to labor supply constraints should continue to support consumer spending, which we expect to be the key growth driver in the next 1-2 years.

The longer-term economic outlook might start to change with the latest measures, which aim to boost economic growth. Thus, the government has announced a steady increase of the pension age as well as modest 0.5% of GDP in fiscal easing, from next year, which should help accelerate headline growth. At the same time, the fiscal policy will shift to infrastructure spending from a primarily social focus over the past six year. All of this, we think, should help to raise Russia's weak potential growth, helping to reduce risks to the CBR's 4% inflation target in the longer term. As a result, Russia should still have a potential for further monetary easing in the longer term.

Politics and oil prices remain the most important headline risks to Russia's economic and market outlook, as potential further deterioration of Russia's relations with the West could renew economic pressure, further undermining investment and boosting capital outflows. Similar pressure could arise in the case of a renewed decline in oil prices. Likewise, the potential normalization of relations with the West or a further recovery in oil prices could help to accelerate growth and capital inflows to the market.

Central Bank of the Russian Federation

Objectives

The Central Bank of the Russian Federation (CBR) states that the primary focus of its monetary policy is to maintain price stability within the broader inflation-targeting framework. However, the monetary policy's Constitutional mandate states that the CBR is primarily responsible for maintaining the stability of the RUB, while the legal objective is also aimed at the development and strengthening of the national banking system, national payment system, and the national financial market of the Russian Federation. The law does not give the CBR any direct mandate to address inflation or support growth and employment.

Despite its legal mandate, sharp market volatility in 2014 and 2015 has forced the CBR to abandon all forms of control over FX, pushing it to focus entirely on inflation-targeting and economic growth issues. Such an approach is justified by the idea that credible inflation-targeting also creates conditions for a sustainable stabilization of the currency in the longer term.

Table 127: Key facts

Name	The Central Bank of the Russian Federation (Bank of Russia)
Founded	13 July 1990
Governor	Elvira Nabiullina
Board members	15 (actual 12)
Autonomous	Yes
Government representative on board	No
Terms	5 years
Inflation target	Yes; 4% from 2017
2018E inflation	3.6% eop; (BofAML estimate)
Latest move	25bp hike of the key rate; (14 Sep 2018)

Source: BofA Merrill Lynch Global Research, Central Bank of Russia

Table 128: Key links*

- Main page
- Board members
- Monetary Policy Report
- Press Releases
- Calendar
- Statistics
- Reports
- Legal framework
- English version
- Ministry of Finance
- National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

The bank is following macroeconomic developments quite closely, providing its own estimates of potential GDP and monitoring inflationary expectations, among other actions.

Besides monetary policy, the CBR acts as a manager for the country's international FX reserves, including government fiscal reserves, which are included in the country's total FX reserves; a lender of last resort to local credit institutions and the local deposit insurance agency; as well as a fiscal agent for the government. The CBR is also responsible for regulating and supervising the entire Russian financial industry, including the banking sector, non-government pension funds and insurance companies, as well as financial services companies.

Legal framework

The status, purpose, function, and power of the Central Bank of Russia are stipulated by the Constitution of the Russian Federation and by the Federal Law "On the Central Bank of the Russian Federation (Bank of Russia)" #86-FZ from 10 July 2002, including the latest amendments from 4 June 2018. A key element of the CBR's legal status is its independence, which implies, above all, that the central bank is a special public and legal institution with monopoly rights to issue currency and organize its circulation.

Decisions

All Central Bank of Russia decisions need to be approved by the Board of Directors, the bank's highest authority. The existing legal framework allows for 15 permanent board members, including the chair; currently, the board has only 12 appointed members, including the chair. The chairman of the board is nominated by the president and appointed by the State Duma for a five-year term and for no more than three consecutive terms. All other board members are nominated by the chairman in coordination with the president and appointed by the State Duma with a simple majority vote.

The board makes decisions by a majority vote of the members present at the meeting, with a quorum of eight. The chairman or an appointed replacement must be present at the meeting or delegate their authorities to their representative. If the votes are divided equally, the chairman, or the person representing the chairman, has the deciding vote.

The current board

Central Bank of Russia Board Chair Elvira Nabiullina reiterates that the central bank will maintain full inflation-targeting mode to keep inflation at around 4%.

The CBR board is widely considered to be rather hawkish given existing economic weakness. The CBR maintains its view that potential economic growth in Russia has slowed dramatically, so monetary support could compromise inflation-targeting. It continues to point to the need for structural economic reforms as the key to accelerating economic growth. At the same time, the CBR has been involved in a major banking sector reshuffle through the closure of a number of smaller banks, some of which were involved in money laundering. The move is part of the broader drive against persistent structural capital flight from Russia, which appears to have started to take a toll on illegal outflows, despite considerable resultant tensions in the banking sector.

Monetary policy regime and instruments

The Central Bank of Russia has effectively completed its transition to a fully floating FX and inflation-targeting regime. In the absence of a legal inflation-targeting mandate, the CBR is using its long-term inflation forecast (currently set at 4% from 2017) as its long-term inflation target. The CBR hiked its rates significantly in late 2014, at least partly to stem pressure on the FX, given the spike in political risks and market volatility due to the crisis in Ukraine. However, the hikes were largely due to the resultant inflationary risks and were withdrawn as market and inflationary pressures receded.

The CBR's main operational lending facility is the direct auction repo operations, which are offered against approved collateral within announced limits in ON and one-week durations at the key policy rate. One-week auctions are the key policy instrument. The CBR also offers a standby fixed repo facility, FX swaps and three-month loans backed by eligible non-market collateral (typically loans and guarantees, registered with the CBR) at higher rates. In addition, it retains the option of unsecured lending, which it used during the 2008-2009 crisis but which suspended since late 2010.

On the liquidity absorption side, the CBR accepts ON and one-month deposits through the standby facility at the depo policy rate. On top of that CBR also absorbs liquidity

Table 129: CBR Board members

Name	Date originally appointed	Current term ends	Term limit ends	Background	Known policy stance
Elvira Nabiullina	Jun 2013	Jun 2018	Jun 2028	Chair. PhD-equivalent degree earned in 1990. Formerly, chief economic advisor to the president, as well as minister of Economic Development from 2007-2012.	As economic minister, Nabiullina consistently advocated for aggressive fiscal and monetary support to increase economic growth, and was involved in setting regulated tariffs (the largest non-monetary component of CPI). However, as CBR chair, Nabiullina has strongly supported inflation targeting mandate, calling for structural economic reforms as a pre-condition for monetary stimulus.
Dmitry V. Tulin	Jan 2015	Jun 2020		First deputy chair in January 2015. PhD in economics. Worked as a Deputy Chair of the CBR in 1991-1994 as well as in 2004-2006, and as an executive director from Russia at the IMF in 1994-1996. Also held senior positions in EBRD, Deloitte and Touche in Moscow, VEB among others.	As a first deputy chair, Dmitry V. Tulin is responsible for the oversight of the banking system, financial stability issues and banking sector consolidation
Ksenia Yudaeva	Sep 2013	Oct 2018		First deputy chair. PhD in economics from MIT. Formerly chair of the Expert Department of the Presidential Administration; also worked as an expert at Carnegie Center for Strategic Research and has experience in banking.	As a first deputy chair, Yudaeva is responsible for the monetary policy and analytical support of the CBR – research, economic modelling, cooperation with international agencies as well as development of statistics. Before joining the CBR called for more accommodative policy to support growth, but has fully embraced hawkish inflation targeting since joining the board.
Olga N. Skorobogatova	Dec 2016	Dec 2021		First deputy chair. MBA; before joining the CBR held various managerial position in the commercial sector, mainly in operations	Not directly involved in monetary policy setting, as Mrs. Skorobogatova primarily concentrates on payments, operations, IT and security
Sergey Shvetsov	2011	Oct 2018		First deputy chair since 2013. A longtime CBR associate of over 20 years; deputy chair from 2011-2013.	Previously one of the main advocates of a more accommodative monetary policy. However, Shvetsov has lost a large part of his influence on the policy, given that he is now focused on financial markets oversight and regulation
Alexey Yu. Simanovskiy	Apr 2011	Oct 2018		Former First CBR deputy chair and now an advisor to the Chair since October 2016. PhD in economics. Longtime associate with over 24 years of experience at the CBR.	Not directly involved in monetary policy setting, as previously used to concentrate on the issues of banking sector supervision and oversight, cooperation with Basel committee.
Vladimir Chistyukhin	Oct 2013	Oct 2019		Deputy chair since February 2014. Reports directly to Sergey Shvetsov. With the CBR since 1995.	Not directly involved in monetary policy setting, as Chistyukhin concentrates on the supervision of financial markets, mutual funds and insurance industries and a subordinate to Mr. Shvetsov.
Sergey M. Ignatiev	Mar 2002	Oct 2018		Advisor to the chair. Longtime CBR chairman (2002-2013). PhD in economics, associate professor. Also ex-deputy finance minister (1993-1996) and deputy economic minister (1997-2002).	Throughout all of his terms, Ignatiev continuously advocated for a strong anti-inflationary bias in the policy.
Nadezhda Yu. Ivanova	Apr 1995	Oct 2018		Deputy chair. Director of the Bank of Russia General Economic Department. Reports directly to Kseniya Yudaeva. With CBR since 1975, well before its inception. From 1995, director of the CBR's Central Economic Department.	Responsible for the organization and implementation of CBR's operations with non-market collateral, CBR deposit operations in RUB as well as methodology. Directly subordinate to Mr. Tulin
Vasiliy Pozdyshev	Jun 2015	Jun 2020		Deputy chair since 2014. Graduate of MSU, Paris-IX Dauphine and Ecole Nationale d'Adminstration. Held senior positions in Cetelem Groupe Paribas in France and Russia, as well as in Sberbank.	Not directly involved in monetary policy setting, as Pozyshev concentrates on the issues of banking supervision and oversight, and is involved in the development of CBR's policy in these areas. Subordinate to Mr. Simanovsky
Olga V. Polyakova	Dec 2016	Dec 2021		Deputy chair. A long time CBR associate and was the head of CBR internal audit department since 2011. Head of CBR regional office in the Central Federal district	Not directly involved in monetary policy setting, as concentrates mainly on the internal audit issues
Dmitry Skobelkin	Oct 2013	Oct 2018		Deputy chair. With CBR since 1997. Comes from the commercial banking industry.	Not directly involved in monetary policy setting, as Skobelkin concentrates on FX control, AML and financial monitoring issues.

Source: CBR, BofA Merrill Lynch Global Research through weekly deposit auctions at the key rate. The limits on such deposits are announced on the weekly basis. The CBR also places floating-rate short-term OBR bills, with yield pegged to the key rate, as a way to absorb excessive RUB liquidity.

Fiscal policy acts as an important source of RUB liquidity for the economy, given that the government is using its fiscal reserves to finance the budget deficit. Fiscal reserves are kept in FX, which is sold directly to the CBR. As a result, the CBR is effectively providing the government with a new RUB liquidity, forcing active sterilization operations to offset such budget spending. On top of that, an additional liquidity provisioning option exists in the form of deposit auctions by the Ministry of Finance, which places fiscal liquidity excesses as short-term deposits through auctions to a list of qualified banks.

The liquidity is offered and accepted at the rates linked to the key policy rate (currently 10.5%), as spreads for various policy instruments are fixed to the key rate. Mandatory reserves requirements are set equal for all liabilities in RUB at 5.0% starting from August 1, 2016. The mandatory reserves requirements for retail FX liabilities are set at 6% and at 7% for all other FX liabilities.

Exchange rate regime and instruments

In December 2014, the CBR abandoned its earlier policy of managed FX float. As a result, current RUB volatility does not have any formal limits and does not trigger any FX interventions. However, the CBR retained the right to intervene in the FX market at any time if deemed necessary from a financial stability perspective. Apart from formal FX intervention rules, the CBR retains a capacity to be a last-resort provider of FX for local banks and corporates, which have restricted access to external markets due to sanctions. The FX repo mechanism is the main tool for such FX liquidity provisions. FX liquidity was offered at regular weekly auctions for one-week, one-month and one-year durations against the same collateral as for regular RUB liquidity provisions. The cost of such funding is linked to LIBOR and announced with a formal press release. All such operations have been suspended since early 2017, as all such earlier loans have been repaid.

Starting from February 2017, the CBR is the primary dealer for FX purchases on behalf of the Ministry of Finance. As part of the broader fiscal rule framework, the Ministry of Finance is using all additional oil and gas revenues from oil prices in excess of $40/bbl threshold to buy FX and keep it in the National Wellbeing Fund. CBR has a discretion on the way how such operations are conducted – either off-market from CBR's FX reserves, or through market purchases with the use of tax proceeds and existing RUB liquidity, which makes them neutral from the RUB liquidity perspective.

The size of planned FX purchases is announced by the Ministry of Finance in RUB terms on the 5th business day of each month for the next business month, based on current oil prices and projected oil and gas revenues of the Federal Budget. The CBR purchases FX through the open market operations in equal sizes on a daily basis.

Table 130: Meetings and releases in 2018

	Monetary policy meeting	Economic report
Jan	-	
Feb	Feb 9	-
Mar	23 Mar	Monetary Policy Report
Apr	27 April	-
May	-	-
Jun	15 Jun	Monetary Policy Report
Jul	27 Jul	
Aug	-	-
Sep	14 Sep	Monetary Policy Report
Oct	26 Oct	
Nov	-	-
Dec	14 Dec	Monetary Policy Report

Source: BofA Merrill Lynch Global Research, Central Bank of Russia

From August 2018 such operations were suspended until the end of 2018 due to increased market volatility. The CBR has stated that FX purchases for MinFin will continue, but will be financed off-market from CBR's FX reserves. The decision on the resumption of market purchases will be made later in the year and it will take into account market conditions. CBR also stated that it is intent to fully catch up with the delayed FX purchases in 2018, but any such purchases will be done in 2019 or could be even later.

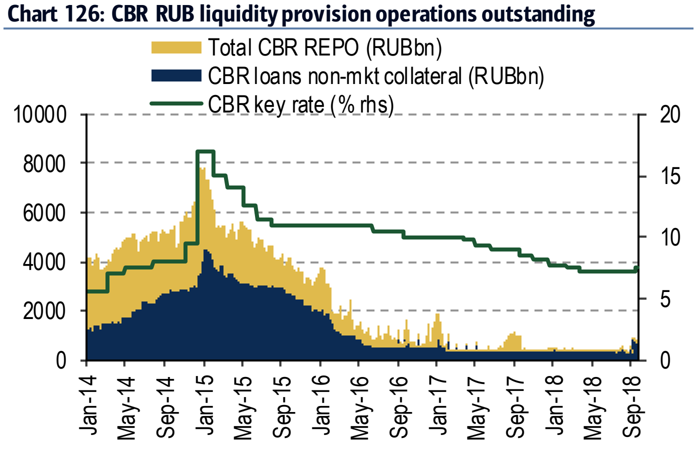
Credit regulation functions

The Central Bank of Russia sets reserve requirements, regulates interbank credit and has extensive powers for the overall supervision of the banking system from a regulatory perspective. The CBR does not have authority to impose caps on interest rates, but it does that on a non-binding recommendation basis.

Current policy stance

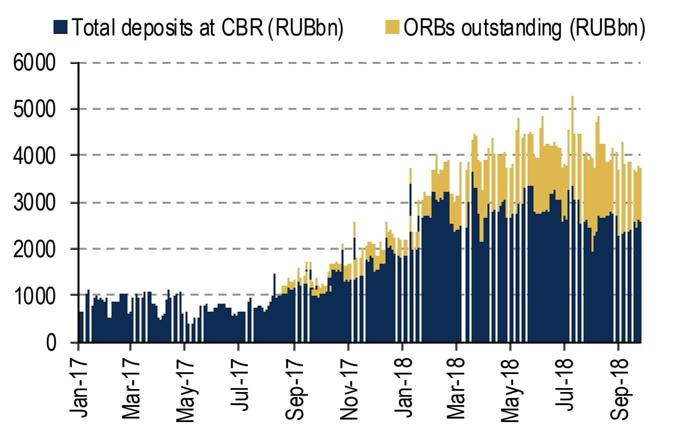
The Central Bank of Russia has hiked its key rate by 25bp to 7.5% at its Monetary Policy Committee meeting on 14 September after hiking its 2019 inflation outlook. Thus, the CBR now expects that inflation might accelerate to as high as 6% in early 2019 on the back of a planned VAT hike as well as relatively weak harvest in 2018. However, given a one-off nature of all main inflationary shocks in 2019, the inflation is still expected to return to 4% target from 2020. At the same time, we note that such aggressive inflation outlook for 2019 also limits the risk of further rate hikes in the near future, as inflation is yet to reach 4% target. Moreover, the CBR has also commented that it could actually

Chart 126: CBR RUB liquidity provision operations outstanding



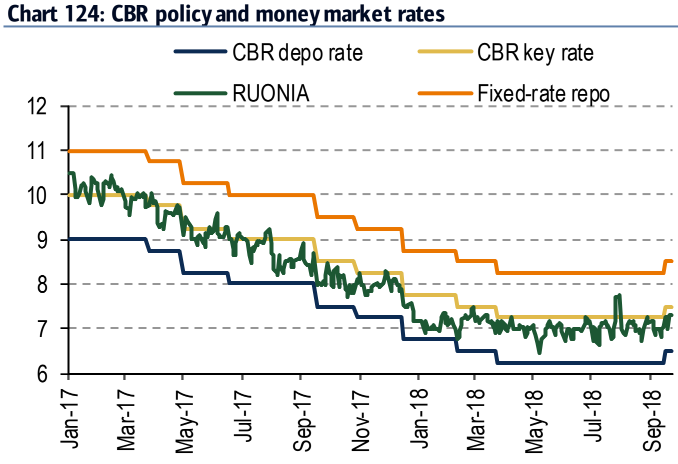
Source: CBR

Chart 127: CBR RUB liquidity absorption operations outstanding



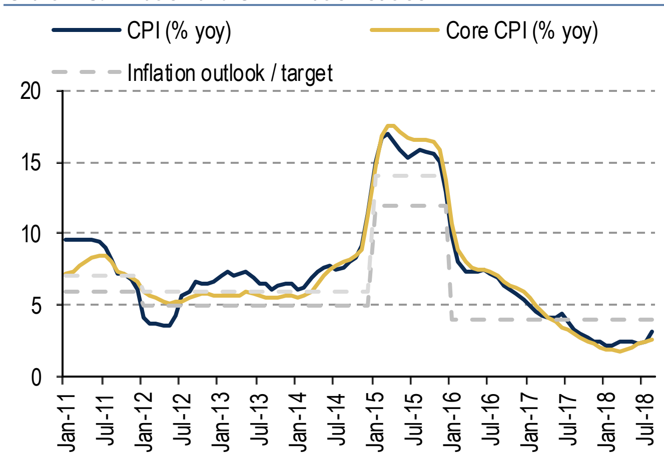
Source: CBR

Chart 124: CBR policy and money market rates



Source: CBR, Bloomberg,

Chart 125: Inflation and CBR inflation outlook



Source: CBR

resume “normalization” of its monetary policy as soon as in late 2019. The CBR has also stated that all other latest policy initiatives by the government should help to boost Russia’s weak potential growth and thereby reduce inflationary risks in the longer term. This might suggest the easing cycle has more room to go starting from late 2019.

Meetings, data and information dissemination
The Central Bank of Russia publishes its schedule of planned policy meetings for the coming year late in the previous year. Monetary policy minutes are not published; instead, the CBR publishes an official policy statement right after the meeting. Decisions made by the Board of Directors concerning any changes are published in the official publication, *The Bank of Russia Bulletin*, within 10 days.

Fiscal policy

Facing sharp decline in oil prices in 2014-2016, the Russian government was forced to implement a new budget rule and a three-year budgeting cycle, which was adopted starting from in the 2017 budget cycle. According to the new rules, the new budget spending outlook will likely ensure a fully balance budget on the primary basis at a conservative US$40/bbl Urals oil price outlook starting from 2019 onwards. Revenue shortfalls or excesses in case of oil price deviations from this benchmark will be financed from or saved to the reserve fund.

Fiscal consolidation targets for this rule were reached in 2018, as the government is expected to run a budget surplus of around 1.5% of GDP, given that actual oil prices will exceed budgeted parameters. On top of the fiscal rule, the government has also announced plans to allow for a modest 0.5% of GDP fiscal easing from 2019 to permit additional infrastructure spending out of the Infrastructure Development Fund. The fund will operate for six years. However, its creation effectively suggests a widening of the projected primary budget deficit from 0% to 0.5% of GDP over the period, at the threshold oil $40/bbl prices. The actual budget balances will most likely remain in strong surplus due to much stronger oil prices.

As a result of this fiscal rule in the conditions of a much higher oil prices, the government will be continuing to accumulate additional oil revenues received from oil in excess of $40/bbl oil into the Wellbeing fund US$77bn, as of 1 July 2018). As a result, the government plans to borrow RUB1400-1600bn (about 1.8% of GDP) a year, despite a running budget surplus. The latter will be primarily placed on the local market, with a largely neutral external issuance plans.

Bond markets

The Russian sovereign bond market is about US$119bn. High banking sector liquidity and the government preference for domestic financing suggests the market will grow further over the next few years. The Ministry of Finance projects net domestic borrowing to increase from RUB1tn in 2018 to RUB1.7tn in 2021, as new infrastructure investments add to budget deficit needs. Still, although increasingly liquid and mature, Russia’s local market growth is constrained by a moderate budget deficit and low government debt.

OFZ bonds are regarded as benchmarks and provide guidance for the rest of the domestic debt market. They represent the vast majority of Russian local markets (face value = US$110bn). Average trading volumes in OFZs are around US$300mn per day. Bid-offer spreads are roughly 2-3bp. Liquidity management is delegated to the central bank, which offers floating rate bills called OBRs (see Monetary Policy section above). OBRs add another US$27bn to the headline number for local debt.

CPI-linked debt. MinFin has initiated a new CPI-linked OFZ issue in the middle of 2015 placing 8Y bond indexed to CPI. Currently, there is about US$3.7bn in such bonds outstanding. Linkers are not too liquid and the recent disinflation trend did not help their popularity.

Local/external debt ratings

	Local	External
2018	Ba1/BBB/BBB-	Ba1/BBB-/BBB-
2017	Ba1/BBB-/BBB-	Ba1/BB+/BBB-
2016	Ba1/BBB-/BBB-	Ba1/BB+/BBB-
2015	Ba1/BBB-/BBB-	Ba1/BB+/BBB-
2014	Baa1/BBB/BBB	Baa1/BBB-/BBB
2013	Baa1/BBB+/BBB	Baa1/BBB/BBB
2012	Baa1/BBB+/BBB	Baa1/BBB/BBB
2011	Baa1/BBB+/BBB	Baa1/BBB/BBB
2010	Baa1/BBB+/BBB	Baa1/BBB/BBB
2009	Baa1/BBB+/BBB	Baa1/BBB/BBB
2008	Baa1/BBB+/BBB+	Baa1/BBB/BBB+
2007	Baa2/A-/BBB+	Baa2/BBB+/BBB+
2006	Baa2/A-/BBB+	Baa2/BBB+/BBB+
2005	Baa2/BBB+/BBB	Baa2/BBB/BBB
2004	Baa3/BBB-/BBB-	Baa3/BB+/BBB-
2003	Baa3/BB+/BB+	Baa3/BB/
2002	Ba2/BB+/BB-	Ba2/BB/
2001	Ba2/B+/B	Ba3/B+/
2000	Caa2/B-/B-	B2/B-/

Source: BofAML Global Research, Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield
Settlement: T+2 main, T+0 and T+3 on demand
Basis: Act/365
Coupon frequency: Semi-annual

IRS

Fixing: 3m Mosprime
Coupon frequency: Annual fixed Act/Act, quarterly floating Act/Act

CCS

Fixing: 3m USD LIBOR
Coupon frequency: Annual fixed Act/Act, quarterly floating; initial/final principal exchange

Bloomberg pages

RUB Curncy ALLQ<GO> FX rates
OTC RUB<GO> - Market monitor
CBR<GO> - Central bank monitor

Reuters pages

FX: RUBMCMEEMTA=
Bonds: 0#RUTSY=MM

Useful websites

Bank of Russia
www.cbr.ru

Ministry of Finance
www.minfin.ru

Statistics office (Rosstat)
www.gks.ru

Moscow stock exchange
www.moex.com

*Links are to third-party websites, and do not contain BofAML Global Research.

Floating rate debt. Floating rate and step coupon bonds (OFZ-AD) constitute around 29% of the bond market. The non-fixed rate share in total issuance increased strongly in late 2014, as Russia issued around RUB1tn of floating rate coupon bonds in December 2014 as part of its financial stability program.

Fixed coupon debt. The remaining 68% of the bond market has a fixed coupon. The most liquid part of the curve has traditionally been the belly (2-7y), but the pick-up in international presence experienced in the past two years improved liquidity in duration too. The curve extends out to 18 years but liquidity peaks on the 10y tenor.

Auction and placement mechanism. The average maturity of domestic debt is 6.7 years for the whole OFZ market. The Ministry of Finance has a strategic goal of keeping average duration at 5y, but issuance trends respond to market conditions. In the past year, long-end issuance has increased to accommodate non-resident demand. The Ministry of Finance has established benchmark bonds at standard maturities (3, 5, 10, 15, and 30 years) and in volumes sufficient to enhance liquidity. New issuance is spread across the curve, with 3y, 5y, 7y, 10y and 15y all on offer.

The Ministry of Finance issues bonds in competitive auctions through the CBR. A quarterly schedule is provided on its website at the start of the quarter and details are provided the day before the auction, including expected yields of the securities to be auctioned. Only dealers can participate in the auctions.

Derivatives market

Foreigners access the IRS market mostly via cross-currency swaps, using the US 3m LIBOR as fixing. Liquidity is good up to 5y, and materially declines afterwards. 1y and 2y are the most liquid tenor (and most popular among foreigners). Basis swaps are less liquid but trade. The onshore market fixes against the 3m Mosprime but access to foreigners is more limited, so it is less liquid and trades mostly domestically.

FX market

The RUB has been fully convertible since 2006. Nowadays, the liquidity gap with the rest of the emerging markets has closed, and it is one of the most traded high-yielding currencies. Still, some residual hurdles exist. RUB/USD futures can be traded on CME, where it is also possible to do block trades, minimizing counterparty risk. Trading volumes average US$5-7bn per day with ticket sizes at US$10-25mn on average. Bid-offers are about 2-8 kopecks. The RUB is now deliverable but NDFs still exist and are actively traded, representing a decent share of the market. The NDF market share tends

Table 131: Summary statistics of Russia derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-Ask spread	Bloomberg / Reuters Reference
Cross currency swaps				
1-year	35K DV01	USD5K-25K DV01	3-5bp	OTC RUB / RUBVIEW
2-year	20K DV01	USD5K-25K DV01	4-5bp	OTC RUB / RUBVIEW
5-year	15K DV01	USD5K-25K DV01	4-8bp	OTC RUB / RUBVIEW
Basis swaps				
	USD10 DV01	USD5K-10K DV01	6-10bp	OTC RUB / RUBVIEW

Source: BofA Merrill Lynch Global Research

to increase with volatility. The best liquidity is available from 10:00-18:30 when MOEX is open. NDFs implied yields tend to spike faster than forwards in volatile times due to pick-up in speculative activity.

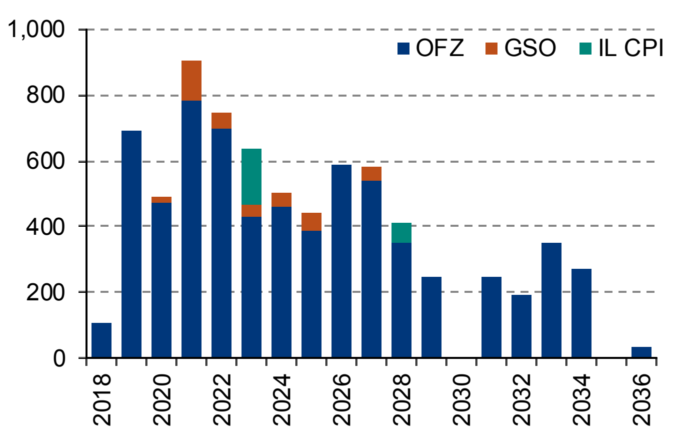
The CBR retains an option to carry out ad hoc interventions during the regular trading day, partly aiming to rebuild part of its FX reserves lost during volatile 2014-1Q15. However, such purchases have been on hold since July 2015, while the CBR has stated on various occasions that it does not have plans to re-start such purchases in the near future. Apart from the CBR, Russian MinFin has started its own purchases of FX from February 2017. According to the new fiscal rule provisions, MinFin will be using all additional oil and gas revenues in received from oil prices of over projected threshold level ($40/bbl in 2017) to buy FX on the market. Purchases are done on the daily basis at a fixed level determined as a daily average of projected monthly revenue excesses. All FX proceed will be stored in the Reserve Fund in the end of the year. Currently, the MinFin is buying roughly RUB115.8bn per day.

Table 132: Vital statistics and characteristics of Russia's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
RUB						
Spot	RUB Spot	USD5-7bn	USD10-25mn	RUB 0.02-0.08	RUB=	▪ Mainly trades against USD.
Forwards	Forwards & Swaps	USD1.5-2bn	USD10-25mn	RUB 0.1	RUBFWD=	▪ Liquid up to 1 year.
Options	FX Options	USD0.3bn	USD50mn	0.5 vol	RUBVOL	▪ Options available till tenor of 5 years but are liquid up to 1.

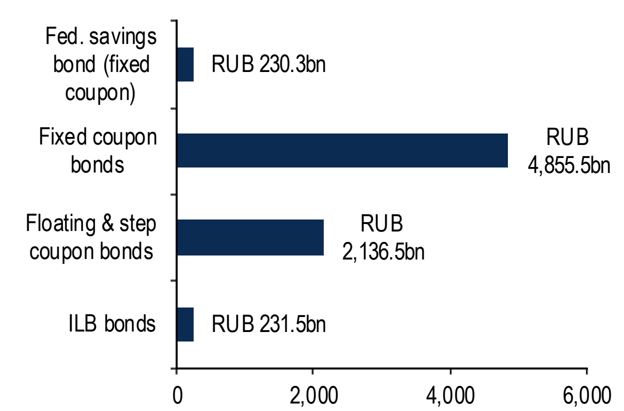
Source: BofA Merrill Lynch Global Research, Reuters

Chart 128: Maturity profile of outstanding Russian government securities (RUB bn)



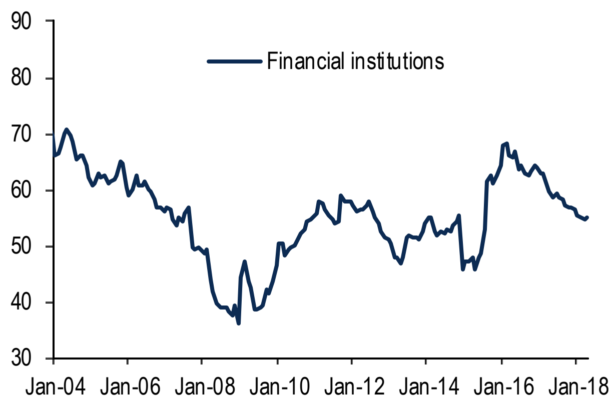
Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 129: Outstanding RUB debt types by category (latest)



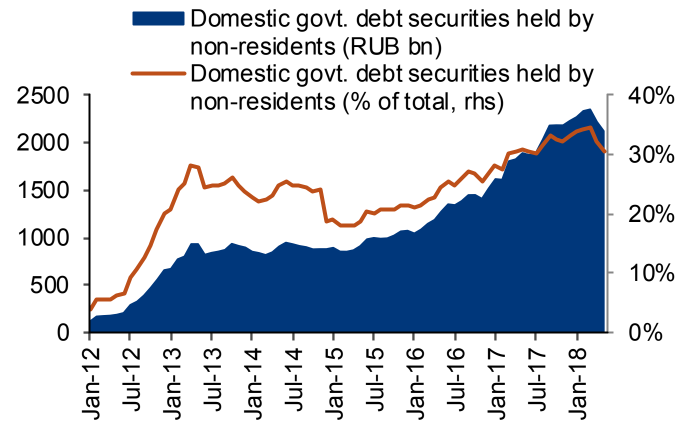
Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 130: Financial Institutions holdings of government securities



Source: BofA Merrill Lynch Global Research, Haver

Chart 131: Financial Institutions holdings of government securities



Source: BofA Merrill Lynch Global Research, Haver

Investor base

Domestic banks dominate the Russian bond market, holding a large part of outstanding OFZs, corporate bonds and municipal bonds. Although domestic banks reduced their allocation to OFZs in a bid to make way for loans, they still account for a sizable part of the holdings. The other major participant in the OFZ bond market is the mandatory pension savings part of the local pension system, which is heavily invested in the local bond market. Large parts of pension savings are controlled by Vnesheconombank. Non-resident OFZ holdings have grown sharply since Euroclear-Clearstream access was granted in early 2013, growing single digits to over 25% of the markets in early 2014. Political crisis of 2014-2015 has pushed it back to 17%-18% by early 2015, but the share has resumed expansion from late 2015 to reach an all-time high of 34.5% of the market in March 2018. Currently the share stays at 27.6% as of June 2018.

Russia's institutional investor base is small in absolute size and relative to GDP. In our view, the key reasons are the boom-bust cycles of the past 20 years and the public's limited trust in the rule of law. These limitations undermined attempts to encourage more personal pension saving in recent years. As a result, we anticipate macroeconomic stabilization and an improvement in the judicial system are likely to be the most important factors determining growth of domestic assets under management.

Russian mutual funds date back to 1996, but it was only in the 2000s and with the recovery of the Russian stock market from the 1998 crisis that such funds received a major boost. The annual growth rate was as high as 90% between 2001 and 2009, but by now open-end and interval funds, which are the only funds actively investing in the market, still have small assets under management.

Historical data and details about asset allocation are limited. Pension funds, where some detail is available, primarily invest in fixed income (more than 80% of AUM since 2005), but equity allocations could increase substantially following a recent loosening of legal constraints to their investment declarations. The majority of total mutual fund industry AUM is concentrated in closed-end funds, which are largely invested into illiquid real estate and other assets.

The mandatory pension system in Russia consists of two pillars: the pay-as-you-go and savings components. However, the savings component has been on hold since 2014 as the government has temporarily started to use mandatory savings proceeds to fund the deficit of the pay-as-you pillar. The freeze has slowed growth of the local pension fund industry. As of year-end 2016, mandatory pension savings reached RUB4,124bn in total size, of which VEB manages RUB1,967bn, with a large part of it invested in OFZ and other state debt. The VEB's investment declaration suggests a minimum 50% share of the total portfolio in government debt in RUB and foreign currencies, with no restrictions on the maximum. This puts the domestic pension funds industry among the most important and reliable buyers of the OFZ market.

Rules, regulations, capital control and taxation

There are several hindrances to owning domestic assets, although a significant effort has been made to improve ease of access. Purchase and sale of foreign currency can be done through MOEX via Russian authorized banks and local brokers, and there is no need to maintain accounts locally, unless RUB-based trades are carried out.

Government bonds have traded in the main market section of MOEX since 2012, which allows for a larger market and simpler trading procedures. The trading rules for OFZs and corporate bonds are now synchronized so that OFZs can be traded over the counter as well. In addition, bonds are allowed to settle on Euroclear/Clearstream. Also, MOEX is considering ways to cut down the number of trading accounts needed and merging settlement systems. It has already extended the period of settling trades to T+2.

Clearing and settlement

Trading occurs on MICEX. The National Settlement Depository (NSD) serves as the settlement depository institution for all transactions with Russian securities on MOEX as well as OTC.

Table 133: Summary of Russia bond markets and products

Instrument	Government bonds (OFZs)
Issuer	Ministry of Finance
Currency	RUB
Principal	RUB1,000 (par)
Tenor	3-30 years
Interest rate/coupon	Fixed, floated, CPI-linked
Coupon Payments	Annual, semi-annual
Day Count Calculation	Act/365
Amortization Schedule	Bullet, sinkable
Form	Registered
Amount outstanding (as of Jun 2018)	RUB 7,453.8bn
Secondary Market	
Trading	OTC and Stock Exchange (MOEX)
Quotation Convention	Price
Settlement Period	T+1 (MOEX) and T+2 (Euroclear)
Average Daily Turnover	USD 200-300mn
Bid/offer spread (0-5y)	2-3bp
Bid/offer spread (5y+)	2-3bp
Average trade size	USD 5mn
Clearing Mechanism	MOEX/Euroclear/Clearstream
Major players	Primary dealers
Trading hours	10:30 – 18:30 (Moscow)
Bidders	Mostly local banks and investment funds
Regulations	
Restrictions on Foreign Investment	No remote membership
Custodian	National Settlement Depository (NSD)
Withholding Tax	State debt is exempt from the tax
Capital gains Tax	0%
Entry/Exit Tax	None
Primary Auctions	
Auction Style	Competitive tender in a multiple price format via primary dealers
Average Issue Size	RUB15bn
Minimum Amount of Tender	None

Source: BofA Merrill Lynch Global Research

South Africa

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MLI (UK)

Ferhan Salman
MLI (UK)

Rukayat Yusuf >>
MLI (UK)

Overview

South Africa is a small, open, commodity-based economy. Over the past two decades, it has become increasingly services oriented, with manufacturing and mining in relative decline. Together with prudent and countercyclical macro policy, this has helped dampen growth fluctuation since 1995. That said, since the 1994 political settlement, South Africa has also become more exposed to the global trade cycle as it reintegrated into the world economy. We believe trend growth following the global financial crisis has fallen to 2% given less favorable global tailwinds from commodities and credit. Near term, South Africa faces headwinds from heightened political uncertainty, credit downgrades and infrastructural bottlenecks.

Objectives

The South African Reserve Bank (SARB) formulates and implements monetary policy; issues banknotes and coins; supervises the banking system; ensures the effective functioning of the national payment system (NPS); manages official gold and foreign exchange reserves; acts as banker to the government; administers the country's remaining exchange controls; and acts as lender of last resort during exceptional circumstances.

Since 2000, the SARB has targeted an inflation range of 3-6% on a medium-term horizon, set by the National Treasury after consultation with the SARB. In practice, SARB aims for the mid-point in the range to anchor expectations. In February 2010, the Treasury clarified the SARB's "flexible" inflation-targeting mandate. This allows the central bank to look through temporary deviations in inflation from the target range that may have resulted from a supply shock. The stated aim is to allow for interest rate smoothing over the cycle, which could mitigate any output variability from the monetary policy response to the shock.

Legal framework

The South African Reserve Bank was established in 1921 after Parliament passed the Currency and Banking Act, 1920 (Act No.31 of 1920). The SARB's operational independence is guaranteed constitutionally. Currently, Sections 223 to 225 of the Constitution of the Republic of South Africa, 1996; the South African Reserve Bank Act, 1991; and the regulations framed in terms of this act provide the framework enabling the SARB's operations. As a result, the bank's independence and autonomy are entrenched in the constitution. In terms of Section 224 of the Constitution, 1996, "the Bank, in pursuit of its primary object, must perform its functions independently and without fear, favor or prejudice, but there must be regular consultation between the Bank and the Cabinet member responsible for national financial matters".

The governor has regular discussions with the finance minister and meets periodically with members of the Parliamentary Portfolio and Select Committees on Finance. Per Section 32 of the act, the bank publishes a monthly statement of its assets and liabilities, and submits its annual report to Parliament.

Decisions

The Monetary Policy Committee (MPC) consists of eight members, and seven positions are filled: the governor, three deputy governors and two other committee bank officials. The MPC meets every two months, with meetings running for two to three days to allow sufficient deliberation. The repo rate decision is usually announced up to 20 minutes into the governor's statement at the press conference. No minutes or voting records are published; however, the number of members in favor of the decision is mentioned in the statement.

The SARB issues quarterly bulletins, biannual monetary policy reviews and six monetary policy statements. Its inflation forecasts are premised on an unchanged interest rate path. So, the SARB makes no assumptions of the future path for interest rates, whether its own or by incorporating market pricing.

The current board

The MPC meetings are chaired by the governor. The MPC consists of eight SARB members: the governor, three deputy governors and four senior officials. Currently, two of the posts for senior bank officials are vacant. The governor and the deputy governors are appointed by the president of South Africa after consultation with the finance minister and the SARB Board of Directors. Terms are five years and members can be reappointed for additional terms not exceeding five years at a time. The remaining members of the board are appointed for three-year terms, also by the president.

Monetary policy regime and instruments

Base rate. The main mechanism used to implement monetary policy is the refinancing system by which SARB provides liquidity to the banks. The primary refinancing operation is the weekly 7d repurchase auction, which is conducted with the commercial banks at the repo (policy) rate determined by the MPC. The SARB lends funds to the banks against eligible collateral. Commercial banks structure their private sector lending around the prime lending rate, which is set at 350bp over the repo rate.

Open market operations. The SARB uses three types of open market instruments to drain excess liquidity, namely debentures, longer-term reverse repos and foreign exchange swaps. The SARB reinstituted its forward book in August 2010, which it had closed in 2004, as a means to counter rand strength. The SARB buys USD spot and sells it forward in order to sterilize the liquidity impact of the spot purchases on the domestic money market.

Lending and deposit facilities. In addition to the main repo facility, the central bank

Table 134: SARB Board members

Name	Date originally appointed	Current term ends	Background	Known policy stance
Lesetja Kganyago, governor	May 2011	Nov 2019	Appointed governor in November 2014. Previously served as deputy governor beginning in May 2011 and Treasury director general from 2004-2011. Current member of MPC, FSC and RMC. Currently, chairperson of the Standing Committee on the Revision of the Banks Act and vice chair of the FSB Standing Committee on Standard Implementation. MSc Economics, LSE.	Kganyago tends to be more hawkish and in his most recent statement has focused on upside risks to inflation from rand weakness, rising oil prices and their likely impact on inflation expectations. The Reserve Bank's Quarterly Projection Model reflects one increase of 25bps in November and two hikes in 2020.
Daniel Mminele, deputy governor	Jul 2009	Jul 2019	Previously SARB's executive general manager for markets from 2005-2009. Current member of MPC, FSC and RMC. Chairs the Reserves Management Committee. Degree in banking (Bankkaufmann). Chartered Institute of Bankers (London).	A recent speech by Mminele focused on key risks to the rand outlook. These include the possibility of accelerated monetary policy tightening by central banks in the advanced economies, particularly in the US; escalating trade conflicts and geo-political developments.
Kuben Naidoo, deputy governor	Apr 2013	Apr 2020	Appointed deputy governor on 1 April 2015, having served as advisor to the governor since 2013. Prior to joining the SARB in 2013, was acting head of the secretariat at the National Planning Commission and spent time at the National Treasury. BSc and postgraduate degree in public management from Wits University and an MBA from University of Birmingham.	Current policy stance unknown
Francois Groepe, deputy governor	Jan 2012	Jan 2022	Non-executive director on the SARB board since 2004. CEO of Media 24 from 2003-2011. He was re-appointed as a deputy governor for a second term on 1 January 2017. Current member of MPC, FSC and RMC. BCom (Hons) and MBA, University of Stellenbosch. Post graduate degree in Tax Law, UCT.	Current policy stance unknown
Rashad Cassim	Mar 2011	Mar 2021	Deputy director general of Economics Statistics, Statistics South Africa 2006-2011. Currently, head of SARB Research Department. Member of MPC and FSC. PhD in economics from UCT.	Current policy stance unknown
Fundi Tshazibana, adviser	Jan 2018	Mar 2021	Previously serves as Alternate Executive Director on the IMF Executive Board, covering South Africa and 22 SSA countries. Before the IMF, served as Deputy Director General of Economic Policy at the National Treasury. Joined the National Treasury in 2003 and holds a Master of Commerce from the University of Natal.	Current policy stance unknown

MPC = Monetary Policy Committee, FSC= Financial Stability Committee; RMC = Risk Management Committee. Source: BofA Merrill Lynch Global Research, SARB offers a range of end-of-day facilities for the commercial banks to square off the daily positions on their settlement accounts; for example, access to their cash reserve balances held with the bank, supplementary repos/reverse repos conducted at the repo rate, and an automated standing facility, whereby the end-of-day balances on the banks' settlement accounts are automatically settled at a rate of 100bp below or above the repo rate.

Table 135: SARB Monetary Policy Committee meetings and releases in 2018

	Monetary policy meeting	Quarterly Bulletin	Monetary Policy Review
Jan	17-18 Jan		
Mar	26-28 Mar	21 Mar	
Apr			10 Apr
May	22-24 May		
Jun		20 Jun	
Jul	17-19 Jul		
Sep	18-20 Sep	14 Sep	
Oct			04 Oct
Nov	20-22 Nov		
Dec		14 Dec	

Source: BofA Merrill Lynch Global Research, SARB

Exchange rate regime and instruments

The South African rand (ZAR) was introduced in 1961, and is currently a fully floating, convertible and deliverable currency. The stated policy of the SARB and Treasury is to increase the level of foreign exchange reserves opportunistically during periods of rand strength. This policy is to help mitigate rand strength, lower volatility and raise the level of reserves.

The SARB uses foreign exchange swap transactions to drain rand liquidity from the market on a temporary basis. These swaps can be used for maturities of up to 12 months, and can be used for normal liquidity management or to sterilize foreign exchange purchases. When the swaps mature, the US dollars are returned to the SARB, which in turn delivers the rand to the counterparties. The bank might opt to roll these swaps for future maturities when they mature. However, shorter-dated swaps are also conducted in the opposite direction; that is, to inject liquidity.

In the past, the SARB bought foreign currency against rand to counterweight investment inflow. But, outright interventions are rare and the SARB follows a less active approach than other countries in EEMEA to intervene in the market.

Credit regulation functions

The South African Reserve Bank's Bank Supervision Department models its regulatory and supervisory framework on: 1) the 25 Core Principles for Effective Banking Supervision, as published by the Basel Committee on Banking Supervision (BCBS); and 2) the Basel II, Basel 2.5 and Basel III frameworks. In terms of the Banks Act, banks are required to hold a prescribed percentage of their total liabilities in cash on their cash-reserve accounts at the bank. The cash reserve requirement is currently set at 2.5%.

Current policy stance

The SARB left rates on hold at 6.50% at its last meeting in September, following 25bp of cuts each in July 2017 and March 2018. We think that despite inflationary risks, the delay in the cyclical recovery would keep the SARB on hold into 2019. This is in contrast to market pricing of hikes in the coming months. The risk to the scenario is the rand depreciating beyond our fair value of 14.50, oil above US$90 and inflation increases above 5.5%.

The impact of VAT so far has been muted. We think that negative output gap continues to weigh on pricing power of producers. Favourable food price developments have also helped offset the impact of VAT. We expect the SARB's statements to become increasingly more hawkish given higher oil prices, rand volatility, above-inflation wage increases and VAT pass-through. This will likely feed into inflation expectations which retracted to 5.2% in Q1 2018 from a peak of 6.3% in Q2 2016.

Meetings, data and information dissemination

At the conclusion of every Monetary Policy Committee meeting, a statement is issued at a press conference run by the governor explaining the reasons for the MPC's policy stance. This press conference is broadcast live on national television.

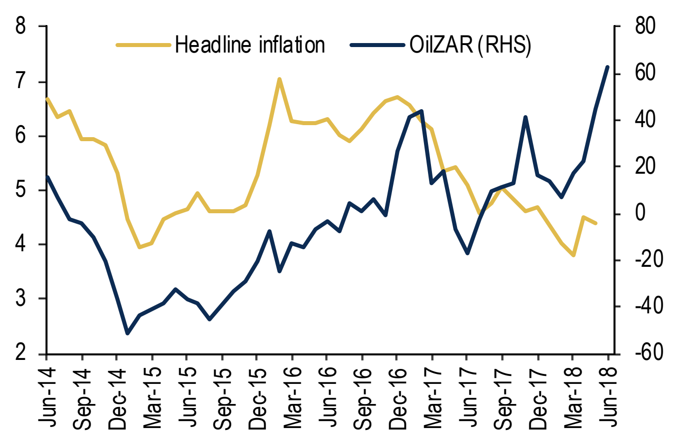
The South African Reserve Bank publishes its Quarterly Bulletin towards the end of each quarter. The Quarterly Bulletin contains a detailed discussion of domestic and foreign economic developments. The SARB also publishes its Monetary Policy Review (MPR) twice a year. The MPR is aimed at broadening the understanding of the intentions and conduct of monetary policy. An assessment of the outlook for the factors that will determine inflation and the bank's forecast of the future path of inflation are provided in the MPR.

The SARB convenes Monetary Policy Forums to develop a better understanding of monetary policy. These forums are held twice a year in South Africa's major centers across all provinces. Representatives of the labor movement, business, government and academic institutions are invited to attend.

Economic structure and outlook

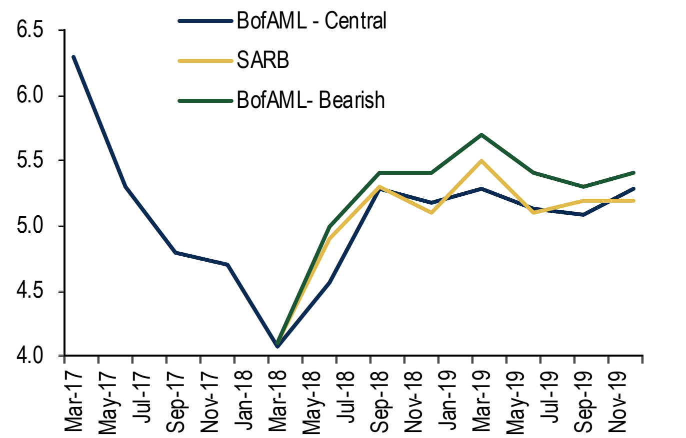
Structural bottlenecks and global factors will keep growth subdued (see Reality Check). We have lowered our GDP growth forecasts to 1.6% and 1.8% for 2018 and 2019 (0.2% revision). Above-inflation wage increases, modest job creation and credit extension

Chart 134: Rand and oil will weigh on inflation (% yoy)



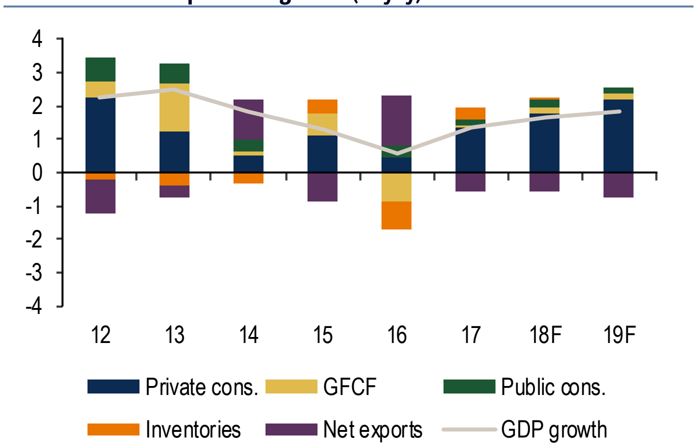
Source: BofA Merrill Lynch Global Research, Haver

Chart 135: Inflation in check for a while but upside risks exist



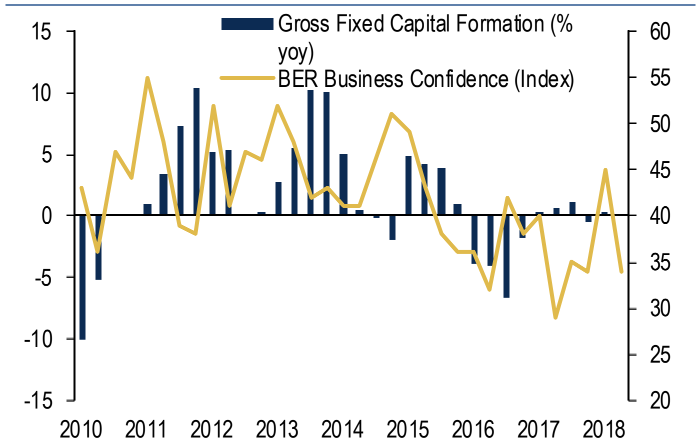
Source: BofA Merrill Lynch Global Research, Haver

Chart 132: Consumption-led growth (% yoy)



Source: BofA Merrill Lynch Global Research, Haver

Chart 133: Business confidence is still weak



Source: BofA Merrill Lynch Global Research, Haver

should support consumption. Delays in reform and low business confidence will weigh on investment. We see ZAR at 13.75 by year-end and 14.0 in 2019E.

Progress has been made on governance changes, the approval of renewable deals and a new mining charter (see South Africa's fighting chance) following Ramaphosa's victory at the ANC elective conference and appointment as South Africa's President. However, more work is needed to relieve bottlenecks created by SOE balance sheets, trimming of provincial and local government departments. Improving infrastructure, business regulations, labour market and fiscal efficiency will take time. We think progress on these will be muted ahead of the 2019 elections given ANC's strive for unity.

We see the fiscal deficit at 3.8% of GDP deficit in 2018. Public wage settlements pose downside risks of 0.1% this year but reaching c.0.6% of GDP in the next three years. The delay in state-owned corporation reform is also likely to weigh on SOC finances. This will increase contingent liabilities or may include some government support. The downside risks to growth could potentially translate into lower budget revenues. However, these risks are unlikely to completely derail consolidation. We therefore think that Moody's will keep its investment grade rating on South African local currency debt.

Bond market

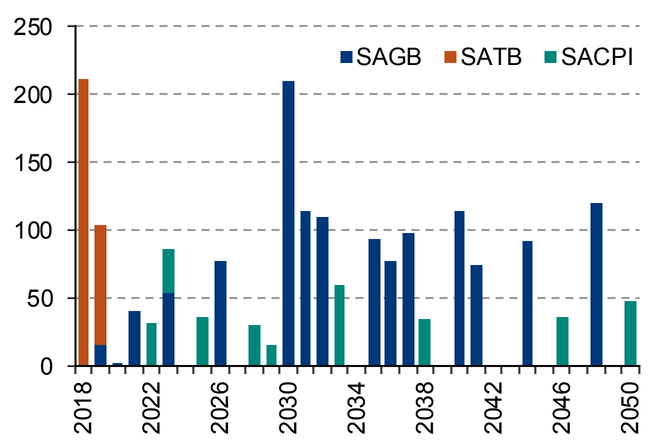
The South African bond market is one of the most liquid in EM with tenors going out to 30 years and a deep local investor base. The outstanding amount is around US$150bn in total.

Short-term or floating rate debt. T-bills constitute around 14% of outstanding debt, while CPI-linked bonds represent 15%. Investors' focus is mostly on fixed-coupon bonds (SAGBs), while T-bills and linkers are hardly traded internationally. Liquidity in the CPI linkers is much poorer compared to bonds.

Fixed coupon bonds. The remaining 71% of debt is fixed-coupon. Government bonds are normally referenced by their serial numbers. For example, the most liquid bond on the curve (2026, the 10y benchmark), is labeled R186. The S. Africa local curve extends up to 30y, maintain high liquidity up the ultra-long end. 88% of SAGBs have maturity higher than 10y, and 40% have maturity higher than 20y. The highest maturity on the curve is 2048. The average maturity of domestic debt is around 16.8 years for fixed coupon bonds and 15.9 years for inflation-linked bonds.

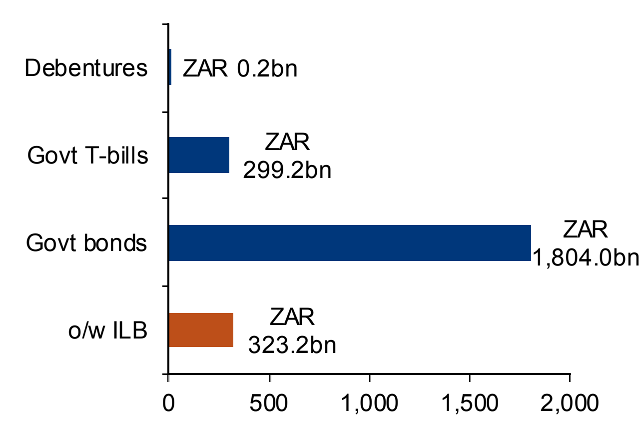
The long duration of SAGBs is a key differentiator from the rest of EM local markets, which usually don't offer liquid bonds beyond 10-15y tenors. The deep S. Africa financial sector, and the strong presence of local pension funds and asset managers favors such feature creating natural demand for long-end paper, de facto helping the Treasury to

Chart 136: Maturity profile of outstanding South Africa government securities (ZAR bn)



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 137: Outstanding ZAR debt types by category (latest)



Source: BofA Merrill Lynch Global Research, Bloomberg

maintain high average duration and keep refinancing risk low. Liquidity is high across the curve (most bonds trade at a 2-3bp bid-ask spread), but picks up from the belly (10y onwards). Foreign ownership is concentrated in 10y+ maturities, and reaches 50-60% in selected bonds (e.g. R2023, R186, R213, R214, R2048).

An unusual feature of the bond market is that certain bonds, such as the R186, R2044, R2048 and SACPI 50s, have their maturities split over three years (in the R186 case it is at the holder's option) as the Treasury attempts to improve liquidity and manage refinancing risk by reintroducing these bonds.

Auction and placement mechanism. The government's risk management framework sets benchmarks for the composition of debt in order to reduce risks due to fluctuations in interest rates and inflation. The vast majority of S. Africa debt is denominated in rand (though the foreign currency share is set to increase). The Treasury targets a 60-65% share of fixed-coupon bonds (currently around 65%). The weighted average maturity of S. Africa domestic debt is 13 years, comfortably inside the 10-14y target range set in the budget.

Bond auctions are held by the SARB through primary dealers every Tuesday and announced on the preceding Wednesday. An annual issuance calendar is published on the SARB website. Auctions are uniform yield Dutch, and the results are displayed on the SARB website. CPI linkers are auctioned on Fridays. T-bill auctions take place weekly and are offered in 91, 182, 273 and 364-day tenors. In addition, non-competitive auctions are conducted in fixed-rate bonds, which provide primary dealers a 48-hour option of taking up an additional 50% of their allocation at the auction clearing yield. Switch auctions are also conducted regularly, in which short-term bonds are exchanged for longer-term bonds.

Derivatives market

South Africa is probably the most liquid and sophisticated EM local currency derivatives market in the European time zone. The market for IRS, FRAs and forward swaps is very liquid, particularly up to 10y. IRS and FRAs trade at an average daily volume of US$100-150k DV01 and with average street ticket size of US$10-20k. There is a reasonably active FRA market all the way to the 21x24 tenor and the IRS market goes all the way to 30 years with an unusually long list of local participants active in the very long end of the curve. There is also an active interest rates vol market up to 3y. The FX vol market is available with vanilla and exotic instruments against both EUR and USD.

Local/external debt ratings

	Local	External
2018	Baa3/BB+/BB+	Baa3/BB/BB+
2017	Baa3/BBB-/BB+	Baa3/BB+/BB+
2016	Baa2/BBB+/BBB	Baa2/BBB-/BBB-
2015	Baa2/BBB+/BBB+	Baa2/BBB-/BBB
2014	Baa1/BBB+/BBB+	Baa1/BBB/BB
2013	Baa1/A-/BBB+	Baa/BBB/BB
2012	Baa1/A-/A	Baa/BBB/BB
2011	A3/A/A	A3/BBB/BB
2010	A3/A+/A	A3/BBB/BB
2009	A3/A+/A	-
2008	A2/A+/A	-
2007	A2/A+/A	-
2006	A2/A+/A	-
2005	A2/A+/A	-
2004	A2/A/A-	-
2003	A2/A/A-	-
2002	A2/A-/BBB+	-
2001	Baa1/A-/BBB+	-
2000	Baa1/A-/BBB+	-

Source: BofAML Global Research, Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+3
Basis: Act/365
Coupon frequency: Semi-annual

IRS

Fixing: 3m JIBAR 11am
Coupon frequency: Quarterly fixed Act/365, quarterly floating Act/365

Bloomberg pages

ZAR Curncy ALLQ<GO> FX rates
OTC ZAR<GO> - Market monitor
SABA<GO> - Bond auctions page
SARB<GO> - Central bank monitor

Reuters pages

FX page ZAR=>
Bonds page 0#ZATSY=

Useful websites

South Africa Reserve Bank
www.resbank.co.za

National Treasury
www.treasury.gov.za

Central Statistics Office
www.statssa.gov.za

Financial Services Board (FSB)
www.fsb.co.za

Johannesburg Securities Exchange (JSE) / Bond Exchange of South Africa (BESA)
www.jse.co.za

Strate (central securities depository)
www.strate.co.za

*Links are to third-party websites, and do not contain BofAML Global Research.

The JSE, the central exchange authority for bonds, also deals with financial and commodities futures and options. It also provides three widely used bond indices – ALBI, an all-bond index containing the top 20 vanilla bonds by liquidity and market capitalization; GOVI, the top 10 government bonds within ALBI; and OTHI, the remaining bonds from ALBI. CPI bond indices now exist as well, and CILI is the composite across issuers.

FX market

The South African rand (ZAR) was introduced in 1961 and today is a fully convertible and deliverable currency. The stated policy of the SARB and Treasury is to opportunistically increase the level of foreign exchange reserves during periods of rand strength. This policy is to help mitigate rand strength, lower volatility and raise the level of reserves, which at US$45bn are only 13% of GDP in 2017.

Table 136: Summary statistics of South Africa derivative products and their markets

Product	Avg daily trading volume	Avg transaction Size	Bid-Ask spread	Bloomberg/Reuters Reference
Interest rate swaps				
1-year	USD100-150k DV01	USD10-20k DV01	2-3bp	SASW1/ZARVIEW
5-year	USD100-150k DV01	USD10-20k DV01	2-3bp	SASW5/ZARVIEW
10-year	USD100k DV01	USD10-20k DV01	2-3bp	SASW10/ZARVIEW
Basis swaps				
	USD200mn	USD50mn	5-6bp	SABS/ICAPZAR

Source: BofA Merrill Lynch Global Research, Bloomberg, Reuters

The average daily spot turnover is around US$4bn, much of which is against USD. A typical ticket size is around US$20mn with a bid-ask of ZAR 0.01. It is one of the top three liquid EM currencies (ex-Asia) with options, FX forwards and swaps all liquid out to 1y. In forwards and swaps, the average ticket size is between US$20mn with a bid-ask spread of ZAR 0.015 and daily volume of US$2-4bn. In options, daily volume averages around US$0.25bn and the typical ticket size is US$50mn. Options are available up to five years, but liquid only up to one year. Trading hours are 07:00-17:00 GMT, and liquidity drops considerably outside of London hours.

Table 137: Vital statistics and characteristics of South Africa's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
ZAR						
Spot	ZAR Spot	USD4bn	USD20m	ZAR 0.005	ZAR=	▪ Mainly trades against USD.
Forwards	Forwards & Swaps	USD2-4bn	USD20mn	ZAR 0.15	ZARFWD=	▪ Liquid up to 1 year.
Options	FX Options	USD0.5bn	USD50mn	0.5 vol	ZARVOL	▪ Options available till tenor of 5 years but are liquid up to 1.

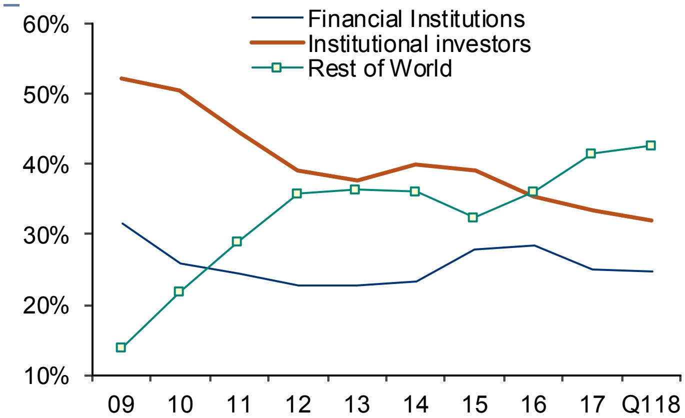
Source: BofA Merrill Lynch Global Research, Reuters

Investor base

South Africa's domestic institutional investor base (public and private pension funds, unit trusts, and insurance) is the largest in EEMEA in absolute terms, as well as in percent of GDP. Assets under management totaled US$759bn by the end of Q1 2018, or about 217% of GDP in 2017, dominated by insurers, accounting for about 31% of total assets. The growth in the overall sector has been led by unit trusts, with growth averaging 15% yoy from 2006 to Q1 2018, followed by public investment corps with 12% and insurance companies 8%.

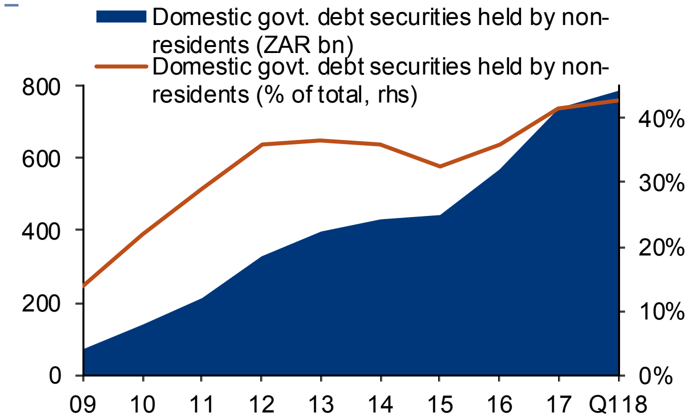
South African institutional investors favor equity over fixed income in their asset allocation. Equity instruments represent 53% of AUM by pension funds and long-term insurance. Pension funds' allocation to equity has been on a gradual upward trend since 2003 at the expense of fixed income.

Chart 138: Distribution of government securities holdings



Source: BofA Merrill Lynch Global Research, Haver

Chart 139: Foreign holdings of South Africa local currency govt debt securities



Source: BofA Merrill Lynch Global Research, Haver

The pension system continues to be dominated by non-contributory means-tested government grants financed by general revenues. Occupational retirement plans are limited to those employed in the formal sector. South Africa's economic structure is such that unemployment levels are elevated and many people lack access to an affordable retirement funding plan. To alleviate this concern, the government is hoping to introduce a mandatory earnings-related contributory system to complement redistributive social assistance. This opens up the scope for expansion of the institutional investor base in South Africa, though admittedly the pension reforms and efforts to boost comparably very low labor participation rates will likely be a long process. The political discussion on the system is still ongoing.

The government has also continued its gradual relaxation of exchange controls on domestic investors. As part of the 2018 budget, the National Treasury announced a 5 percentage point increase in the limit to the percentage amount that institutional investors can invest offshore (now 30% for all funds).

Short-term debt in the form of T-bills is primarily held by local commercial banks, which held 76% of the total amount of bill issuance in 2011/2012. Only 1% of T-bills were held by international investors. In contrast, long-term debt holdings are dominated by institutional investors, primarily pension funds among them.

International presence is strong in the S. African market, with more than 40% of foreign holdings of SAGBs and SACPIs. S. Africa is one of the few emerging markets which is part of the Citi WGBI global fixed income index, and as such it naturally benefits from a broader international investor base. The past two years saw a strong increase in foreign ownership on the back of emerging market strength first, and the political leadership changeover later.

Rules, regulations, capital control and taxation

Foreign investors are not specifically subject to any exchange control restrictions on the convertibility and repatriation of their local sale proceeds. Income and capital are freely repatriated to foreign investors. The withholding tax is 20% on dividend income and 15% on interest payments.

Clearing and settlement

JSE is the central exchange authority for bonds and clearing/settlement occurs via Strate. All government bonds and most others are listed on it.

Table 138: Summary of South Africa bond market and products

Instrument	Treasury bills	Government bonds	Inflation-linked bonds
Issuer	South African Treasury	South African Treasury	South African Treasury
Currency	ZAR	ZAR	ZAR
Principal	ZAR10,000 (par)	ZAR1,000,000 (par)	ZAR1,000,000 (par)
Tenor	91, 182, 273, and 364 days	Up to 35 years	Up to 22 years
Interest rate/coupon	Issued at discount	Fixed	CPI Linked
Coupon Payments	Zero	Semi-annual	Semi-annual
Day Count Calculation	Act/365	Act/365	Act/365
Amortization Schedule	Bullet	Bullet	Bullet
Form	Scripless	Scripless	Scripless
Amount outstanding (as of Jun 2018)	ZAR 299.2bn	ZAR 1,804bn	ZAR323.2bn
Secondary Market			
Trading	OTC and Stock Exchange	OTC and Stock Exchange	OTC and Stock Exchange
Quotation Convention	Yield	Yield	Yield
Settlement Period	T+3	T+3	T+3
Average Daily Turnover	USD0.5bn	USD1-1.5bn	USD0.1bn
Bid/offer spread (0-5Y)	3-4bp	2-3bp	6-8bp
Bid/offer spread (5Y+)	NA	2-3bp	6-8bp
Average trade size	USD3-6mn	USD5-10mn	USD2.5-5mn
Clearing Mechanism	Strate	Strate, Euroclear	Strate, Euroclear
Major players	Primary dealers	Primary dealers	Primary dealers
Trading hours	9:00 – 17:00 (South Africa)	9:00 – 17:00 (South Africa)	9:00 – 17:00 (South Africa)
Bidders	All entities or individuals, including non-residents, may participate. Mostly local banks, investment funds, corporates.	All entities or individuals, including non-residents, may participate. Mostly local banks, investment funds, corporates.	All entities or individuals, including non-residents, may participate. Mostly local banks, investment funds, corporates.
Regulations			
Restrictions on Foreign Investment	No restrictions	No restrictions	No restrictions
Custodian	Yes	Yes	Yes
Withholding Tax	20% on dividends and 15% on interest income	20% on dividends and 15% on interest income	20% on dividends and 15% on interest income
Capital gains Tax	None	None	None
Entry/Exit Tax	None	None	None
Primary Auctions			
Auction Style	Competitive tender in a Dutch auction format via primary dealers and non-competitive tender	Competitive tender in a Dutch auction format via primary dealers and non-competitive tender	Competitive tender in a Dutch auction format via primary dealers and non-competitive tender
Average Issue Size	ZAR6-8bn	ZAR2.4bn	ZAR0.6bn
Minimum Amount of Tender	None	None	None

Source: BofA Merrill Lynch Global Research

Turkey

Gabriele Foa >>
MLI (UK)

Ferhan Salman
MLI (UK)

Overview

Turkey is one of the fastest-growing economies among large EEMEA markets, with potential growth around 4.0-4.5%. The consumption-driven growth model and the commodity importer status keep macro imbalances wide. Financial fragility is amplified by the relatively high share of foreign debt, especially on the corporate side, which makes Turkey more reliant on global funding conditions than peers. The central bank has a marked easing bias but tends to prevent excessive lira weakness. Exchange rate instability, dovish monetary policy, and structural factors have kept inflation chronically high.

The Central Bank of Turkey

Objectives

The Central Bank of Turkey's (CBT) primary objective is to maintain price stability according to the Central Bank Law. The law states that the CBT will determine monetary policy and the related instruments it will use to maintain price stability. The law adds that the CBT will support the government's growth and employment policies, provided they do not conflict with the objective of maintaining price stability.

The CBT adopted a new policy strategy in 2010 to contain the macro financial risks caused by divergences in growth and monetary policies between emerging and advanced economies. This was in line with its mandate, as the Central Bank Law requires the bank to take precautions when enhancing stability in the financial system, and to implement regulatory measures with respect to money and foreign exchange markets. In this context, the CBT started to consider financial stability its main objective, while preserving price stability.

In early January 2017, due to significant pressures on the exchange rate, the CBT took a big step toward an unorthodox move, introducing the Late Liquidity Window (LLW) rate policy. Recent pressures on the TRY encouraged CBT to move into a simplified monetary policy framework. All liquidity is offered at one week repo rate (policy rate) where marginal funding overnight rate (O/N) is set at 150bp in each side of the policy rate. LLW lending rate is set at 150bp above the O/N rate.

Legal framework

Enacted on 14 January 1970, Law No. 1211 introduced significant changes to the legal status and organizational structure of the Central Bank of Turkey. Years later, on 25 April 2001, a number of important amendments were made to the law following the Twin Crisis.

The most notable of these amendments was the inclusion of an article stipulating that

Table 139: Key facts

Name	Central Bank of Turkey
Founded	1930
Governor	Murat Çetinkaya
MPC members	Seven, one from the board, one academician
Autonomous	Yes
Government representative on Board or MPC	No
Terms	3 years for board members, 5 years for the governor and other MPC members
Inflation target (YE)	5%
Latest move	625bp hike (13 September 2018)

Source: BofA Merrill Lynch Global Research, Central Bank of Turkey

Table 140: Key links*

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
Statistics
Reports
Presentations and speeches
Legal framework
Undersecretariat of Treasury
Ministry of Finance
Turkish Statistical Institute

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

the CBT's primary objective was to achieve and maintain price stability. The changes also gave the bank independence. Independence also brought the concept of accountability, which was added to the law. Granting advances and extending credit to the Treasury or other public institutions were prohibited. Purchasing debt instruments in the primary market issued by the Treasury and public establishments and institutions were prohibited as well.

The CBT governor is appointed for a term of four years by Presidential decree and is eligible for reappointment. Four deputy governors are appointed to assist the governor. They are appointed by a Presidential decree for four years. Deputy Governors may be reappointed when their terms expire.

Decisions

The board is the Central Bank of Turkey's highest decision-making body, consisting of the governor, who chairs the board, and six members elected by the General Assembly. Board members serve three-year terms, one-third of which are renewed every year. Members whose terms have expired are eligible for re-election. The board meets at least once a month upon the call of the governor, with the meeting agenda drawn up by the Office of the Governor. Vice governors may attend board meetings in a non-voting capacity.

The CBT's monetary policy decisions are made by the Monetary Policy Committee (MPC). The MPC, under the governor's chairmanship, consists of vice governors, a member elected by and from the board members, and a member appointed by a joint decree on the recommendation of the governor. When the terms of the governor, vice governor and board member end, their MPC membership ends as well.

The MPC: 1) determines the principles and strategy of monetary policy in order to maintain price stability; 2) determines the inflation target together with the government, within the framework of monetary policy strategy; 3) provides information to the public in line with principles, and information to the government within specified periods via reports on monetary policy targets and their implementation; and 4) protects the domestic and international value of the Turkish lira, and establishes the exchange rate regime to determine the parity of the lira against gold and foreign currencies jointly with the government.

The current board

Governor Murat Çetinkaya was appointed on 20 April 2016. Previously, he served as deputy governor from June 2012 to April 2016. He is pursuing doctoral work in international finance, economics and politics. Before being appointed a deputy governor, Çetinkaya served as deputy director for treasury, international banking and investment banking at Kuveyt Turk Participation Bank. Prior to that, he worked as deputy general manager of international banking and investor relations at Halkbank.

Table 141: Central Bank of Turkey MPC members

Name	Originally appointed	Current term ends	Term limit ends	Background	Known policy stance
Murat Çetinkaya (governor)	Apr 2016	Apr 2021	Apr 2026	MA political science and international relations, Bogazici University Former deputy governor	MPC members communicate the official CBT view as rate decisions are believed to aim for consensus.
Uğur Namık Küçük (deputy governor)	Aug 2018	Aug 2022	Aug 2022	PhD in Economics, Rome University Tor Vergata Former chief advisor	MPC members communicate the official CBT view, as rate decisions are believed to aim for consensus.
Murat Uysal (deputy governor)	Jun 2016	Jun 2021	Jun 2026	MA Economics, Istanbul University Former deputy general manager at Halkbank for Treasury Management	MPC members communicate the official CBT view, as rate decisions are believed to aim for consensus.
Emrah Sener (deputy governor)	Sep 2016	Sep 2021	Sep 2021	PhD in mathematical finance, Imperial College. Former director of Istanbul Risk Management Laboratory	MPC members communicate the official CBT view, as rate decisions are believed to aim for consensus.
Abdullah Yavas (Outside appointment)	Mar 2008	Aug 2022	Aug 2022	Prof. Dr. Economics, University of Iowa	MPC members communicate the official CBT view, as rate decisions are believed to aim for consensus.
Omer Duman (board member)	May 2017	May 2020	May 2020	MA in public administration, Gazi University Former member of CBT Audit Committee	MPC members communicate the official CBT view, as rate decisions are believed to aim for consensus.

Source: BofA Merrill Lynch Global Research, Central Bank of Turkey

Most of the MPC members are serving their first terms. There is one vacant seat in the seven-member MPC, as one deputy governor has not been filled. MPC members do not disclose their personal views publicly; they communicate the official MPC view, as decisions are believed to target a consensus. The details of MPC meetings regarding individual votes are not made public either.

Monetary policy regime and instruments

The CBT adopted an inflation-targeting regime in 2002. There was an initial period of implicit inflation targeting from 2002 to 2005 prior to a transition to explicit inflation targeting in 2006. The year-end inflation target is 5%, with an uncertainty band of +/-2%. Monthly, the CBT sets the benchmark policy rate (one week repo), which was shifted from the unorthodox LLW funding in May 2018. All liquidity is provided from the policy rate and marginal funding rate (O/N).

Following the global financial crisis of 2008-09, the CBT moved toward prioritizing financial stability, while maintaining its objective of achieving price stability. The CBT designed a policy mix entailing the joint use of the short-term interest rates (late liquidity window, ON interest rate corridor, and one week repo) as well as the required reserve ratios. The use of a diverse set of tools with effective liquidity management helped implement monetary policy with multiple objectives.

Following the start of market QE-related volatility in mid-2013, the CBT relied on its Additional Monetary Tightening (AMT) framework, which combines tighter TRY liquidity with FX selling auctions. The CBT announced on a discretionary basis when AMT applied.

Subsequent to market volatility exacerbated by a domestic political crisis, the CBT took a big step back to orthodoxy and simplified its monetary policy framework. It implemented robust monetary tightening at its January 2014 interim meeting, raising its overnight corridor by about 450bp and the effective cost of TRY funding by about 300bp. It increased the one-week repo rate to 10.0% from 4.5%, which remained as the main policy rate till end-2016. The bulk of CBT funding was shifted to the one-week maturity and markets no longer needed to guess daily where liquidity management would move overnight rates.

But unorthodoxy has made a comeback, with the CBT cutting the overnight lending rate from 12% to 10.75%, the policy rate from 10% to 7.5% and the overnight deposit rate from 8% to 7.25% over the period mid-2014 to early 2015. Active TRY liquidity management once again pushed overnight rates significantly above the policy rate for an extended period.

In the aftermath of the Fed's first hike in December 2015, the CBT's promised normalization of the policy was delayed. It has since been revealed that the bank wanted to narrow the corridor and normalize the policy by cutting the overnight lending rate. Over March-April 2016, the CBT cut the overnight lending rate by 125bp and the easing cycle continued until mid-November 2016.

The tightening cycle began after the US elections and continued aggressively in early 2017 with an additional short-term interest rate – the late liquidity window (LLW). CBT currently provides a majority of the funding through this window with a view toward stabilizing the effective funding rate at about 12%.

The LLW until May 2018 was the main funding facility where all of daily liquidity was provided (especially in the latter period). The CBT provided unlimited liquidity lending/borrowing facility to the banks against collateral from 16:00-17:00. The overnight deposit rate and lending rates (the overnight interest rate corridor) are also used as lending and deposit facilities. The CBT used to maintain an overnight borrowing facility for primary dealers via repo transactions at a rate 50bp lower than the ceiling of the corridor. However, the CBT announced in September 2015 that the primary dealership system would be supported going forward by allocating higher bid limits (by

25%) at 1-week quantity repo auctions to primary dealers instead of offering favorable interest rate on borrowing facilities.

In terms of open market operations, the CBT may, with an aim to effectively manage the liquidity in the system, conduct open market operations, such as central bank bill issuance, outright purchase and sale of securities, repo and reverse repo, lending and borrowing securities, and lending and borrowing of TRY deposits, and may act as an intermediary in these operations.

CBT seized funding through the one week repo auctions mid-January 2017 but restarted on 7 June 2018 announcing a normalized framework. The CBT announces one-week repo auction amounts at 10am local time, and in case of an unforeseen excessive liquidity shortage funding could be made at marginal funding rate O/N. In order to increase the predictability of liquidity policy and making liquidity management of banks more efficient, the CBT announced in June 2016 that a balanced distribution of weekly term funding stock to the days of the week will be targeted when determining the daily auction amount of one week repo funding provided by the quantity auction method. With a 625bp tightening in the policy rate in September 2018, it now stands at 24%.

Meetings, data and information dissemination

Since the beginning of 2017, the Monetary Policy Committee meets eight/nine times a year and minutes are released within a week. The main communication for the Central Bank of Turkey is the quarterly inflation report. It publishes a financial stability report biannually. Annual monetary and exchange rate policy for the coming year is published in early-December of the previous year.

Table 142: CBT Monetray Policy Committee meetings and releases in 2018

	Monetary policy meeting	Monetary policy minutes	Quarterly inflation report
Jan	Thu, 18 Jan	Within a week	Tue, 30 Jan
Mar	Wed, 7 Mar	Within a week	
Apr	Wed, 25 Apr	Within a week	Mon, 30 Apr
May	Wed, 23 May	Within a week	
Jun	Thu, 7 Jun	Within a week	
Jul	Tue, 24 Jul	Within a week	Tue, 31 Jul
Sep	Thu, 13 Sep	Within a week	
Oct	Thu, 25 Oct	Within a week	Wed, 31 Oct
Dec	Thu, 13 Dec	Within a week	

Source: BofA Merrill Lynch Global Research, Central Bank of Turkey

Exchange rate regime and instruments

The TRY is fully convertible and has been floating freely since the crawling peg was abandoned in February 2001. The CBT, within the monetary policy framework, may execute spot, forward, swap and derivative transactions in the FX market, but historically its action has been limited to spot transactions and money market deposits. The CBT had been regularly selling FX in daily auctions but stopped doing so in April 2016.

In its monetary policy strategy, the CBT keeps an eye on short-term capital inflows, credit growth, the real exchange rate (REER) and financial stability. The CBT had indicated that a range of 120-130 for the REER would entail intervention, including a moderate easing beyond 120 and a stronger response above 130. The CBT has been less clear on the downside and refrains from giving levels. Recently, due to significant exchange rate depreciation in the Nov 2016 – January 2017, April – May 2018 period, the bank appears more concerned about FX stability, and the policy-making preference appears to be to limit the impact of FX on corporate sector balance sheets.

The reserve option mechanism (ROM) was introduced as a tool in September 2011. The withdrawal from or injection of FX liquidity into the market through the ROM is an outcome of banks' individual optimization policies. The ROM allows banks to keep a certain percentage of their TRY reserve requirements in FX and/or gold, and aims to smooth the exchange rate and balance sheet effects of capital flow volatility. It can function as an automatic stabilizer, though its parameters, including the reserve option coefficients (ROCs), can also be changed in a discretionary manner by the CBT (ROCs are the amount of FX or gold that can be held per unit of TRY).

From an aggregate banking sector balance sheet perspective, the consequences of sterilized direct FX intervention and the ROM are broadly similar. The adoption of the ROM has helped the CBT to build FX reserves on a gross level, but net reserves have not been affected. In the past 18-months CBT released fx liquidity and tightened TRY liquidity by lowering ROM parameters.

Since mid-January 2017, CBT began daily FX swap facilities of one-week maturity to provide FX liquidity in the markets. This facility helped with FX liquidity shortages that prevailed till mid-April 2017. The current daily size is $1.25bn with outstanding FX swaps of $6.25bn. Although idle, the CBT also operates FX deposit/lending facilities on a one-week maturity. CBT has not conducted direct intervention in the FX market since January 2014 and stopped providing liquidity through daily auctions in April 2015 (although this market is still open). In November 2018, CBT commenced TRY settled forward fx sale auctions within an initial stock of about US$3bn. This was done with a view to ease TRY pressure. The stock has grown in time peaking at US$8bn end-August 2018, and declined to about US$3bn in September 2018.

Macro-prudential measures help

The Central Bank of Turkey has opted to use macro-prudential tools, such as RRRs and ROM, to tame domestic credit growth, the incremental funding for which usually comes through capital inflows. RRRs have been used actively, first as part of the CBT's exit strategy and then to encourage maturity extension on TRY deposits and support maturity extension on FX borrowing or tame credit growth. FX RRRs are remunerated since May 2015, with the interest rate set daily. Also, as of February 2015, euro-denominated required deposits at the CBT incur an annual 20bp commission.

In November 2014, the CBT started paying interest on TRY required reserves to support banks' profitability and core liabilities. The Banking Regulation and Supervision Agency (BRSA) will step in if more decisive regulatory action is needed to slow credit growth. Increased risk weightings and higher provisioning for consumer loans have proved effective in slowing credit growth in the past.

After July 2016, the CBT has taken measures to limit market volatility. The measures are aimed at providing necessary liquidity to banks without limit, and allow for collateralization of FX deposit in exchange for lira liquidity. The CBT has also reminded that all measures would be taken to ensure financial stability, if deemed necessary.

Since August 2016 CBT took a number of steps to reduce FX reserve requirements and change the parameters of ROM to provide FX liquidity into the system. Reserve requirements on FX deposits were reduced by 200bp (to provide $5.5bn FX liquidity) and ROM parameters were reduced (to release $6-6.5bn FX liquidity). Also the upper limit of FX reserve requirements was increased from 3% to 4% during the maintenance period. Starting from 1 January 2017, CBT anchored the remuneration of TRY reserve requirements to 400bp below the one-week repo rate.

The banking regulator recently limited the off-shore swap markets to 25% of Banks' capital. This lead to a decline in demand for non-deliverable forward auctions of the CBT as the offshore hedging was substituted by spot demand for FX.

Current policy stance

TRY depreciation prompted CBT to tighten and normalized policy framework. Since late April CBT tightened policy rate by 1125bp. Relative to other emerging markets, Turkish ex-post real interest rates were initially tighter by about 25bp offering above 500bp real interest rate. However, June/July/August inflation print has consumed the entire buffer. This prompted CBT to tighten by 625bp in September 2018 meeting.

Monetary policy should be tighter in order to deliver a structural decline in inflation within CBT's control horizon of 12-18 months. Going forward, declining inflation would provide the CBT with room to ease.

Fiscal policy

The budget is on an accrual basis, submitted to Parliament by the end of October and approved by year-end. The annual budgets are in line with the three-year framework announced in the medium-term program. The realizations are announced monthly, in detail. The Treasury announces budget financing by an annual borrowing program prior to the start of the year and updates on the borrowing profile for the next three months on a monthly basis.

Economic structure and outlook

We expect GDP growth to decline to 4.0% in 2018 from 7.4% in 2017. Despite robust growth in the 1H18, the 2H18 should show a market slowdown due to weaker currency and tighter interest rates. Fiscal stimulus (e.g. bonus payments to retirees, tax breaks to the infrastructure projects, and support to new employment) should help domestic consumption. Weaker TRY will help with net exports.

On the downside, stressed corporate and bank balance sheets will likely weigh on investment. The extent of the downside would be constrained by governments willingness to tolerate before municipal elections due 1Q19.

With low public debt and a budget deficit, Turkey has ample fiscal space to cushion against negative shocks. The government is using this space to offset part of the weakening in activity, alleviate pressures on corporate and bank balance sheets (credit guarantee fund). We expect the central government budget deficit to reach about 2.5-3% of GDP (overshooting government's budget targets due to pre-election measures).

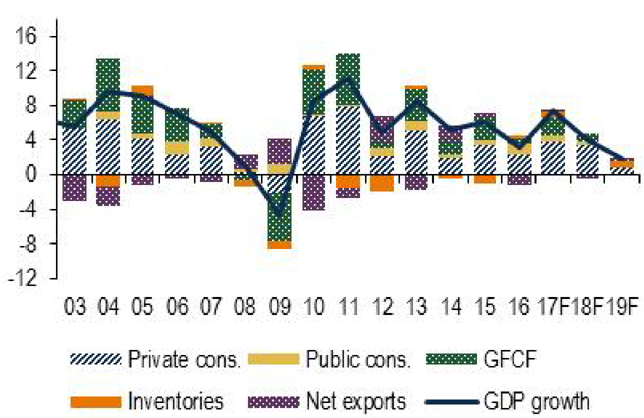
We expect the current account deficit to decline to about US$30bn (around 4.7% of GDP) due to significant TRY depreciation. Removal of Russian sanctions is already helping tourism to recover from a low base. Nevertheless, the value effect due to exchange rate depreciation has offset the volume of tourist arrivals and limits the positive contribution to the headline current account.

August inflation increased to 17.9% yoy. High producer prices would weigh on the forward inflation path. We expect it to continue to edge up towards 25% in 2H18. As base effects taper off and cyclical factors kick in, inflation should ease in 2H19.

Bond market

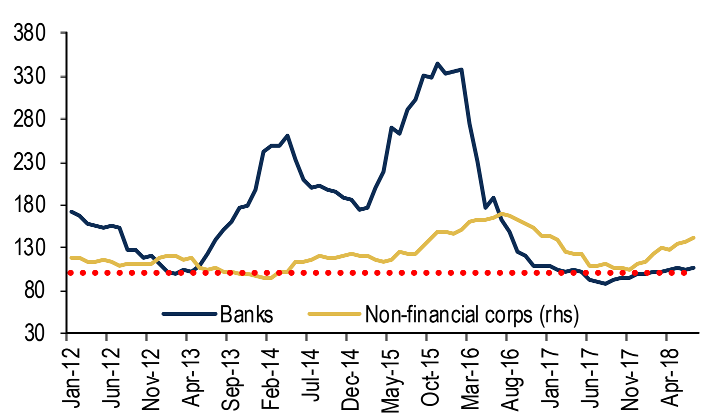
Turkey is one of the largest bond markets in EEMEA. The size of the domestic debt market is roughly US$115bn. Issuance has seen a large increase in 2017 due to the

Chart 140: Growth is normalizing



Source: BofA Merrill Lynch Global Research, Haver

Chart 141: External debt rollover ratios are above 100%



Source: BofA Merrill Lynch Global Research, Haver

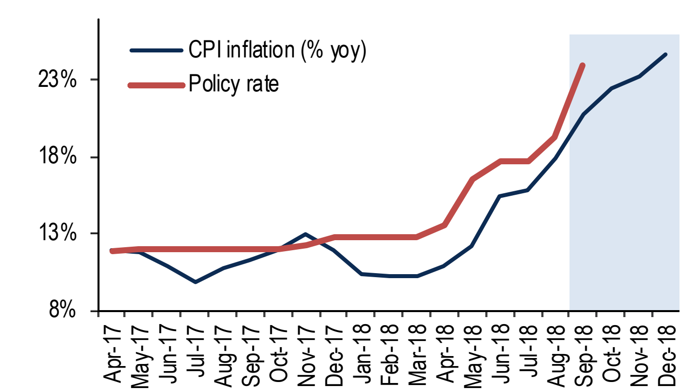
government expansionary fiscal policy. Domestic rollover ratios (the average face value of new issuance divided by amount coming due, key issuance metric in Turkey given high share of short-term debt) spiked in July 2017 beyond 170%, and remained elevated most of the year. Current levels are higher than 100%. High and volatile rollover ratios suggest the size of the domestic market has the potential for quickly moving up over the next few years. The 2018 Treasury financing program outlines the short-term borrowing strategy. The Treasury actively pursues increases in the domestic debt share, the fixed-coupon debt share, and the long-term debt share.

Short-term or floating rate debt. Zero-coupon bonds with less than 2y maturities constitute around 2% of debt and are very liquid. FRNs take up 12%. Inflation-linked bonds constitute around 23% of outstanding debt, and are more popular among local players than internationals.

Fixed coupon debt. The remaining 63% of debt has a fixed coupon with maturity greater than 2y. Overall fixed coupons (including zero-coupons) issuance account for the majority of issuance. Normal ticket size is around US$5mn for 5y and 10y bonds. The benchmark bonds are typically issued in January, April, July, and October, and can be reissued in two consecutive months following the first issuance.

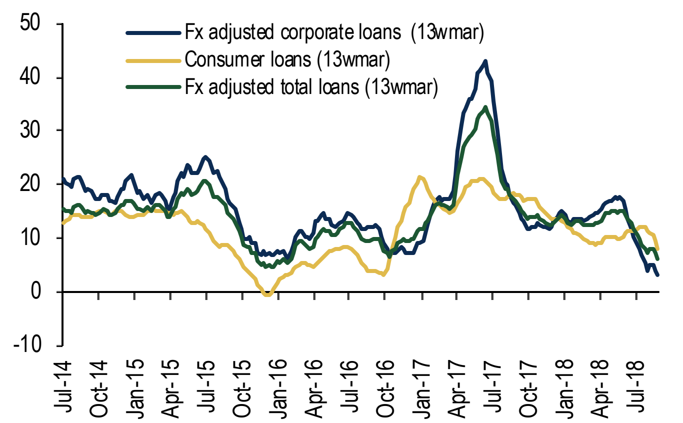
Auction and placement mechanism. The average time to maturity of domestic debt is 4.3 years, as of June 2018. The average maturity on offer varies with budget needs and market conditions. Auctions are carried out once per month. The Treasury regularly issues zero-coupon bills, CPI-linked bonds, floaters and fixed-coupon bonds. Switch and buyback auctions are occasionally used.

Chart 144: Monetary policy tightened as inflation surprised



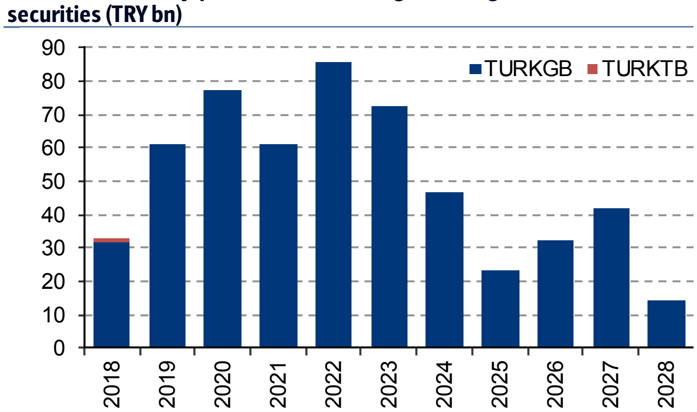
Source: BofA Merrill Lynch Global Research., Haver, CBRT

Chart 145: Credit growth has slowed



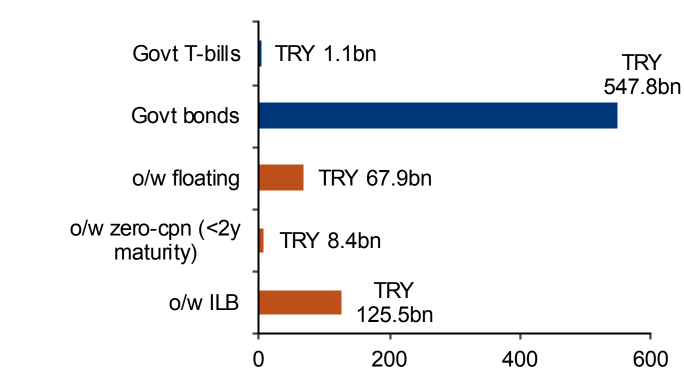
Source: BofA Merrill Lynch Global Research., Haver, BRSA

Chart 142: Maturity profile of outstanding Turkish government securities (TRY bn)



Source: BofA Merrill Lynch Global Research, Bloomberg

Chart 143: Outstanding TRY debt types by category (latest)



Source: BofA Merrill Lynch Global Research, Bloomberg

Table 143: Vital statistics and characteristics of Turkey's FX market

FX products	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
TRY						
Spot	TRY Spot	USD5bn	USD20m	TRY 0.001-0.0015	TRY=	▪ Mainly trades against USD. ▪ EUR/TRY also actively traded, as well as crosses vs ZAR or ILS.
Forwards	Forwards & Swaps	USD4bn	USD50mn	3bp up to 6m; 5bp up to 1y	TRYFWD=	▪ Liquid up to 1 year.
Options	FX Options	USD700mn	USD50mn	0.5 vol	TRYVOL	▪ Options available till tenor of 5 years but are liquid up to 1.

Source: BofA Merrill Lynch Global Research

A three-month rolling borrowing program and auctions, detailing financing targets and securities, are announced on the last working day of each month. Related auction details are provided prior to the auction at least one day in advance. In line with the benchmark strategy, fixed coupon bonds can have 2y, 5y or 10y maturities with semi-annual coupons. FRNs have maturity of 7y and coupons based on weighted average compound rate in the TRY denominated zero coupon bond and bills auctions over the previous three months before each coupon period. CPI bonds extend out to 10y and have a semi-annual coupon. The structure is based on the Canadian format.

Auctions are conducted by the CBT and details are posted on the Treasury website. Retail and corporate investors can participate in auctions through branches of the CBT, banks or brokers. Banks can bid through the Electronic Fund Transfer system (EFT). Brokers bid through the Takasbank Electronic Transfer System (TETS). Auctions are Dutch style average price. Only public institutions and primary dealers can take part in the non-competitive auction; only the latter can take part in switch and buyback auctions.

Derivatives market

With the exception of the 2y zero-coupon paper, the most liquid instruments in Turkey are cross currency swaps (vs 3m USD), with bid-offer of 10bp in size of 3k DV01. CCS are particularly liquid out to 5y, but less so up to 10y. FRAs and single currency IRS are not very liquid. The IRS fixes against the 3m TRLIBOR.

The liquidity in the cross-currency market has markedly declined in the first half of 2018. In this time span, Turkish assets in general (and FX and fixed income in particular) have been under severe pressures due to rising domestic macroeconomic imbalances and adverse market conditions. Year-to-date, short-term rates moved 7.5% higher, and the currency 25% weaker. Inflation is 5% higher than in late 2017 too. The strong pressure removed liquidity from local markets (in 2017, the cross-currency bid-ask spread was closer to 3bp for USD5K DV01).

FX market

The lira (TRY) is one of the most liquid currencies in EEMEA with average daily volume of US$5bn and average ticket size of US$20mn. USD/TRY dominates trading, but EUR/TRY is traded actively as well. Forwards, options and FX swaps are all liquid. Forwards and swaps can be quoted out to 5y but are most liquid out to 1y. Daily volumes average US$4bn with average ticket size of US$50mn up to 6mn and 20mn up

Table 144: Summary statistics of Turkey derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-Ask spread	Bloomberg/Reuters Reference
Cross currency swaps				
1-year	USD150-200mn	USD3K DV01	10bp	TYUSSW1/ICAPTRY
2-year	USD50-100mn	USD3K DV01	10bp	TYUSSW2/ICAPTRY
5-year	USD40-60mn	USD3K DV01	10bp	TYUSSW5/ICAPTRY
Basis swaps				
	Illiquid	Illiquid	N/A	TYBS/ICAPTRY

Source: BofA Merrill Lynch Global Research

to 1y. In options, daily volumes average US$700mn with a typical ticket size around US$50mn and good liquidity up to 1y. TRY is at its most liquid between 07:00 and 15:00 GMT, Monday to Friday. Trading off hours usually involves wider spreads.

TRY is fully convertible and deliverable, and has floated freely since the crawling peg was abandoned in February 2001. The currency was redenominated in January 2005 by dropping six zeros after a period of price stability. The CBT has historically been conducting FX intervention, but recently the focus has turned to interest rates policy. As discussed in the Monetary Policy section above, FX liquidity is controlled via the reserves option mechanism and FX swaps.

Investor base

The fixed income market is dominated by the banking sector, which held roughly half of the debt since 2008. This has reduced slightly to 48.2% as of May 2018. After the banks, corporate investors and non-residents matter most. The domestic non-banking sector holds around 31.4% of debt while non-residents hold another 18%. Turkish domestic institutional investors (private pension funds and mutual funds) have relatively small amount of assets under management.

The private pension system was introduced in 2003, serving as a complementary scheme to the mandatory social security PAYG system. As it is voluntary for employers and employees, investment in pension funds remains fairly low relative to investments in mutual funds. The state subsidy to pension funds, aimed at promoting long term savings, is contributing to the fast growth of the sector.

There are two different types of mutual funds in the Turkish market. Type A funds must invest at least 25% of their assets in equities issued by Turkish companies, while there are no investment restrictions on Type B funds. Type B dominate the mutual funds sector in terms of net asset value (95% of total).

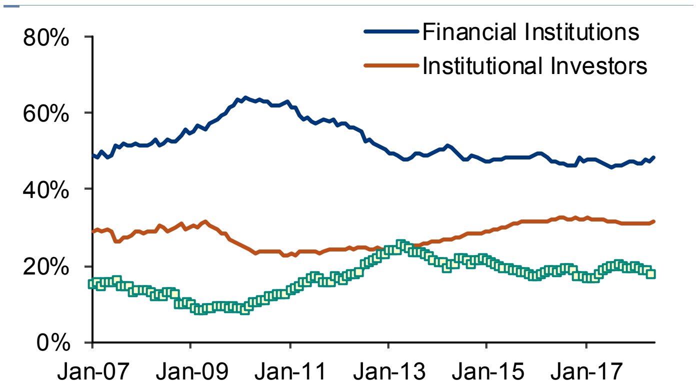
Rules, regulations, capital control and taxation

Turkey's financial market is highly liberalized, with regulatory bodies improving steadily since 2001. There is a withholding tax (WHT) on interest income and capital gains on domestic notes issued after January 2006, which stands at 10% for individuals and 0% for institutional investors.

Clearing and settlement

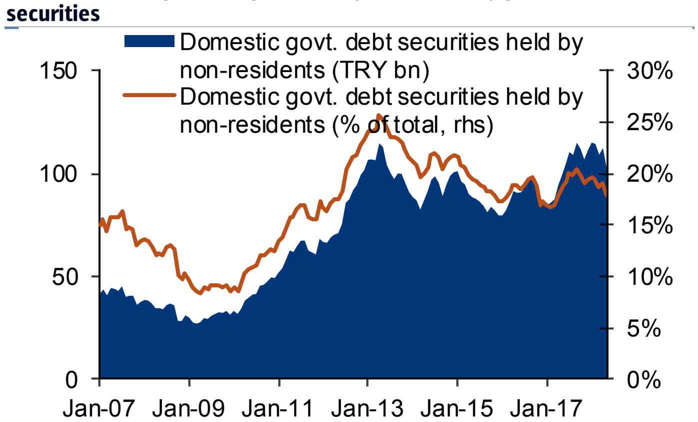
Bonds trade over the counter and on the Istanbul Stock Exchange. Best prices are posted on TRTSY=IS page on Reuters. Settlement is T+0. Outright sales and repo transactions take place from 9.15-12:00 and 13:00-17:00 every day.

Chart 146: Distribution of government securities holdings



Source: BofA Merrill Lynch Global Research, Haver

Chart 147: Foreign holdings of Turkey local currency government debt securities



Source: BofA Merrill Lynch Global Research, Haver

Local/external debt ratings

	Local	External
2018	Ba2/BB/BBB-	Ba2/BB/BB+
2017	Ba1/BB+/BBB-	Ba1/BB/BB+
2016	Baa3/BB+/BBB	Baa3/BB/BBB-
2015	Baa3/BBB-/BBB	Baa3/BB+/BBB-
2014	Baa3/BBB/BBB	Baa3/BB+/BBB-
2013	Baa3/BBB/BBB	Baa3/BB+/BBB-
2012	Ba1/BBB-/BBB	Ba1/BB/BBB-
2011	Ba2/BBB-/BB+	Ba2/BB/BB+
2010	Ba2/BB+/BB+	Ba2/BB/BB+
2009	Ba3/BB/BB+	Ba3/BB-/BB+
2008	Ba3/BB/BB	Ba3/BB-/BB-
2007	Ba3/BB/BB	Ba3/BB-/BB-
2006	Ba3/BB/BB-	Ba3/BB-/BB-
2005	Ba3/BB/BB-	Ba3/BB-/BB-
2004	B2/BB/B+	B1/BB-/
2003	B3/B+/B	B1/B+/
2002	B3/B-/B	B1/B-/
2001	B3/B-/B-	B1/B-/
2000	-/B+/BB	B1/B+/

Source: BofAML Global Research, Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: yield to maturity
Settlement: T+0 or T+1
Basis: Act/Act (Act/365 for zero coupon)
Coupon frequency: semi-annual for 5y and 10y, quarterly for 3y

IRS

Fixing: 3m TRLIB3M
Coupon frequency: quarterly fixed Act/360, quarterly floating Act/360

CCS

Fixing: 3m US LIBOR
Coupon frequency: annual fixed ACT/360 vs 3m floating USD

Bloomberg pages

TRY Curncy ALLQ<GO> FX rates
OTC TRY<GO> - Market monitor
CBT<GO> - CBT and bond auctions page
TUPM<GO> - ISE bond monitor

Reuters pages

FX page CBTA=>
Bonds page 0#TRTSYA=IS

Useful websites

Central Bank of Turkey
www.tcmb.gov.tr

Turkey Treasury
www.treasury.gov.tr

Turkey Statistics Office
www.turkstat.gov.tr

Banking Supervision Authority
www.bddk.org.tr

Istanbul Stock Exchange
www.borsaistanbul.com

*Links are to third-party websites, and do not contain BofAML Global Research.

Table 145: Summary of Turkey bond markets and products

Instrument	Treasury bills (zero-coupon up to 2y)	Government bonds	Inflation-linked bonds
Issuer	Turkish Treasury	Turkish Treasury	Turkish Treasury
Currency	TRY	TRY	TRY
Principal	TRY100 (par)	TRY100 (par)	TRY100 (par)
Tenor	Up to 2 years	2, 5, 7, 10 years	5 to 10 years
Interest rate/coupon	Issued at discount	Fixed / Floating	Indexed to CPI
Coupon Payments	Zero	Semi-annual	Semi-annual
Day Count Calculation	Act/365	Act/Act	Act/Act
Amortization Schedule	Discount	Bullet	Bullet
Form	Scripless	Scripless	Scripless
Amount outstanding (as of Jun 2018)	TRY9.5bn	TRY 547.8bn	TRY125.5bn
Secondary Market			
Trading	OTC and Stock Exchange	OTC and Stock Exchange	OTC and Stock Exchange
Quotation Convention	Yield	Yield / clean or dirty price	Clean or dirty price
Settlement Period	T+0	T+0	T+0
Average Daily Turnover	USD30-40mn	USD70mn	N/A
Bid/offer spread (0-5Y)	15bp	15bp	N/A
Bid/offer spread (5Y+)	NA	5bp	N/A
Average trade size	USD2k DV01	USD5k DV01	N/A
Clearing Mechanism	Istanbul Stock Exchange (ISE)	Istanbul Stock Exchange (ISE)	Istanbul Stock Exchange (ISE)
Major players	Primary dealers	Primary dealers	Primary dealers
Trading hours	9:15 – 12:00 and 13:00-17:00 (Turkey)	9:15 – 12:00 and 13:00-17:00 (Turkey)	9:15 – 12:00 and 13:00-17:00 (Turkey)
Bidders	All entities or individuals, including non-residents, may participate. Mostly local banks, investment funds, corporates.	All entities or individuals, including non-residents, may participate. Mostly local banks, investment funds, corporates.	All entities or individuals, including non-residents, may participate. Mostly local banks, investment funds, corporates.
Regulations			
Restrictions on Foreign Investment	No restrictions	No restrictions	No restrictions
Custodian	Yes	Yes	Yes
Withholding Tax	Withholding tax on interest income and capital gains on domestic notes issued after Jan 2006 is 10% for real persons and 0% for institutions.	Withholding tax on interest income and capital gains on domestic notes issued after Jan 2006 is 10% for real persons and 0% for institutions.	Withholding tax on interest income and capital gains on domestic notes issued after Jan 2006 is 10% for real persons and 0% for institutions.
Capital gains Tax	Withholding tax on interest income and capital gains on domestic notes issued after Jan 2006 is 10% for real persons and 0% for institutions.	Withholding tax on interest income and capital gains on domestic notes issued after Jan 2006 is 10% for real persons and 0% for institutions.	Withholding tax on interest income and capital gains on domestic notes issued after Jan 2006 is 10% for real persons and 0% for institutions.
Entry /Exit Tax	None	None	None
Primary Auctions			
Auction Style	Competitive tender in a Dutch style average price or non-competitive tender	Competitive tender in a Dutch style average price or non-competitive tender	Competitive tender in a Dutch style average price or non-competitive tender
Average Issue Size	TRY0.7bn	TRY1bn	TRY1bn
Minimum Amount of Tender	None	None	None

Source: BofA Merrill Lynch Global Research, Bloomberg, various local authorities

LatAm countries

Argentina

Sebastian Rondeau
MLPF&S

Jane Brauer
MLPF&S

Gabriel Tenorio
MLPF&S

Overview

Argentina's bond market has undergone major changes over the last 17 years. The country again gained access to international emerging debt markets in April 2016 after reaching an agreement with defaulted bond holdouts from the 2005 and 2010 restructurings. Foreign investors have played an active role in the Argentine local bond market after the Macri administration lifted capital controls. The government has developed a peso curve initially up to 10 years. However, with inflation above 40% this year the government recently had to issue debt indexed or at shorter maturities.

Argentina's recent history has been plagued with default episodes. After the large sovereign default in 2001 amid a deep financial crisis, the government restructured the debt in 2005 (67% haircut of face value) and in 2010, obtaining more than 90% total aggregate participation. Then, the government defaulted again in July 2014 after a New York Judge applied the pari passu clause preventing payments of new bonds without paying the holdouts first.

Among local participants, pension funds, nationalized in 2008, play a significant role. The Fondo de Garantía de Sustentabilidad (FGS), the fund management part of the National Social Security Administration (ANSES), is a closed sovereign pension reserve fund managing about $40bn (only Argentine assets) with about 60% of it invested in government securities.

The government relied heavily on central bank financing of the deficit until 2015 which build a large stock of Lebac central bank bills (a high of $63bn in March 2017). The current government has reduced money printing, relying more on market debt to finance the deficit, to gradually lower inflation.

A mix of negative external shocks and Argentina vulnerabilities triggered a currency run in April 2018. After Argentina reached a $50b agreement with the IMF in June 2018 (extended to $57bn in September), the central bank attempted to stabilize the currency beginning with very high interest rates (around 70%), financial repression, reserves losses and a 110% devaluation YTD.

Total government debt net of debts with the public sector agencies was $240bn or 40% of GDP by the end of Q1 2018 or $357bn, 60% of GDP, including debt with public entities, but it could surpass 70% of GDP next year after the devaluation. Total public debt is about 20% denominated in pesos and 80% in foreign currency, with around 60% under local law and 40% under foreign law.

Central Bank of Argentina

Objectives

During the Macri administration, the central bank (BCRA) announced price stability was its main goal, despite that the old charter remains. Other objectives are to promote financial intermediation and savings, starting from very low levels in cross country comparisons (banking loans to GDP only 13% of GDP). In contrast, in the BCRA's charter approved in 2012, goals included financial stability, employment and economic development with social equality, in addition to preserving price stability ("estabilidad monetaria").

BCRA has gained some autonomy since the arrival of the Cambiemos government. During the Kirchnerist government, the central bank had limited autonomy, as the executive branch, in our view, used BCRA resources for debt services. Declining central bank transfers to finance the government deficits and rate hikes are contributing to build some credibility about the independence of monetary policy.

In the original agreement with the IMF signed in June 2018 the government commited to strengthen the central bank's institutional and inflation targeting framework by reinforcing its autonomy seeking to bring down inflation to single digits by the end of 2021 (targets were 27% in 2018, 17% in 2019). To strengthen BCRA, authorities committed to eliminate transfers to the government immediately and to send a new charter of the central bank to congress by 1Q19 amid the IMF program.

BCRA also has a program to quickly reduce the stock of Lebacs by year end, replacing it with other BCRA instrument (mostly short term Leliq), government treasury bills and higher reserve requirements. Also, BCRA was willing to use some of its reserves to buy Lebacs.

In 2016 BCRA attempted to transition towards an inflation-targeting regime, away from a scheme that has relied heavily on FX as an anchor in past years. A formal inflation target was implemented in 2017, however BCRA failed the target so far with 24.8% inflation in 2017, above the 17% target (down from 36% in 2017). BCRA revised 2018 target twice from 10% to 15% and then to 27%. Finally in September the government assumed 42% inflation this year and 23% in 2019, after another devaluation.

Since March 1, 2016 the interest rate had been the main instrument of monetary policy. It was first based on the 35-day Lebac rate. Then in January 2017 the BCRA introduced the repo-corridor rate as the main policy rate. The corridor bottom was the passive 7-day repo rate (reverse repo) and the top the active 7-day repo rate. More recently, BCRA adopted the Leliq 7-day passive rate as the main instrument (a more liquid security, only offered to banks).

In September 2018, BCRA announced the end of the (failed) inflation targeting regime amid accelerating inflation and weak transmission mechanism of interest rates. The new monetary and FX system is a hybrid regime based on money aggregate targets and a low commitment exchange rate band (started on 1 October).

BCRA announced a 0% growth target for the money base until June arguing this aggregate is fully under its control and is easy to communicate. BCRA will control the money base mostly through Leliqs operations with banks. The new BCRA governor Guido Sandleris (replaced Luis Caputo, who lasted only three months in the position) hopes one day Argentina will go back to inflation targeting, but we believe it will take a long time. We expect inflation at 45% in 2018 and 29% in 2019, with upside risks.

The credibility of the program relies on limiting sources of money creation, including the fiscal adjustment (0% primary deficit in 2019) and the use of IMF USD to finance the rest of financial needs ($36b disbursement until 2019).

Table 146: Key facts

Name	Banco Central de la República Argentina
Founded	1935
Gov ernor	Guido Sandleris
Board members	8
Autonomous	In transition to autonomy
Gov ernment representative on board	No
Terms	6 y ears
Inflation target	Beginning at 2018
Latest mov e	%Leliq 7 day s rate rose from 60 to 71%, money

Source: BCRA

Table 147: Key links*

Main page
Board members
Monetary Policy Report
Calendar, communiqués and minutes
Statistics
Reports
Presentations and speeches
Legal framework
English version
Ministry of Economy and Finance
National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

BCRA will accompany the money aggregate rule with a no intervention FX zone. The crawling FX band intervention points started at 34-44 in October 1 and the limits are adjusted daily at a 3% monthly pace. If ARS is above the upper bound, BCRA will sell USD up to $150mn daily.

Legal framework

Carta Orgánica (the charter), codified in Law 21144 of 1992, is the basic instrument that provides the BCRA its legal framework. The charter has been revised several times, including 1) Law 25485 of 1995, which introduced deposit insurance; 2) Law 25562 of 2002, which expanded BCRA's regulatory powers over the financial system; 3) Law 25780 of 2003 involving adelantos transitorios; 4) Law 26422 of 2008, which extended the use of AT to payments of external debt (ie, not restricting them to the payment of multilateral creditors); and 5) Law 26739 of 2012[11].

The governor of the board is also the president of the central bank. The board requires a minimum of five members to attend a meeting, the decisions at which are made by a majority vote. Also, there are some decisions that require special majorities. The member presiding over the meeting has an additional vote in case of a tie. The finance minister can attend and speak at BCRA's meeting, but does not have a vote.

From 1992-2003, BCRA was prohibited from lending to the government, restriction lifted later, and this condition was reestablished with the IMF agreement. In 2003, Law 25780 allowed BCRA to lend the government up to 12% of the monetary base via short-term loans ("adelantos transitorios"), and up to 10% of the government's last 12-month revenues when used to pay multilateral creditors (limit increased in 2012). This lending capacity was expanded in 2012. BCRA's lending to the government (excluding the use of reserves for debt payments) was higher or equal to 1.6% of GDP per year since 2012, compared with less than 0.4% of GDP before 2008[12]. Under the new administration, BCRA gradually reduced its lending to the government until this year when it commited with the IMF to fully eliminate it.

The current board

Before 2016, BCRA's boards were perceived as not independent, and political alignment with the executive branch rather than technical expertise seemed to have been the selection method, in our view. We perceive a significant improvement in the qualifications of the boards members in the last three years.

In December 2015, President Macri appointed Federico Sturzenegger, who was a National Deputy, as BCRA president, relatively orthodox for Argentine standards. He normalized the FX market (removing the "cepo cambiario") and removing capital controls. He allowed the peso to float more freely proposed a transition to inflation targeting scheme in 2017.

After an FX crisis unwinded in April 2018 and slower than expected progress was made in the inflation front, Sturzenegger was replaced by Luis Caputo, an economist and now former minister of finance. Caputo was accompanied by vicepresident Gustavo Canonero, a PhD economist from MIT, perceived as very pragmatic and balanced. Caputo

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[11] In our view, Law 26739 brought about the most important reforms because it allowed BCRA to extend adelantos transitorios to the government – equivalent to 10% of the government's revenues, in addition to the amounts described above. This law also gave extended powers to BCRA to direct credit through the imposition of differentiated reserve requirements, or "other appropriate methods". Law 26739 also modified the Convertibility Law of 2001, removing any remaining relationship between international reserves and the monetary base. But this is expected to change in the next charter bill.

[12] BCRA has been transferring or loaning up to 5.2% of GDP to the government annually in recent years. Between 2006 and 2015, the government used US$64.5bn of reserves to make foreign currency debt payments, exchanging them for non-negotiable bonds with a Libor minus 100bp interest. In addition, the central bank had also been increasing the transfer of profits to the government, as well as the short-term loans. [12] This strategy, implemented in 2010, has affected BCRA's balance sheet significantly.

added more control over money aggregates to accompany the interest rate as main instrument. They took tough measures to reduce liquidity amid the FX crisis, including 11% hike in reserve requirements and policy rate hike to 45% from 27%.

Caputo resigned right before the new IMF agreement, after another large devaluation of the currency and limited firepower for FX intervention. Guido Sandleris took his place, a PhD from Columbia University and former head of policies of the ministry of economy who negotiated IMF agreements. He implemented the new monetary system based on money aggregate targets and FX band, with the support of the IMF.

Background

In the past, monetary misconduct and inflation have resulted in substantial, periodic currency devaluations in Argentina. From 1970 to 1990, policy makers failed to implement sufficient monetary policies to reduce inflation from the hyperinflation peak of 1989. To bring inflation down to single digits, in 1991 the BCRA created a currency peg, where the peso was pegged one for one to the dollar, with every peso backed by hard currency reserves.

The model brought stability and growth during the 1990s, but an overvalued peso relative to Brazil and other trading partners led to a loss of competitiveness and a deterioration of fiscal and trade accounts. In 2002, the country defaulted on its sovereign debt and the dollar peg was abandoned, affecting the solvency of a highly dollarized financial system. From 2001 and until 2015, the BCRA heavily managed the exchange rate, while controlling monetary capital flows.

Monetary policy and instruments

Under the revised IMF agreement, money aggregates is the main instrument of monetary policy (zero growth target for next months), together with a crawling FX band. Inflation has been going upward gradually until a likely peak of 6-7% in September 2019 and is approaching 45% this year, after the currency run.

BCRA is performing daily Leliq auctions (only with banks) to achieve money targets, apparently announcing quantities and allowing interest rate to adjust endogenously to clear supply and demand. BCRA committed to keep Leliq rate at or above 60% until December. The tightening led to an increase in Leliq average rate to 71% from 60% (the average of Leliq auction is the new policy rate). BCRA also hiked reserve requirements about 24% this year, mostly to absorb Lebac maturities.

The initial program of the IMF had outer band of the upper limit of the new inflation target agreed in the memorandum with the IMF lies between 29% and 32% in 2018, the

Table 148: BCRA Board members

Name	Date appointed	Term ends	Background	Known policy stance
Guido Sandleris (governor) (en comisión)	2018	2021	Former chief of policies, ministry of economy. PhD in economics, Columbia University	perceived as pragmatic, and perceived as aligned with the minister of economy. Negotiated IMF program
Gustavo Canonero (vice governor) (en comisión)	2018	2021	PhD in Economics, MIT. Former head of EM Research at DB, New York. Latin America chief economist Managing Director and chief of economic investigation for Emerging Markets in Deutsche Bank.	Perceived as a balanced and pragmatic economist, less orthodox than its predecessor and close to former governor Caputo.
Horacio T. Liendo (en comisión)	2015	2021	Lawyer, Universidad de Buenos Aires. Master's degree in law, University of Georgetown. Specializes on banking law. Previously worked at Marval, O'Farrell & Mairal and as an attorney for several financial institutions.	Perceived as aligned with government policies.
Francisco E. Gismondi (vice superintendent) (en comisión)	2015	2021	Bachelor in economics, Universidad Católica Argentina. Postgraduate studies at Di Tella. Professor at UCA and former economic consultant.	Perceived as aligned with government policies.
Pablo Curat (en comisión)	2015	2021	Bachelor in economics, Universidad de Buenos Aires. Consultant for IDB and the World Bank.	Perceived as aligned with government policies.
Veronica Rappoport (en comisión)	2018	2021	PhD in economics, MIT	Perceived as close to governor Sandleris. Former professor in Columbia Univ and LSE> Expert in finance.
Fabián H. Zampone (superintendent) (en comisión)	2015	2021	Lawyer, Universidad del Museo Social Argentino.	Close to President Mauricio Macri.
Enrique Szewach (en comisión)	2017	2023	Bachelor in economics, Universidad de Buenos Aires. He's also journalist and writer.	Perceived as aligned with government policies.

Source: BCRA, BofA Merrill Lynch Global Research point targets are 17% in 2019 and 9% in 2020. However, after the latest devaluation the government now expects 42% in 2018 and 23% in 2019.

Previously, since 2017 until August 2018 the repo-corridor rate was the main monetary policy tool, later replaced by the 7-day Leliq rate and more recently with money aggregate targets (Leliq rate becomes endogenous). Leliqs for banks (7-day BCRA paper) are the main instrument used to control monetary aggregates. The BCRA will auction these securities daily announcing quantitative targets consistent with the money base growth.

Previously policy rate decision was made once a month and a statement explaining the decision is published right after based on currently available inflation indicators (including private estimates).

Other rates: The Badlar rate is the average rate among private banks for 30-35 day certificates of deposit of ARS1mn or higher. This is usually the market rate for borrowing and lending between private entities. The central bank publishes Badlar daily. The Badlar rate has fluctuated around 30% this year. Recently BCRA introduced an additional rate measure for larger deposits TM20 (>ARS 20mn for 30-35 days).

Inflation statistics have improved substantially after a period of mis-reporting between 2007 and 2015 (official inflation measures came between 10 and 15% below market estimates pointed, annual average). Between December and June 2016, the Indec did not publish an official inflation index due to a statistics emergency. In June 2015, the Indec launched its new official CPI index, covering the Gran Buenos Aires. In July 2017, the Indec introduced new National CPI, which covers six regions representative of the country as a whole including 1) Gran Buenos Aires, 2) North East, 3) North West, 4) Pampa, 5) Cuyo and 6) Patagonia. The Minister of Economy had said the CER inflation unit (used as reference for linker bonds) will be the broader national index available.

Exchange rate regime and instruments

From 2011 to 2015, the government opted to impose capital controls and import restrictions to deal with the external imbalances created by too much demand and an overvalued exchange rate. Portfolio outflows and dividend payments dried up and imports stabilized. This policy had not been sufficient to stop the drain of international reserves.

After the new government took office in December 2015, the central bank transitioned from a crawling peg FX regime to a much more flexible regime allowing exchange rate fluctuations, with occasional interventions to avoid excess volatility. Since December 2015, BCRA introduced significant changes to regulations and capital controls:

- It eliminated minimum period required for investments to stay in the country and 30% mandatory cash deposit for capital inflows.
- No limit for households and firms dollars purchases for savings purposes (this had been initially capped to $2mn per month and $5mn after in 2015).
- Started normalizing FX access for importers and established a calendar to pay debts to importers. Non-automatic import licenses lifted for the bulk of products.
- Removed controls on deposit interest rates and lending rates for certain products (including personal credit lines and autos). Flexibilize restrictions for banks to lend in dollars (previously only to exporters, no including providers of exporters).
- Eliminated the tax advance of 20% and 35% on dollars for savers and tourism respectively.
- Foreign currency deposits reserve requirements reduced initially to 20%, from 50% (currently 30%).

- $500k monthly limit for repatriation of funds from equity sales was removed.
- Restrictions for dividend payments were eliminated in practice. No central bank approval is needed for repatriation of funds.

After these modifications were introduced (along with a restrictive monetary policy), the exchange rate initially stabilized around 13 ARS/USD in December 2015. The blue-chip swap and the black market exchange rate quickly collapsed, unifying the market. FX closed 2017 at 18 and jumped to 38 by October 2018 after an FX crisis triggered by negative external shock, Argentina vulnerabilities (high current account deficit, high financial needs, negative positioning). Also, monetary policy lost credibility given slow progress on disinflation, and 28 December 2017 policy announcements (target relaxation and rate cuts).

To discourage short-term capital flows, in May 2016 the BCRA announced Lebacs will not be Euroclearable anymore (since January 2016 all Lebacs issued were Euroclearable). This open a wedge between Lebac yield (Leliqs) and other Euroclearable peso bond yields. Many foreign investors opened local accounts to be able to invest in Lebacs directly (though outflows were observed during the FX crisis). The Leliqs rates are very high, at 45% recently with 25% expected inflation, but this security is only offered to banks.

New FX bands regime: In the new regime starting October 2018, BCRA will accompany the money aggregate rule with a no intervention FX zone. The crawling FX band intervention points started at 34-44 in October 1 and the limits are adjusted daily at a 3% monthly pace. If ARS is above the upper bound, BCRA will sell USD up to $150mn daily (endogenous drop in money aggregates) and could buy USD if ARS is below the lower bound (discretion on how much is sterilized). IMF reserve targets would be adjusted downward by those interventions. We believe the FX band is a weaker anchor: 1) it is very wide (almost 30% width), 2) it is a fast crawling band, 3) Governor Guido Sandleris said the band should be interpreted as an FX guideline and not as a commitment.

ARS will not float freely inside the band given its width (29%) and Argentines' fear of floating. Governor Sandleris acknowledged potential intervention in FX futures markets inside the band and we expect public banks to intervene in disruptive situation, as it happened this week according to local press. But we should see less intervention than under Caputo's BCRA given expected limits in futures and reserves in the IMF program.

Other financial operations

The BCRA accumulated international reserves up from $25bn in 2015 to $49b today initially at the expense of higher peso liabilities (Lebacs) but also due to higher deposits and now IMF loan for $15bn. In December 2016, $16bn in non-transferrable Treasury bills were exchanged for bonds with higher market liquidity. International reserves also include more than $10bn of a credit line with China (repo) that perhaps could be converted into dollars with some cost if needed. BCRA is reported to be negotiating and extension of $9bn with the Chinese swap.

Credit regulation functions

BCRA can set reserve requirements, and recently increased its grip on the local credit market. Reserve requirements for demand deposits were increased by 2.5% in June 2016 and raised by another 2.5% in July, taking them to 22.0%. In March 2017 the BCRA reduced the requirement 2 p.p. to 20% to promote savings in the financial system. This year, BCRA has hiked reserve requirements by around 24% to force banks to sterilized money from Lebac maturities. BCRA also reduced the foreign currency position limits to 5% from 30% recently, to limit USD demand (with exceptions if banks buy USD treasury bills Letes).

One member of BCRA's board is also the superintendent of banks, an office that has ample regulatory powers over the local financial system. More recently, BCRA hiked reserve requirements by 11% to tighten liquidity and control the FX run (only partly remunerated if integrated with peso bond Botes 2020).

The central bank is gradually phasing out a policy of subsidized credits that forces banks to allocate a part of their loan portfolio to certain uses at subsidized rates. BCRA has followed this policy since 2012.

The BCRA also created the UVA index (adjusted by CER inflation) and introduced new UVA adjusted loans to promote the mortgage market, they were growing fast before the FX crisis around 1% of GDP but after the crisis they are above 1% of GDP. To deepen the banking system, private banks agreed to make savings accounts fee in exchange for de-regulating commissions on their products.

Current policy stance

The IMF agreement on June 2018 required the immediate elimination of BCRA transfers to the trearury. Since October 2018, BCRA is relying on a strong tightening associated with the zero-growth money base target (pluse the weak FX band). BCRA is performing daily Leliq auctions (only with banks) to achieve money targets, apparently announcing quantities and allowing interest rate to adjust endogenously to clear supply and demand. However, BCRA committed to keep Leliq rate at or above 60% until December (and this week has announced a minimum of 65%). The tightening led to an increase in Leliq average rate to 71% from 60% one week ago (the average of Leliq auction is the new policy rate). BCRA also hiked reserve requirements 3% (this time in advance of Lebac maturities). Marginal term deposits requirements can be integrated with Leliqs.

This may hurt economic activity (already in a recession this year). Limited FX firepower forced BCRA to adopt money targets amide IMF targets.

Inflation targets are challenging given high inflation pass-through of the FX devaluation, the inflation inertia mostly transmitted through wage negotiations, and pending regulated price hikes to reduce subsidies. The lack of a stronger anchor (fiscal or FX) demands a gradual disinflation strategy. The credit-channel transmission mechanism of monetary policy is particularly weak in Argentina given credit-to-GDP is very low. This is another reason why BCRA moved money aggregates/FX bands. Market participants had lost trust in the previous system and perceived the lack of an inflation anchor.

The government is targeting a 0% of GDP primary deficit to reduce expectations of money printing from the central bank.

Initially, since 2016, capital inflows and high fiscal deficit led to real FX appreciation and current account deficit of 5% of GDP in 2017 (fueled by government debt issuance and high real interest rates in dollars). But capital reversal this year led to a sharp 45% real depreciation and current account deficit should decline to 2% of GDP in the medium term.

Meetings, data and information dissemination

BCRA's board meets at least every fortnight. The charter mandates BCRA publishes monetary, financial, credit and exchange rate statistics. Under the new administration, the central bank has started publishing a monetary policy report on a quarterly basis (first edition was released last May). On this new report, the central bank will present its views on: 1) international macroeconomic and financial conditions, 2) development of local economic activity, 3) dynamics of price indexes, and 4) monetary policy stance.

The central bank has also relaunched the REM ("Relevamiento de Expectativas de Mercado"), a monthly survey covering analyst expectations on main macroeconomic variables such as GDP growth, inflation, interest rates, primary fiscal balance and exchange rate.

The monetary policy committee will set the parameters of monetary and FX policy in the new regime. The committee has four members, including BCRA governor, vice-president, one director (currently Szewach) and the head of economic investigations.

Fiscal policy

In 2017 and 1Q 2018 government continued with access to international markets before hitting financing constraints (higher US T. bills rate and currency crisis). After the FX crisis started in April 2018, the government is obtaining financing mostly from the IMF, other IFIs and local markets. The total IMF revised package would total $57bn of which $51bn are disbursed in 2018-2019 ($36bn pending for that period). Before 2016, given limited access to voluntary debt financing, the government increasingly used BCRA reserves and relied more on BCRA peso issuance to finance the deficit, which generated strong inflationary pressures.

Argentina's fiscal position has deteriorated significantly in recent years until 2016 in the run-up to 2015 government elections on the back of strong government spending, reaching a primary fiscal deficit of around 5.0% of GDP in 2015 according to the finance ministry. And it did not improve meaningfully in the first two years of Macri's administration as the cuts in subsidies were used mostly to reduce a very heavy tax burden and finance higher interest payment due to debt accumulation.

The government decided to accelerate the fiscal consolidation given limited access to market financing after the FX crisis and tougher global markets. In the revised IMF program, the government would have agreed the primary deficit will go down to 2.7% of GDP this year, 0% of GDP in 2019 and 1% primary surplus in 2020, which would put debt in a downward trend according to initial IMF staff assessment. The fiscal adjustment will be based in spending cuts (public works, energy subsidies, wages, transfers to provinces) considering tax burden is already too high. But if needed the government may delay tax cuts scheduled (in the tax reform approved in December 2017).

After the change of the government the new administration started to cut subsidies and other expenditures. The primary deficit was of about 3.8% in 2017 of GDP (below the target 4.2%).

The government plan subsidy cuts for around 0.7% of GDP next year and cuts to capital spending by 0.5% of GDP and increased export taxes to raise 1.5% of GDP to achieve the target.

Macro drivers

The National Statistics and Censuses Institute (INDEC) has faced criticism since 2007, when official measures of GDP growth and inflation began to diverge from private sector estimates, as growth was overestimated and inflation was significantly underestimated. After the new government took office, INDEC discontinued the publication of the official national-based inflation index (IPCNu, which faced harsh criticism as it was usually significantly below private estimates. INDEC finally published a new CPI by June 2016 (with data for May), but based only on the city of Buenos Aires and part of the province. In July of this year the government launched a new inflation index with national coverage, which continues the process of statistics normalization initiated last year. The CER inflation unit (used as a reference by linker bonds) has been following the new National Index since its creation, as announced by the finance minister.

The INDEC revised National Accounts numbers for the 2004-15 period in June 2016. National accounts methodology was revamped in March 2014. Growth was lowered by 1% annual average in 2004-14, more in line with private estimates (such as Orlando Ferreres or Coremberg 2004), increasing the credibility of the statistics. The INDEC recently released GDP data for 1Q 2018 Nominal GDP was $ 600bn in growing 0.3% vs 1Q 2017, and for 2018 we expect -2%. Credit growth and reforms were reviving the economy until 1Q18 that showed robust growth around 3.5%, but the reversal of capital inflows and political uncertainty have led to a likely recession this year and uncertainty about the continuation of reforms. The government passed structural reforms (tax, capital markets, pension) after the recent mid-term election that increased the representation of Cambiemos governing coalition in Congress, but limited progress was done in labor markets.

Local bond market

Argentina issues both local currency and USD-denominated local law bonds, and has large foreign currency USD and EUR bonds outstanding. Amongst the local currency bonds, there are fixed rate peso bonds (Botes), linkers tied to the official reported inflation index (CER) or bonds paying a floating coupon based on reference rates including the Badlar (Bocan) or the monetary policy rate (Bopomo). Recently, the government started issuing two types of hybrid bonds: a fixed-rate bond with an inflation-linked option (Argcer), and a fixed-rate bond with a USD option (Argduo). In addition, there are local bonds linked the official exchange rate (Bonads).

The variety of local currency bonds is described below. Foreign investors typically trade these bonds through Euroclear with a USD price. Most of the bid/ask spread of the local peso bonds in USD is the bid/ask spread of the ARS, and not of the bond itself. Foreign investors who buy ARS bonds with USD can do swaps into other ARS bonds without converting back to USD can incur a small bid ask spread of the bond itself.

Botes (ticker: ARGTES) Botes are fixed-rate bonds with no sinking fund, which were issued since late 2016 (the shortest one matures September 2018). They are Euroclearable and the 2021, 2023 and 2026 bonds began to be included in some emerging market local bond indices in March 2017, creating demand by foreigners. The recently-issued Botes 2020 is fully held by local banks to fulfill reserve requirements. Outstanding volumes of the tradable tenors are between ARS$25-96bn.

Boncer (ticker BONCER) Boncers are six CER-linked bonds issued since 2016 with ARS$27-57bn outstanding volumes and maturities up to 2025. Boncer bonds pay 2.25-4.25% coupons with semiannual frequency. The July 2021 is the most liquid tenor.

Bogar (ticker ARGBOG) Bogars are CER-linked bonds issued in 2002. There is only one outstanding ARS$270mn issuance, which matures in 2020. The bond pays a 2% coupon with monthly frequency.

Discount and Par (ticker ARGENT) These CER-linked bonds were created from the 2005 and 2010 exchanges of defaulted debt. There are ARS$10.5bn (original face) of Discounts outstanding, paying a fixed semi-annual coupon of 5.83%. The Discounts capitalized a portion of the coupons until December 2013 and will start amortizing in June 2024 until its maturity in December 2033. The Pars are a smaller issue (ARS$2.9bn) that pay a semi-annual step-up coupon currently at 1.18%. The coupon payments will increase to 1.77% in March 2019 and to 2.48% in March 2029. The bond will start amortizing in September 2029 until its maturity in 2038. The peso Discount bonds quote with the original face and the principal on which the coupons are made is calculated to account for growth in CER inflation index, as well as the capitalization.

Argcer (ticker ARGCER) Argcers (aka. “Gatillo”, Spanish for trigger) are two hybrid zero-coupon bonds issued in February 2018. The bonds pay a fixed pre-determined nominal interest rate, unless high cumulative inflation triggers a CER-based payment. More specifically, at maturity, the bonds pay the maximum between: (a) the face value plus capitalized interest; and (b) the face value adjusted by CER since issuance plus the capitalized CER interest. These bonds provide an implicit protection against the rise in inflation, as they protect the value of the capital invested in real terms. There are two issues: the February 2019 with ARS$70bn and the March 2020 with ARS$30bn outstanding.

Argpom (Bopomo, ticker ARGPOM) Argpom (also known as "Bopomo") is linked to the MPR (monetary policy rate), which was recently changed to the 7d Leliq rate. The bond pays a quarterly coupon at a rate equal to the average monetary policy rate during the preceding three months. The bond was issued in June 2017 and matures in June 2020. It has an outstanding volume of ARS$104bn.

Bocan (ticker: ARGBON) Bocans are peso-denominated Badlar-floating rate bonds, maturing as long as 2022. The bonds are issued by the Treasury and have their quarterly coupon linked to the 30-day Badlar rate plus a spread, ranging from 200bp to 325bp and at times can carry relatively high local yields when Badlar is high. Issue sizes are ARS$17-54bn.

Bocon (ticker ARGBOC). Bocones are peso-denominated and either CER-linked fixed-rate or Badlar-floaters. There are two outstanding issues: the PR13 and the PR15. The PR13 is a CER-linked bond with ARS$1bn outstanding that pays a fixed coupon bond monthly and matures on 2024. It capitalized until March 2014 and began amortizing in April 2014. The PR15 matures in 2022 and it has ARS$3.2bn outstanding. The bond has a floating coupon linked to Badlar and will start amortizing in July 2019.

Table 149: Main peso-denominated local bonds

	Currency	Maturity	Coupon	Coupon Type	Coupon Freq	Issue Date	Amount Outstanding (in bn issue currency)	Factor	ISIN
BOTES fixed rate (ticker: ARGTES)									
Argtes 21	ARS	10/3/2021	18.20%	Fixed	S/A	10/3/2016	62.50	1	ARARGE3202H4
Argtes 23	ARS	10/17/2023	16.00%	Fixed	S/A	10/17/2016	64.15	1	ARARGE4502J2
Argtes 26	ARS	10/17/2026	15.50%	Fixed	S/A	10/17/2016	96.57	1	ARARGE4502K0
BONCER (ticker: BONCER)									
Boncer 20	ARS	4/28/2020	Inflation linked	Floating	S/A	10/28/2016	57.36	1	ARARGE4502L8
Boncer 21	ARS	7/22/2021	Inflation linked	Floating	S/A	7/22/2016	26.74	1	ARARGE320283
ARS denominated Argentina Law exchange bonds (ticker: ARGENT)									
Discount $	ARS	12/31/2033	Inflation linked	Floating	S/A	11/29/2005	10.47	1.27	ARARGE03E121
Par $	ARS	12/31/2038	Inflation linked	Floating	S/A	11/29/2005	2.86	1	ARARGE03E105
"Gatillo" (ticker: ARGCER)									
Argcer 19	ARS	2/8/2019	ARS 1.71%(m), CER 3.75%	Fixed	N/A	2/9/2018	70.48	1	ARARGE3205M7
Argcer 20	ARS	3/6/2020	ARS 1.60%(m), CER 4.00%	Fixed	N/A	3/6/2018	30.00	1	ARARGE3205N5
Bopomo policy-linked bonds (Ticker: ARGPOM)									
ARGPOM 20	ARS	6/21/2020	MPR-linked (now 7d Leliq)	Floating	Q	6/21/2017	104.40	1	ARARGE3204M0
BOCANS (ticker: ARGBON)									
Bocan Mar-19	ARS	3/11/2019	Badlar + 250bps	Floating	Q	3/11/2013	39.26	1	ARARGE03H348
Bocan Mar-20	ARS	3/1/2020	Badlar + 325bps	Floating	Q	3/1/2016	16.73	1	ARARGE3201B9
Bocan Apr-22	ARS	4/3/2022	Badlar + 200bps	Floating	Q	4/3/2017	53.63	1	ARARGE3203R1
BOCONES (ticker: ARGBOC)									
Bocon 22 (Pr15)	ARS	10/4/2022	Badlar flat	Floating	Q	2/22/2010	3.24	1	ARARGE03G621
Bocon 24 (Pr13)	ARS	3/15/2024	Inflation linked	Floating	M	3/15/2004	1.10	0.69	ARARGE03B291
Dual-currency (ticker: ARGDUO)									
Argduo 19	ARS, USD	6/21/2019	ARS 2.40%(m), USD 4.5%(a)	Fixed	Capitalize	6/21/2018	2.00(*)	1	ARARGE3205Z9
Argduo 20	ARS, USD	2/13/2020	ARS 2.35%(m), USD 4.5%(a)	Fixed	Capitalize	7/13/2018	1.64(*)	1	ARARGE320622
Domestic provincial debt (ticker: BUENOS)									
Buenos Aires 22	ARS	5/31/2022	Badlar + 383bps	Floating	Q	5/31/2017	15.18	1	ARPBUE3204J9

Note: (m) monthly nominal rate; (a) annual rate (*) US$bn; Source: BofA Merrill Lynch Global Research

Argduo (ticker: ARGDUO) Argduos (also known as Dual) are -coupon bonds issued in June 2018 amid the FX crisis. The bonds pay a fixed pre-determined ARS interest rate, unless high cumulative depreciation triggers a USD-based payment. The bonds are denominated in USD, but all payments are made in ARS based on the reference exchange rate published by BCRA. The bonds specify different ARS and USD interest rates, which are fixed at issue date. At maturity, the bonds pay the maximum between: (a) the USD nominal value converted to ARS at issue date plus the ARS capitalized interest; and (b) the USD nominal value plus USD capitalized interest, converted to ARS at the maturity date fixing. These bonds provide an implicit protection against sharp ARS depreciation, as they guarantee a minimum USD effective yield. There are two issues: the June 2019 with US$2bn and the February 2020 with US$1.6bn outstanding.

Bonar (ticker: ARGBON) Bonars are local law dollar-denominated fixed coupon bonds and Euroclearable. Issuance since 2016 has been small. Maturities extend to 2037. The local law USD-denominated market in Bonars, Par and Discount bonds has little trading volume. The Bonar 2024 is the most liquid issue, with an outstanding of USD$20bn.

Relative liquidity of local bonds

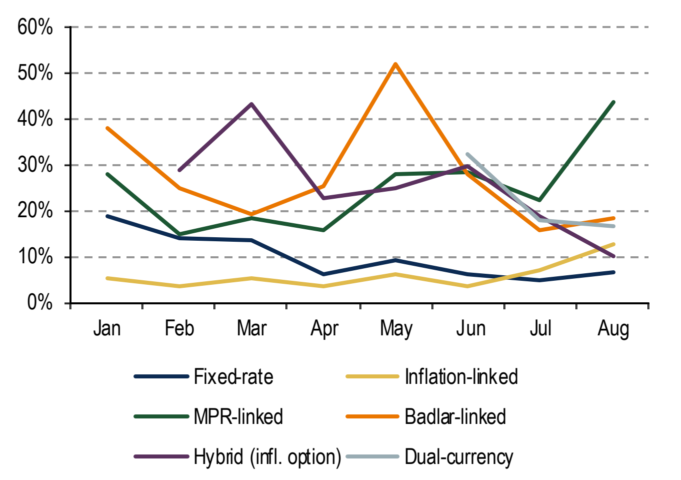
Floaters (Argpom, Bocan, Bocon PR15) have typically been the most liquid peso bonds and their liquidity increased further during this year's currency crisis, when the rate outlook became uncertain. The average monthly turnover (trading volume as % outstanding) of Badlar- and MPR-linked bonds reached peaks of 52% and 44% in May and August, respectively (Chart 148). MPR-linkers had an average monthly traded volume of US$1.7bn and Badlar-linkers US$630mn in August (Chart 149).

The newly issued fixed-rate bonds with inflation options (Argcer) were highly liquid at the beginning of the year, but their monthly turnover declined substantially during the currency crisis, reaching only 10% in August (US$387mn). The dual-currency bond (Argduo) also had a high turnover when it was issued in June (32%), but its liquidity declined with time, reaching 18% turnover in August (US$547mn).

The liquidity of fixed-rate bonds (Botes) declined during the first quarter and has remained low since then, as a large amount of these bonds is held by a few large investors. Their monthly turnover went from 19% to 7% between the January and August (from US$2.1bn to US$490mn monthly turnover).

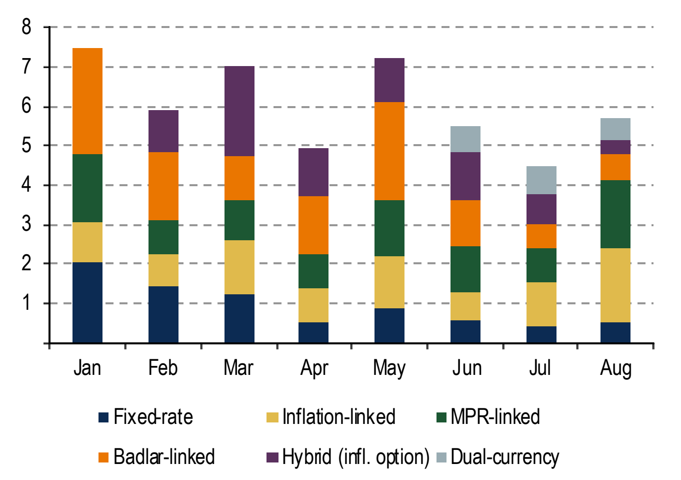
Inflation linkers have increased their liquidity significantly, with their monthly turnover going from 5% to 13% between January and August. Amongst them, Boncers are highly liquid, with monthly turnover reaching 28% in August (US$1.5bn).

Chart 148: Monthly turnover of Argentina peso bonds (in MAE)



Fixed rate: Botes; Inflation-linked: Boncer, Bogar, Discount, Par, PR13; MPR-linked: Argpom; Badlar-linked: Bocan, PR15; Hybrid: Argcer; Dual-currency: Argduo.
Source: BofA Merrill Lynch Global Research, MAE

Chart 149: Monthly traded volume of Argentina peso bonds (in MAE)



Fixed rate: Botes; Inflation-linked: Boncer, Bogar, Discount, Par, PR13; MPR-linked: Argpom; Badlar-linked: Bocan, PR15; Hybrid: Argcer; Dual-currency: Argduo.
Source: BofA Merrill Lynch Global Research, MAE

Local bill market

Lebac (ticker: LEBAC) The central bank used to issue Lebacs to regulate liquidity, although there are plans to bring the stock down to zero by December 2018. Lebacs are zero-coupon money market instruments that mature in up to one year (longest outstanding Lebac matures on December 2018). The BCRA used to conduct a Dutch auction of these securities once a month that settled T+1.

The current outstanding stock of Lebacs amounts to ARS$340bn, of which ARS$256bn correspond to the shortest tenor. Lebacs are not Euroclearable and non-resident investors are charged a 5% tax on financial income since April 2018. The main participants at present are local banks, insurance companies and mutual funds.

In August 2018, BCRA announced that the outstanding stock of Lebacs will be gradually eliminated by yearend, and will be replaced by 7d notes (Leliq) and 1y notes (Nobac) to be exclusively held by financial institutions. The Treasury would support the Lebac phaseout by issuing Letes on dates when Lebacs mature.

Letes in ARS (ticker: ARGTB) The Treasury has issued bills in ARS since the beginning of 2018 with the intention of replacing the issuance of BCRA's longer-dated Lebacs. There are ARS$242bn outstanding, which mature between October 2018 and September 2019. Letes are Euroclearable and are not subject to the 5% tax on financial income for non-residents. We expect the issuance of Letes to ramp up in order to support BCRA's efforts to wind down the stock of Lebacs by yearend.

Letes in USD (ticker: ARGTB) In 2018, the Treasury resumed the issuance of USD bills to increase USD liquidity in the local market. Current maturities currently go up to 9 months and there is currently USD$14bn total outstanding across various tenors. As the ARS Letes, these are Euroclearable and are not subject to the 5% tax on financial income for non-residents.

Foreign law securities

Foreign law USD, EUR bonds issued since April 2016 (ticker ARGENT). These are USD- or EUR-denominated foreign law bonds. There are currently a total of $85bn of foreign law fixed rate bonds outstanding (excluding the non-exchanged remains) as of July 2018. This includes $44bn fixed rate bonds issued since April 2016, following the settlement with the holdouts of defaulted untendered debt from 2001. In 2017, Argentina $2.75bn of a USD-denominated bonds, 100y century bond, making Argentina the first B-rated country to issue a 100y bond. The new bonds are bullet bonds issued close to par. The USD coupons range from 4.625 to 7.625%. Most of the April 2016 bonds were collapsed in April 2017 for cleaner global bonds versus separate 144a and RegS series with a new cusip. Therefore, price history requires merging that of the RegS bonds from 2016 with the global bond history since April 2017. The rest of the foreign law bonds are US$23bn Par and Discount exchange bonds issued in 2005 and 2010.

Foreign law exchange bonds USD and EUR Discounts, Pars (ticker ARGENT). These "exchange bonds" are USD- or EUR-denominated foreign law fixed rate bonds. The $24bn of USD- and EUR-denominated issues were created from the 2005 and 2010 exchanges of defaulted debt. Both were caught up in the pari passu Court injunction wherein Argentina could not pay the coupons on these bonds unless it paid the holdout plaintiffs a pro rata amount of holdout debt. Investors were unable to receive coupons between June 2014 and April 2016.

The US$5.6bn USD Discounts pay an 8.28% coupon and the EUR5.6bn Discounts pay 7.82% both semi-annual coupons in June and December, capitalized through 2013 grew to a factor of 1.4 and 1.38, and will amortize from 2024 to 2033 with a final maturity of 12/31/2033. The US$5.4bn Pars and EUR6.5bn Pars and have low coupons, currently 2.5% and 2.26% respectively until 2019 and then step up, pay in March and September, and will amortize from 2029 to 2038, with a final maturity of 12/31/38. These bonds are more complex that the global bonds issued today and trade at a spread over a similar duration global bond.

GDP Warrants The 2005 and 2010 exchange included GDP warrants as part of the exchange package. They were embedded into the bonds at the time of issue and were detached in November 2005. The GDP warrants, which expire in 2035, make annual payments on 15 December if annual GDP growth and cumulative real GDP growth in the prior year both exceed certain scheduled levels. Details can be found in GDP warrant report. USD, EUR and ARS warrants are actively traded.

The future payments of the foreign currency warrants are calculated in ARS and then converted from ARS to the respective currency at a future FX rate, but one year before the payment date. As the EUR declines relative to the USD, the future EUR payments will be larger. The equilibrium level in the prospectus is 1.25865, which is where the EUR/USD was when the government fixed the formulas for determining relative payments.

From December 2006-2012, the ARS GDP warrant paid out a total of ARS 23.4; the USD GDP-linked warrants paid out US$18.05 and the EUR warrants €17.00. The total payment by the government in 2012 was $3.6bn, of which $2.8bn was in foreign currency payments. There were no payments in 2010 or in 2013-2017, because GDP growth in the applicable prior year was under the roughly 3.2% threshold (according to the old GDP series).

The warrants have a cap on total payments of 0.48 per currency unit. These securities produced the highest return of all EM debt assets from 2005-2011. Valued at $2 at the time of the 2005 exchange, the above dividend payouts were about nine times the initial assumed value of the warrants, and the current market price of the warrants is now around five times larger.

Litigation on foreign law bonds

In June 2014, the US Supreme Court refused to take Argentina's appeal on the pari passu case, which pertains to equal treatment of foreign law bond payments created out of the 2005 and 2010 exchange and the non-performing bonds issued before 2001.

Argentina chose to default on the 2005 and 2010 exchange bonds rather than negotiate a settlement with the holdouts. CDS was triggered in July 2014. Prices had been volatile on both foreign and local law foreign currency bonds from 2013 to 2016, affected by the judicial process and expectations regarding a settlement with the holdouts.

However, the litigation brought in a new set of buyers, distressed credit funds, crossover high yield funds, special situation funds and global macro hedge funds. These new buyers are very active in positioning and trading of foreign currency debt, both foreign law and local law. In addition, from 2013-2015, dedicated emerging market funds had a preference for local law bonds whose coupons were being paid and received, rather than the foreign law bonds whose coupons were blocked from payment to the bondholders by the District Court.

In March 2016, the congress passed a law authorizing the government to pay debts with the holdouts for $11.6bn. Around mid April, the government issued foreign bonds for $16.5bn to finally cancel debts with most of the holdouts. This allowed the Treasury to cover most of its residual financing needs for 2016 and paved the way for provinces and corporates to issue debt in external markets. Since then the sovereign has issued an additional $28bn in USD and EUR denominated foreign law bonds, for a total of over $46bn since April 2016.

Trading strategies

In this section we describe the economic conditions and market fundamentals driving the profitability of each bond series or type. This will aid an investor's decision process for selecting the best security in given scenarios.

Strategies for CER-linked bonds (Boncer, Bogar, Par, Discount, PR 13)

For foreign investors, inflation linked bonds will benefit from a reduction in real interest rates and/or real exchange rate appreciation. For several years, CER bonds traded at a discount since official inflation statistics were widely believed to under report true inflation under the previous government. The new administration was quick to remove and replace the directors of INDEC, the statistics agency. A new national inflation index has been released in June 2017, to which the CER index is now linked.

Strategies for floating-rate bonds (Argpom, Bocans, PR 15)

For foreign investors, floating-rate bonds provide an alternative to a long-peso position in the short term. They also provide a high dollar-implied yield when hedged with offshore currency forwards.

Investors who wish to take a long ARS position while earning a high interest rate carry can buy MPR-linked Argpom. These bonds would benefit from exchange rate appreciation and also from higher interest rates, since they are floaters. Under the current goal to keep zero growth in the money base, the 7d Leliq rate (current MPR) will remain high for several months. High interest rates will also help the central bank avoid excessive currency depreciation and pass-through effects on domestic inflation.

Badlar-linked bonds should perform well in scenarios in which the central bank raises rates to contain inflationary pressures, as the Badlar (30d deposit) rate tends to adjust to benchmark rate moves. However, there is uncertainty as to how BCRA's goal to control monetary aggregates more closely would affect the spread between active and passive banking rates, which would affect Badlar-linked coupon payments.

Strategies for dual-currency bonds (Argduo)

For foreign investors, dual-currency bonds provide an attractive peso yield while limiting the downside in case of a large ARS depreciation. The bond can be thought of as a combination of a regular fixed-rate ARS bond with a call option on the USD/ARS exchange rate. After the recent bout of depreciation in August 2018, the USD leg of the June 2019 bond will likely be triggered at maturity, since the breakeven exchange rate is ARS$35.5 per USD, considerably below the end of month rate. Argduo payments are made in ARS (even if the USD leg is triggered), so the bond has convertibility risk.

Risks associated with local markets

When investing in local markets, some risks are involved. Unhedged local market positions are exposed to the risk of a depreciation that goes beyond what investors may expect. Foreign investors are also exposed to potential currency controls, although this government is eliminating controls and is committed to free markets. Inflation is also a risk factor, as it can be higher than expected. Investing in Repo- or Badlar-linked instruments is subject to interest rate risk.

Derivative market

The derivatives market in Argentina is very illiquid given FX fluctuation and the lack of long-term financing. The IRS market is restricted to Badlar versus fixed rate, with very limited liquidity. There is also a cross currency swap market, but it is also very illiquid.

FX market

The Argentinian peso has been a freely floating currency only since December 2015, but the central bank has intervened occasionally. After the sharp depreciation ignited by the change of BCRA's inflation targets in December 2017 and the ensuing policy decisions, the central bank intensified its spot and futures intervention in an attempt to contain further depreciation of the currency. This led to a run against the peso as the global backdrop turned unfavorable for emerging markets in the second half of April, which pushed the government to seek IMF support.

Table 150: Argentina's FX market vital statistics and characteristics

FX product	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Trading hours
Onshore						
spot	ARS spot	USD600mn	USD1mn	ARS 0.001	USTARTD1=ME	10.00-15.00
forward	ARS forward	USD400mn	USD1mn	ARS 0.005	n/a	10.00-15.00
Offshore						
NDF	ARS NDF	USD305mn	USD3mn	ARS 0.02	n/a	8.30-16.00

Source: Reuters

The memorandum of economic policies with the IMF released in June reveals a stronger commitment to a floating FX determined by the market and that intervention would only take place in case of clear market dysfunction. It emphasizes that even in those cases, intervention would be in small amounts and the FX would be allowed to adjust to cushion negative shocks. Moreover, the memorandum includes reserves and NDFs stock targets that limit the firepower of BCRA to intervene on the FX.

Average trading volume in the spot market has been US$300mn per day since July, but it reached USD$1.5bn at the peak of the currency crisis. Participants can trade in onshore forwards and futures. The peso is a non-convertible currency.

Offshore non-deliverable forwards (NDFs)

Foreign investors gain exposure to ARS through the offshore market in non-deliverable forwards. Similar to the trading activity in the Lebac market, trading in shorter NDF maturities is far greater than for longer maturities. In general, however, there is a liquid curve for NDFs extending out to 12 months. The fixings for NDFs are determined by the Mercado Abierto Electronico (MAE). Trading volume has gone up 6 to 10 fold in 2017.

Rosario Futures Exchange (Rofex)

Rofex is the largest onshore futures and options market. The market was created in response to the need to guarantee trades in futures and option contracts on commodities, so agricultural exporters are major players in the market. There are active futures contracts up to 12 months with liquidity concentrated on the first six months. Rofex dollar futures contracts are settled in pesos and the fixing is calculated and published daily by the central bank, in accordance with the communication A3500. The contract size is $1,000 (one thousand US dollars) and the quotation is in Argentine pesos per each US dollar. Option contracts have one US dollar future contract as the underlying asset. Contracts require the posting of margin but not collateral, which makes them relatively cheap and the favorite vehicle for exporters

Mercado Abierto Electronico (MAE)

MAE is the largest electronic market in Argentina and it is regulated by the Comision Nacional de Valores (CNV). Banking and financial institutions are the main participants. Spot and future contracts are available. The underlying asset is the US dollar and the contract size is $100,000. The fixing is published at approximately 3pm Buenos Aires time, and represents the volume-weighted average of all trades captured in an electronic trading system in Buenos Aires. Contracts require the posting of collateral, which makes them more expensive than Rofex.

Intervention and parallel market

Heavy central bank intervention in the onshore market until December 2015 led to a significant spread between offshore implied yields and onshore implied yields. Tight capital controls until December 2015 also led to a large spread between the parallel blue-chip rate and the official spot rate. Both of these implied yield and exchange rate spreads have virtually disappear since most controls and restrictions were lifted since December 2015.

Investor base

Pension funds were nationalized in 2008 when the pension system had about US$40bn in assets. The ANSES portfolio was around US$64bn by December 2017 with about 63% government debt. The ANSES has been an important source of demand and supply, and has had a market impact as it rotated out of one bond into another. Since 2016, Anses, under new management, has been modifying the way it negotiates new bonds with the government and may buy benchmark bonds when current holdings come due.

Rules, regulations, capital control and taxation

Central bank Lebacs are not Euroclearable, and ownership is restricted to onshore investors. The central bank has gradually eased US dollar holding restrictions to financial institutions, corporates and individuals. The transaction cap has been raised to $2mn per month per person or per company. The government lifted the obligation for exporters to sell dollars to the central bank. Locals can save in USD.

Conventions/trading practice

Peso-denominated government bonds

- **Face quote.** The market convention is to quote the original face of a bond, regardless of the growth due to capitalization or inflation.
- **Price quote.** The market convention on all local bonds is to quote them on a dirty price basis. The dirty price is an all-in price. Dirty prices tend to grow because of the growth in the coupon, as well as the increase in the factor and inflation index. These prices will drop with coupon or amortization payments, by an amount that is close to that of the payment. The market convention on foreign law bonds is to trade them on a clean price basis excluding accrued.
- **Currency of settlement.** All bonds with an ISIN can settle in any currency that Euroclear or Clearstream accepts. The most common transactions for USD denominated bonds settle in USD through Euroclear. Offshore interest in peso-denominated bonds has increased since the end of 2015, but the majority of transactions are still onshore in ARS.
- **Clearing.** Trading of ARS and USD bonds with offshore clients is primarily through Euroclear and settles mostly in USD. Some trades settle in ARS when an investor receives an ARS coupon or principal payment. ARS trading with onshore clients via MAE usually settle through Argenclear. Argentina bonds, Lebacs issued after December 2015 are not Euroclearable.
- **Convertibility restrictions of payments.** Most limits to buy dollars have been lifted. There are no limit for households and firms dollars purchases for savings purposes (this had been initially capped to $2mn per month and $5mn after). Banks have limits depending on their total foreign currency position. ARS coupon and principal payments are paid to Euroclear's bank in a local ARS account. Foreigners can freely convert coupon payments into USD with previous authorization from BCRA. Amortizations are freely convertible. Financial institutions, corporates, and individuals are restricted on how much FX they can hold via capital ratios and monthly transfers. The government always verifies the origin of the money to prevent money laundering.
- **Ex-dividend date.** The ex-dividend date is typically four business days prior to the coupon payment date. With normal T+2 settlements, bonds that trade prior to the ex-dividend date have a right to receive the next coupon payment. Bonds that trade on or after that do not receive the next coupon. The bonds settle one day before a typical USD bond.
- **Inflation-linked.** The CER that applies to a coupon or principal payment is typically that of 10 days prior to the coupon payment date.

- **Inflation index.** The CER Index can be found on Bloomberg ARCECOES Index. The index is updated with daily future values for the month following the CPI announcement.
- **Base CER.** The CER as of bond issuance date (10 days prior for Par Peso, Quasi Par, Disc Peso).
- **Clearing and settlement.** With the exception of Lebacs, Treasury debt is traded over the counter and through the stock exchange. Treasury is cleared domestically and offshore through MAE, Argenclear and Euroclear.

USD and EUR-denominated bonds

- **Face quote.** The market convention is to quote the original face of a bond, regardless of the growth due to capitalization.
- **Price quote.** The market convention on all foreign currency local law debt is to quote them on a dirty price basis. But the Par and Discount local law exchange bonds in USD trade on a clean price basis as a percentage of current outstanding face.
- **Currency of settlement.** All bonds with an ISIN can settle in any currency that Euroclear or Clearstream accepts. The most common transactions are in USD, clearing through Euroclear.
- **Coupon and principal payments on local law USD bonds.** All USD or EUR cash flows may be paid out in USD, provided those flows occur through Euroclear or a similar offshore entity. The local law Par and Discount bonds have identical coupons and principal payments as the New York law bonds. The government has more capacity to change the payment terms of a local law bond than a New York law bond. For that reason, the local law bonds may have lower prices and are far less liquid than New York law bonds. The local law USD Par and Discount bonds are quoted with clean prices.

Local/external debt ratings

	Local	External
2018	B2/B+/B	B2/B+/B
2017	B2/B/B	B3/B/B
2016	B3/B-/B	B3/B-/B
2015	Caa1/CCC+u/WD	Caa1/SD/RD
2014	Caa1/CCC+u/CC	Caa1/SD/RD
2013	B3/Bu/CC	B3/CCC+/CC
2012	B4/Bu/CC	B3/B-/CC
2011	B5/Bu/B	B3/B/B
2010	B6/B/B	B3/B/B
2009	B7/B-/B-	B3/B-/B
2008	B8/B-/B-	B3/B-/B
2007	B9/B+/B	B3/B+/B
2006	B10/B+/B	B3/B+/B
2005	B11/B-/B-	B3/B-/D
2004	B12/SD/B-	Ca/SD/
2003	B13/SD/CC	Ca/SD/
2002	Ca/SD/C	Ca/SD/
2001	Ca/SD/C*	Ca/SD/
2000	-/BB/BB+	B1/BB-,/
1999	-/BBB-/BB+	B1/BB/
1998	-/BBB-/BB+	Ba3/BB/
1997	-/BBB-/BB+	Ba3/BB/
1996	-/BBB-/-	B1/BB-/
1997	-/BBB-/-	B1/BB-/
1998	-/BBB-/-	-

Source: Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Dirty price
Settlement: T+3
Basis: 30/360, act/365
Coupon frequency: Monthly, quarterly, semi annual

Bloomberg pages
BMLT <GO>
BTMM AR <GO>
OTC ARS <GO>

Reuters pages
IAMCO1
ROFEX

Useful official websites

Central bank
http://www.bcra.gov.ar/

Finance ministry
https://www.argentina.gob.ar/finanzas/secretaria-de-finanzas

Statistics agency
http://www.indec.gov.ar/

Pension regulator
http://www.fgs.anses.gob.ar/

*Links are to third-party websites, and do not contain BofAML Global Research.

Brazil

David Beker >>
Merrill Lynch (Brazil)

Ana Madeira
Merrill Lynch (Brazil)

Overview

The Brazilian fixed income market is the largest in Latin America. Liquidity varies across the asset class. BRL is not a convertible currency, which limits foreign participation in local fixed income. The elimination of the IOF tax (financial operations) for FX inflows into Brazilian fixed income removed a key burden for foreign investors to participate in this market. Brazil is rich in natural resources, including iron ore, soybeans and crude oil, but exports are only about 14.8% of GDP (excluding taxes). Private consumption is the key driver of the economy and represents 74.1% of Brazilian GDP.

Central Bank of Brazil

Objectives

The Brazilian Central Bank (BCB or BACEN) is legally subordinate to the Finance Ministry, but it has operational autonomy granted by the president of Brazil. The BCB is responsible for guaranteeing the purchasing power of the local currency, maintaining adequate liquidity in the economy, keeping international reserves at an adequate level. The bank aims at boosting domestic savings, as well as promoting the stability and permanent improvement of the financial system.

The BCB is also responsible for issuing currency, receiving reserve requirements and voluntary deposits from financial institutions, conducting repo and reverse repo operations, buying and selling public bonds and controlling credit. It supervises financial institutions and authorizes their functioning, determining conditions for managers of financial institutions, and controls the flow of foreign capital in the country. Based in Brasilia, Brazil's capital, the BCB also has branches in Rio Grande do Sul, Paraná, São Paulo, Rio de Janeiro, Minas Gerais, Bahia, Pernambuco, Ceará and Pará.

Legal framework

The BCB was created on 31 December 1964 by the Law 4,595, which replaced the Bureau of Currency and Credit (Superintendência da Moeda e do Crédito – SUMOC) with the BCB. Initially, the BCB directors were named among the members of the National Monetary Council (Conselho Monetário Nacional – CMN).

In 1974, Brazil's president started naming the BCB directors. The current structure of one president and eight directors was set by decree number 91,961 of 19 November 1985. In June 1995, law number 9,069 created the Real Plan, which set up the BCB so that it functions as an executive secretary of the CMN. From 2004, the BCB president had minister status, which had been proposed to be revoked in 2016 with the discussion of law projects providing formal independency to the BCB (more below). The measure is

Table 151: Key facts

Name	Banco Central do Brasil
Founded	1964
Governor	Ilan Goldfajn
Board members	9
Autonomous	No (linked to Finance Ministry)
Government representative on board	No
Terms	Undetermined
Inflation target*	4.5±1.5%
Latest move	On hold (1 Aug 2018)

(*) In 2019,2020 and 2021, inflation target is set at 4.25% ±1.5%, 4.00% ±1.5% and 3.75% ±1.5%, respectively
Source: Brazilian Central Bank

Table 152: Key links*

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
Statistics
Reports
Presentations and speeches
Legal framework
English version
Ministry of Finance
National Department of Statistics

(*) Links are to third-party websites, and do not contain BofAML Research. Source: BofA Merrill Lynch Global Research still under discussion. Yet, if the status is revoked, the right to be judged by the Supreme Court, as for a minister, will remain.

Reform for the Central Bank independency

The BCB remains subordinated to the Finance Ministry. Recent administrations granted the board significant freedom to pursue consistent monetary policy. However, the market remains skeptical about how much the BCB can be shielded from political pressure in the longer term, especially during periods of weaker growth. Such a reform would be important to increase confidence in inflation targeting in a sustainable way.

There is a law project from 2007 (PLS 102/07) in the Senate aimed at giving the BCB board independence by setting fixed, six-year terms for the bank president and board members. Another proposal (PEC 43) from 2015, suggests fixed, non-coincident terms with presidential mandates, including four-year terms for the BCB's president and board members. A more recent law project from 2016 (PLS 146/16) proposes a dual mandate for the BCB targeting both inflation and economic activity. Those are the most discussed proposals recently, but in fact there are several other proposals in Congress. Currently, the president picks the governors board and the BCB's president, which requires Senate confirmation. But the terms are not fixed, so the president can change BCB governors or it president at will. Such a reform would significantly improve market confidence in monetary policy and the bank's commitment to stable inflation. Monetary and fiscal policies started to move in sync in 2016, heading toward a tighter fiscal and easier money mix. The synergy in the policy mix improved credibility and anchored the inflation expectations, opening room for an aggressive easing cycle.

Table 153: BCB Board members

Name	Date originally appointed	Current term ends	Term limit ends	Background	Known policy stance
Ilan Goldfajn (president)	President since Jun 2016	N/A*	N/A*	MIT Ph.D. Chief economist at Banco Itaú. Has worked at the World Bank, IMF and the UN.	No clear preferences revealed.
Carolina de Assis Barros (Administration)	Apr 2018	N/A*	N/A*	Undergraduate degree in administration from Centro Universitário Una and has Master's degree in administration and public policies from York University, in the UK.	No clear preferences revealed.
Carlos Viana de Carvalho (Economic Policy)	Jun 2016	N/A*	N/A*	PhD in Economics from Princeton University. Professor at PUC-RJ.	No clear preferences revealed.
Paulo Sergio Neves de Souza (Supervision)	Aug 2017	N/A*	N/A*	Undergraduate degree in economics from Pontifica Universidade Catolica (PUC-SP) and has MBA in risk.	No clear preferences revealed.
Tiago Berriel (International Affairs)	Jun 2016	N/A*	N/A*	PhD in Economics from Princeton University. Professor at PUC-RJ.	No clear preferences revealed.
Sidnei Correa Marques (Financial System Organization/Rural Credit)	Mar 2011	N/A*	N/A*	Specialization course in management (Universidade de Brasilia), specialization course in auditing (FIPECAFI/USP)	No clear preferences revealed.
Otávio Ribeiro Damaso (Financial System Regulation)	Feb 2015	N/A*	N/A*	Specialization course in mathematics for economists and managers at Universidade de Brasília (UnB)	No clear preferences revealed.
Reinaldo Le Grazie (Monetary Policy)	Jun 2016	N/A*	N/A*	Undergraduate degree in public administration from Fundação Getúlio Vargas of São Paulo. Director at Bradesco Asset Management. He worked for 20 years at the financial markets	No clear preferences revealed.
Mauricio Costa de Moura (Institutional Relations & Citizenship)	Apr 2018	N/A*	N/A*	Undergraduate degree in administration from Universidade da Amazonia and has Master's degree in administration from Universidade de Sao Paulo (USP).	No clear preferences revealed.

Source: BCB. Note: * there is no pre-set term for mandates at the BCB.

Decisions

The BCB's highest authority is its board ("diretoria colegiada"). All board members (directors) vote in the monetary policy decision. In case of a tie, the president (governor) of the BCB has the final say. The BCB directors (deputy governors) are responsible for the following departments at the bank: Administration, International Affairs, Supervision, Financial System Organization/Rural Credit, Economic Policy, Monetary Policy, Financial System Regulation and Institutional Relations/Citizenship. Only the president and the directors of International Affairs, Economic Policy and Monetary Policy have functions predominantly related to monetary policy management.

The board members are appointed by Brazil's president and need to be approved by the Economic Affairs Committee (Comissão de Assuntos Econômicos – CAE) in the Senate. As the central bank is not independent, the president and the directors do not have a preset mandate in terms of tenor and can be removed by Brazil's president. Several proposals that would give more autonomy to the BCB and set predefined mandates for the board have been discussed in Congress throughout the years, but none of them has been implemented.

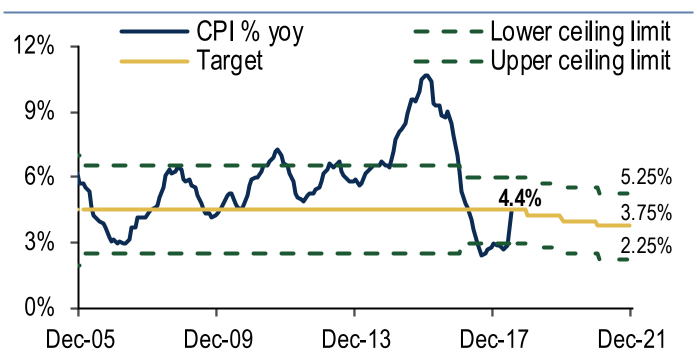
The current board

The current president of the BCB, Ilan Goldfajn, has a PhD from Massachusetts Institute of Technology (MIT). Goldfajn has worked at the International Monetary Fund (IMF), the United Nations (UN) and the World Bank, and took office as the BCB economic policy director from 2000 to 2003 during the transition to former BCB President Henrique Meirelles' mandate. Until his nomination, Goldfajn was chief economist at Banco Itaú, the largest private bank in Latin America.

As Mr. Goldfajn took office as BCB president in 2016, he nominated four new members to the board. Two of them, Carlos Viana de Carvalho (on economic policy, replacing Altamir Lopes) and Tiago Berriel (on international affairs, replacing Tony Volpon) were professors at the renowned Pontifical Catholic University (PUC) of Rio de Janeiro. Both have a PhD from Princeton University. Reinaldo Le Grazie (monetary policy, replacing Aldo Mendes) worked for 20 years at the financial markets while Isaac Sidney Ferreira (institutional relations and citizenship, replacing Luiz Feltrim) was General Attorney at the BCB until his nomination to the board.

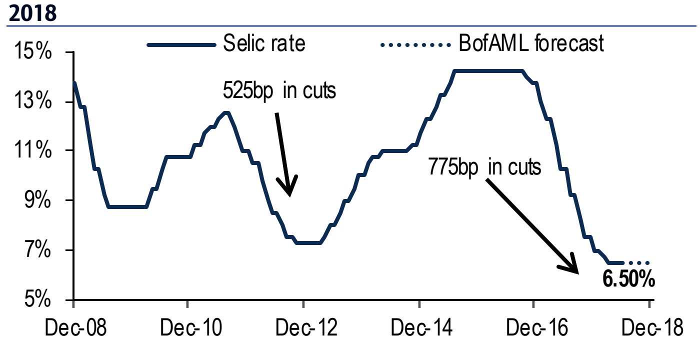
The remaining four positions on the board were unchanged at the time, with Anthero de Moraes Meirelles, recently replaced by Paulo Sergio Neves de Souza (supervision), Sidnei Correa Marques (financial system organization) and Otavio Damaso (financial system regulation), while Luiz Feltrim, both administration director and institutional relations and citizenship director before, was nominated only as administration director. Feltrim was replaced by Mauricio Costa de Moura in the position after some time. The most recent change was in April 2018, when Mauricio Costa was nominated as institutional relations & citizenship director following Isaac Sidney's retirement. Carolina de Assis Barros was then nominated as the new administration director (Table 153).

Chart 150: Inflation targets and ranges



Source: IBGE, BCB

Chart 151: Big easing cycle took place between 2016-end and early 2018



Source: BCB, BofA Merrill Lynch Global Research

The current board is making an effort to increase transparency and give more indications on upcoming monetary policy steps. The Copom statement, released with the Copom decision, became more detailed and the minutes are now released on the Tuesday following the monetary policy meeting (vs the following Thursday before).

Monetary policy regime and instruments

In 1999, after more than four years of adopting a fixed-exchange rate with a defined depreciation path, the government allowed the BRL to float. To anchor the new regime, the central bank implemented an inflation-targeting model. The inflation target has changed over time, but has been at 4.5% between 2005 and 2018. Every June the National Monetary Council sets the target for three years (note that the rules for the target decision were changed in June 2017; before, the CMN used to set the target for two years). For example, in June 2017, the CMN set the target for 2019 at 4.25% and for 2020 at 4.00%. In June 2018 the CMN set the target for 2021 at 3.75%.

Originally, the tolerance interval for the target was set at ±2%. It changed to ±2.5% in 2003, went back to ±2% in 2006 and was set at ±1.5% for 2017 onward. In 10 years of inflation targeting, inflation fell within the target band every year except 2001, 2002 and 2015. Consumer inflation is calculated and released by the IBGE (Statistic Agency, Instituto Brasileiro de Geografia e Estatistica) biweekly (IPCA and IPCA-15), where the bank targets consumer inflation using the IPCA index.

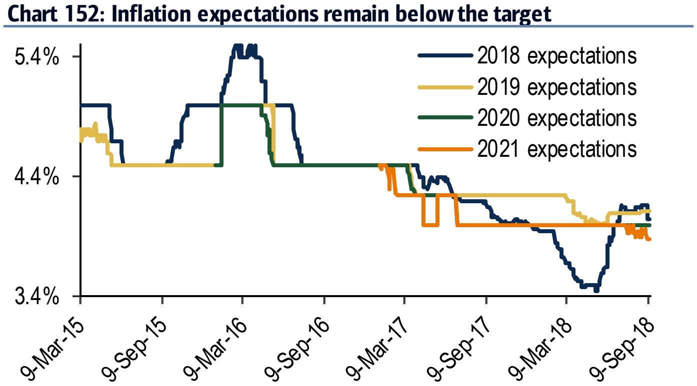
Table 154: Copom Meetings and releases in 2018

	Monetary policy meeting	Monetary policy minutes	Inflation report
Jan			
Feb	6-7 Feb	13 Feb	
Mar	20-21 Mar	27 Mar	29 Mar
Apr			
May	15-16 May	22 May	
Jun	19-20 Jun	26 Jun	28 Jun
Jul			
Aug	31 Jul-1 Aug	7 Aug	
Sep	18-19 Sep	25 Sep	27 Sep
Oct	30-31 Oct		
Nov		6 Nov	
Dec	11-12 Dec	18 Dec	20 Dec

Source: BCB

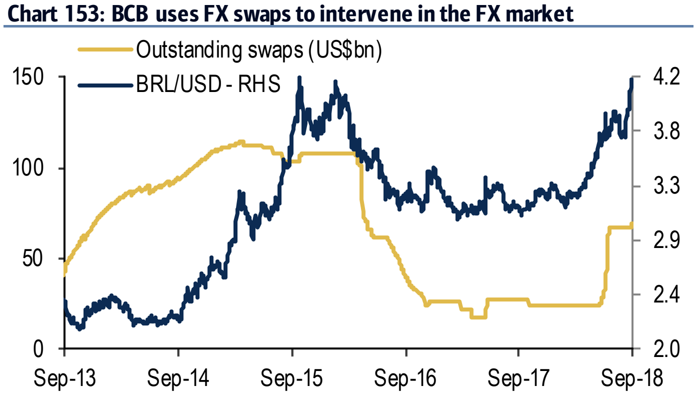
The selic interest rate (BZSTSETA Index on Bloomberg) is the key instrument used to achieve the inflation target and is set by the central bank at the Copom meeting. The BCB used to decide whether to implement a bias for monetary policy at the meeting until last year. The inclusion of the bias would give the board the right to change interest rates between the meetings without an extra meeting. The bias was extinct in 2017, but the bank can call an extraordinary meeting to change the selic rate if it deems it necessary.

Chart 152: Inflation expectations remain below the target



Source: BCB

Chart 153: BCB uses FX swaps to intervene in the FX market



Source: BCB

Alongside interest rates, the BCB uses reserves requirements and other macro prudential measures. The BCB manages the liquidity in the system using repo (operações compromissadas) and reverse repo operations backed by local government bonds. These repo operations help the BCB to steer the effective selic rate toward the target rate.

Exchange rate regime and instruments

Brazil's exchange rate regime is best characterized as a dirty float. In January 1999, the government moved away from the fixed exchange rate regime and allowed the currency to float. Since then, the BCB has been intervening in the currency to smooth FX volatility, cushion FX movements, build up FX reserves and correct level distortions. The BCB is very transparent with the intervention mechanism, using spot, dollar liquidity lines and swap auctions. When it decides on spot intervention, it conducts an auction through dealers and with discretion on the amounts. The latest episode in which the BCB intervened in the spot market was in February-April 2012 amid strong BRL appreciation at the time. On dollar liquidity line, the BCB made auctions of US$5.5bn in June-end, with buybacks for August and September.

Regarding the swaps, the bank auctions FX swaps (sells dollars on a future date) or reverse FX swaps (buys dollars on a future date). One leg of the swap is onshore dollar rates (cupom cambial) plus FX change. The other leg is the CDI (interbank deposit rate). Another instrument the government uses to manage currency is the financial transaction tax (IOF) on FX inflows and FX derivatives.

Credit regulation functions

The BCB also sets reserve requirements to regulate credit concessions and liquidity in the banking system. BCB is gradually reducing reserve requirements, which have been high historically reaching a peak of 31% on average in June 2016. In July 2018 reserve requirements were about 25% of total deposits, one of the highest in the world. There are three types of reserve requirements: on demand deposits, on time deposits and on savings accounts ("poupança"). As of July 2018, the reserve requirement on demand deposits was 25%, while the reserve requirement on time deposits was 34% and the requirement on all savings accounts was 20%.

The remuneration of reserve requirements varies depending on the type: requirements on demand deposits are non-remunerated; requirements on time deposits earn 100% of the Selic rate; and requirement on savings accounts are remunerated by the TR (referential rate) + 6.17% if selic is above 8.5% or by the TR + 70%*(selic) if selic is below 8.5%. Time deposits are remunerated by the Selic rate. Banks that do not meet the reserve requirement can borrow from the BCB at the redesconto (discount) rate, currently set at Selic + 1% for overnight operations.

Current policy stance

The setting of the inflation target below 4.5% last year for the first time since 2005 and the extension of the targeting horizon signal a commitment of the BCB to converge longer-term inflation expectation to lower levels. Lower future inflation would be sustained by structural reforms, allowing for lower structural interest rates. Yet, lower future inflation and interest rates will only be sustainable if Brazil continues advancing a reform agenda and improving fiscal accounts on a structural level.

Although uncertainties regarding the progress of structural reforms increased through 2017, the benign momentum in inflation allowed the BCB to continue with the easing cycle until 1Q18. The bank delivered a total 775bps in cuts, with the selic reaching 6.50%, a new historical low. The approval of the TLP rate in September 2017 also allowed for prospects of lower structural selic levels. We expect gradual hikes in the selic throughout 2019, ending the year at 7.75%.

The BCB has been using its heavy FX artillery amid the BRL depreciation. The bank started increasing outstanding swaps in mid-May by offering US$250mn/day, but due to following persistent currency weakening, it increased daily swap auctions to US$750mn. In June, when BRL peaked at 3.95 intraday – highest level since December 2015 – the BCB announced it would offer US$20bn in swaps over the following week in addition to the daily US$750mn auctions.

Since the bank started intervening, outstanding FX swaps increased by US$43.6bn amid a BRL depreciation of over 23% since early April (as of 10 September). BCB repeated in recent communications that it could move outstanding swaps “considerably” above previous highs at US$115bn in 2015 if it assesses necessary. Since the peak of US$115bn in 2015, FX outstanding swaps declined to US$17.7bn in May 2017 and are now back up to US$68.9bn as of 4 September 2018. The worsening in the external backdrop led us to revise our BRL forecast for 2018 and 2019 in spite of the BCB intervention.

We believe that the recent FX interventions were most likely driven by the BCB’s attempt to maintain low monetary policy rates in response to domestic economic conditions. The periods of highest intervention were associated with the market expecting monetary policy hikes in the near term. In fact, the BCB has ramped down interventions as expectations of tighter rates declined. We expect FX pressure to continue amid the highly uncertain political/economic outlook, volatile global conditions and a relatively low carry.

Meetings, data and information dissemination

The Monetary Policy Committee (Comite de Política Monetária – Copom) meets eight times a year (roughly every 45 days). After the meeting, the Copom releases a short statement explaining the decision. In 2016, the Brazilian Central Bank (BCB) announced changes regarding the release of the Copom and its minutes, so that the Copom result would then be released at 6pm local time on Wednesdays (no clear timing before), with the minutes being released on the following Tuesday (vs the following Thursday). These changes aimed at improving the bank’s communication, and the setting of an exact time for the policy rate release goes in line with best practices by other central banks. In 2017-end, the BCB announced that future Copom meetings will no longer need to be compulsorily held on Wednesdays.

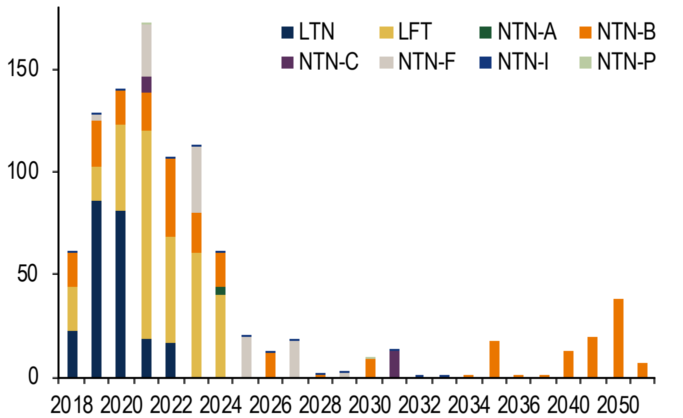
The minutes’ format also changed in 2016 to four chapters (vs three before) detailing the economic background, the inflation risks for the BCB baseline scenario, discussion on the monetary policy management, and the monetary policy decision. For transparency, the minutes end with a section detailing how the directors voted. Besides the minutes and the decision statement, the BCB publishes a quarterly inflation report in which it analyzes the Brazilian economy, as well as its updated forecasts for inflation and annual GDP within a two-year horizon. After the release of the quarterly report, board members, including the BCB’s president, give an interview commenting on it. The board posts its speeches and presentations used at public events on the BCB’s website.

Fiscal policy

Brazil has pursued primary surplus fiscal targets since 1998 in order to create conditions for the debt to GDP ratio to decline over time. Yet, since 2014 negative results were registered and we expect fiscal deficits to continue at least until 2019. The primary deficit fiscal target for 2018 is currently set at -R$159bn, and that for 2019 is set at -R$139bn. After ending 2002 at 59.9% of GDP, net public debt declined to 52.0% in July 2018 (up from 30.0% in Jan 2014). Gross government debt moved from 76.1% of GDP to 77.0% of GDP in the same period (but up from 51.5% in Dec 2013). As the situation for fiscal accounts remains challenging, we expect gross government debt to continue rising and reach 78% of GDP by 2019-end.

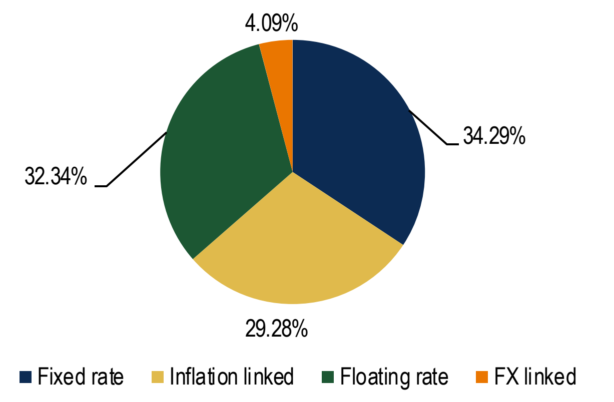
The stock of federal public debt reached R$3.7tn in July 2018, of which 96.2% is domestic debt. On domestic debt composition, 33.8% was prefixed, 30.8% was inflation-linked, 35.0% was selic-linked and only 0.5% FX-linked. This compares to 16% fixed-rate debt, 48% Selic-linked debt and 24% FX-linked debt in 2004. Regarding the

Chart 154: Brazil – maturity profile (USD bn) of local BRL denominated debt (including BRL global EXD)



Source: BCB

Chart 155: Debt profile by indexator



Source: National Treasury

external debt, 83.4% is USD-linked, 6.4% is ERU-linked, 7.4% is BRL-linked and 2.9% is linked to other currencies. The Treasury financing plan is currently focused on increasing floating debt (selic-linked), maintaining maturity profile, improving liquidity in the secondary market and expanding the investor base.

Macro drivers

Several releases tend to be market moving events. Besides the monetary policy decisions, market participants focus on the Copom minutes and the analyst survey the BCB releases every Monday morning. The key inflation releases are the IPCA and IPCA-15 from the IBGE, though market participants also focus on the broad inflation numbers released by FGV (IGP-10, IGP-M and IGP-DI). On growth, market participants focus on retail sales, industrial production, jobs creation, IBC-Br economic activity index (considered a monthly proxy for GDP) and quarterly GDP growth. The fiscal accounts situation, along with the shift toward more orthodox fiscal policy by the administration in 2016, increased market scrutiny of indicators such as tax collection as well as central government and public sector monthly primary and nominal fiscal results.

Bond market

Total federal government domestic debt was R$3.6tn and external debt was R$141.3bn in July 2018. The main local currency debt instruments are LTN (zero discount bonds), NTN-F (fixed coupon bonds), NTN-B (IPCA inflation-linked bonds) and LFT (floating rate bonds). The NTN-Cs (IGPM inflation-linked bonds) are off the run and were replaced by NTN-Bs. The Treasury has also focused on replacing fixed-rate linkers for the floating rate LFTs. Foreign investors held 12.6% of the domestic federal public debt in July 2018, up from 5.1% in December 2007 (but down from 20.8 in May 2015).

The day count convention of local bonds is (business days/252) and semi-annual coupons are compounded based on the annual coupon rate. For example, the NTN-Fs 10% coupon translates into a 4.88% payment each semester. In addition, the price to yield relation in Brazil is always expressed in terms of dirty price.

LTN. The LTNs (Letras do Tesouro Nacional) are short-term (up to five years), zero-coupon bonds that make up 24.5% of local issued federal government debt. LTNs are issued in 6, 12, 24, 36 and 48-month maturities, with the January 2025 the longest available. LTNs are traded mainly by locals.

NTN-F. The NTN-Fs (Notas do Tesouro Nacional serie F) are fixed-rate bonds with 10% coupons and semi-annual payments. The longest NTN-F bond is the January 2029 and the most liquid tenors are the 2023 and 2027.

NTN-B. The NTN-Bs (Notas do tesouro nacional serie B) are IPCA inflation-linked bonds that pay a 6% semi-annual coupon and account for 27.5% of outstanding local debt. The

IPCA is the consumer price index calculated by the IBGE, upon which the BCB's inflation target is set. The NTN-Bs are denominated in VNA (valor nominal) and settled in BRL. The NTN-B VNA is an inflation-indexed unit based on monthly IPCA variation, published by the Treasury the 15th day of each month. The longest NTN-B matures in May 2055. The liquid tenors are 2019, 2021, 2026 and 2050. Together with the NTN-C, which is indexed to FGV's broad inflation IGP-M index and is no longer issued, NTN-Bs total about R$1.1tn. The biggest NTN-B outstanding is on the 2022, followed by the 2050, the most liquid tenor in the back-end.

LFT. The LFTs (Letras Financeiras do Tesouro) are short-term (up to six years), selic-linked, zero-coupon bonds that make up 33.5% of local issued federal government debt. The total return is a function of the selic rate and the discount of the bond, as the face amount of these bonds is capitalized daily at the effective Selic rate. The LFTs are traded mainly by locals.

Auction and placement mechanism

The Brazilian National Treasury is responsible for bond issuance. Besides announcing an annual borrowing plan between January and February every year, the Treasury announces a quarterly schedule for bond auctions. The schedule contains the date for each bond auction, with specific bonds (including maturities) issued each day. The size of each offer is announced close to the auction. In addition to the traditional auctions, the Treasury conducts exchange auctions and buyback auctions. It can also conduct extraordinary auctions to make market interventions in order to reduce excessive volatility and provide price reference. Most domestic issuance is done on a competitive basis through auctions with multiple prices. The LFT and NTN-B issuance are exceptions, and placed via Dutch auctions.

Derivatives market

PRExCDI futures

The DI futures market in Brazil is the most liquid interest rate derivative market in LatAm. They are traded on the BM&FBovespa exchange in Brazil and reference the overnight interbank interest rate, the CDI (Certificado de Deposito Interbancario). The DI future rate tracks the effective interest rate between the trade date and the maturity of the contract on a 252-business day basis. Contract maturities are available for the coming four months and for every quarter thereafter. The contract is quoted on a yield basis, but cash value of the position is given by the present value per contract (R$100,000 notional), discounted by the most current traded interest rate.

At the end of initial trade date, the future is marked-to-market based on the settlement (closing) interest rate. After that, the cash value of the open position is indexed daily to reflect the actual overnight rate and at the end of each day the position is adjusted. The PnL is based on the updated value of the position against the settlement interest rate at the end of the trading session. This ensures that from the trade date until expiration, the DI futures reflect the exact difference between the traded fixed yield and the reported floating DI rate for the period between the trade date and maturity. The contract performs like a fixed for floating swaps.

All DI futures contracts mature on the first business day of the contract month. Liquidity tends to be concentrated in the January contracts[13], as they match the maturities of some LTN and the NTN-Fs. Bondholders tend to use the DI futures to switch from fixed to floating interest rate exposure. Bid-ask spreads are as narrow as 1bp for the most liquid tenors and 2-5bp in the longer tenors (in up to 10k DV01). The day count convention for DI futures (and other Brazilian fixed income) is 252 business days.

Offshore investors that are not set up to trade locally use offshore PRExDI swaps to take positions in the onshore DI futures market. With the elimination of the IOF tax, the spread between onshore and offshore rates declined significantly.

13 Contracts can be found at ODA Cmtdy CT <go> on Bloomberg.

Table 155: Summary statistics of Brazil derivative products and their markets

Product	Average daily trading volume	Average transaction size	Bid-ask spread	Fixings and other notes
Interest rate (Onshore)				
PRExDI Future	USD4mn DV01	10-25k DV01	1bp liquid tenors, 2-5bp less liquid	Monthly contracts, January expirations are most liquid
Option on DI futures	30K contracts	5K contracts	0.5% vol	Monthly contracts, January and July expirations most liquid
IDI options	500K contracts	5K contracts	5pts per contract	Monthly contracts, January and July expirations most liquid
Real interest rate futures	USD35k DV01	5k DV01	5-10bp	Most liquid contracts are the ones that match the NTN-B maturities
Interest rate (Offshore)				
PRExDI offshore swap	USD1.0mn DV01	10-25k DV01	2bp liquid tenors, 2-4bp less liquid	Matches subset of DI futures contracts, January and July expirations

Source: BM&F

Real interest rate futures (DAP)[14]

On 2 May 2017, the BM&FBovespa re-launched the real interest rates futures contract. This future works as a protection mechanism to the movement in real interest rates. It reflects the difference between the DI futures and inflation measured by the IPCA index on a 252-business day basis. The contract matures in the 15th day of the contract month, consistent with the maturities of the NTN-Bs. The size of the contract is 100,000 X R$0,00025 X IPCA.

Onshore-offshore spread[15]

The onshore-offshore spread reflects the BRL convertibility risk (in and out), as the BRL is not a deliverable currency. The spread also reflects IOF taxes. In 2010, the government increased the IOF tax from 2% to 4% and then to 6%. Notably, the government zeroed the IOF tax on fixed income inflows in mid-2013. As a result, the on-off spread declined as the cost for investing in Brazilian assets became lower relative to investing in Brazilian assets abroad.

Cupom cambial and FX swaps

The cupom cambial is an onshore dollar interest rate. There are two major instruments to trade the cupom cambial: cupom cambial futures (DDI) and the cupom cambial forward rate agreement (FRC16). The DDI has exposure to moves in the local dollar rate and moves in the FX. The FRC, also known as the clean cupom cambial, has exposure to the dollar rate but not to FX moves. The FRC is made up of two DDI contracts, one receiving leg and one paying leg. One of the DDI contracts in the FRC is the front future to remove the FX exposure. The amount in the two DDI contracts is such that it has the same present value.

Offered occasionally by the central bank, the currency swaps consist of two legs: one is the FX change + the onshore dollar rate (cupom cambial), and the other leg is the selic. When the central bank receives the FX change and the cupom cambial and pays the selic, the swap is called reverse-FX swap. When the central bank receives the selic and pays the FX change and the cupom cambial the swap is called FX swap.

14 Futuro de Cupom de IPCA. Contracts can be found at WXA Index CT <GO> on Bloomberg.

15 For more details see: Brazil: onshore-offshore spread 101 (http://research1.ml.com/C/?q=PJLqDX1ocgXItIjEpgrEYA__&r=)

16 Contracts can be found at GDA Curncy CT <GO> on Bloomberg.

Interest rate options

The two key interest rate options traded in Brazil are the swaptions (option on DI future) and IDI options (1-day Bank Deposit Index). Brazil swaptions are more common among foreign investors, while locals concentrate their positions on IDI options (options on the cumulative value of the CDI between the trade date and the maturity of the option).

FX market

The BRL is not deliverable, but its daily volume including spot, futures and non-deliverable forwards exceeds US$15bn, competing with the MXN as one of the most liquid currencies in the region. The BRL is traded during BM&F Bovespa trading hours and the dollar futures (particularly the front future) are one of the most liquid products on the exchange. BRL liquidity declines significantly in the off-hours market (over the counter), with the bid-offer widening.

PTAX: the daily reference FX fixing rate

Under new methodology implemented in 2011, the BCB surveys all 13 FX dealers[17] four times a day to get BRL price quotes. The BCB conducts one survey, choosing any point in time from 10:00am to 10:10am, 11:00am to 11:10am, 12:00am to 12:10am, and 1:00pm to 1:10pm, in which the dealers have two minutes to report their quotes.

Each foreign exchange dealer must give a quote with bid-offer for a BRL transaction in the interbank market. The BCB then excludes the outliers – the two highest and two lowest quotes – and calculates the average of the quotes. The daily PTAX is the average of all surveys.

Table 156: Brazil's FX market vital statistics and characteristics

FX product	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
Onshore						
Spot	BRL spot	US$1bn	US$10mn	10pips	<BRL=BR>	Settlement: T+2
Future	USD/BRL future-BM&F	US$15bn	US$10mn	10pips	< 0#DOL:>	Fixing PTAX
Forwards	Forward	US$500mn	US$20mn	5pips (short)	<BRLNDFOR=BR>	Fixing PTAX
Options	Options BM&F/OTC	US$1.25bn	US$25mn	0.4-0.7 vols	< BR/OPT5>	Fixing PTAX
Offshore						
NDF	Forward	US$3bn	US$10mn	3m 15 pips, 12m 75 pips	< BRLNDFOR=>	Fixing PTAX
NDO	Options	US$2.5bn	US$50mn	0.3-0.5 vols	< BR/OPT5>	Fixing PTAX

1 pip = 0.0001 BRL Source: BM&F, Reuters

Investor base

Foreign investors have increased their participation in the domestic debt market significantly in the last decade. Foreign investor participation in the domestic federal public debt was roughly 2% in December 2006, 7% in December 2008 and 12.6% in July 2018, after peaking at 20.8% in May 2015.

Brazil local mutual funds holdings have been mostly steady year-to-date. As of May 2018, it held R$3.9tn (US$1.1tn), of which R$3.5tn accounted for local fixed income instruments. In GDP terms, assets under management from pension funds and mutual funds are currently at 2008 levels, and are equivalent to 67% of GDP (55% of GDP for mutual funds and 12% of GDP for pension funds). On a regional basis, Brazil represents 66% of total assets under management in Latin America.

With small public and private pension systems, government securities holdings by pension funds are small. The public pension system (closed) is by far the largest share of the nation's overall retiree pool. The public system runs large deficits due to legacy benefits and early retirement age. As a result, the private system (open) is growing very

[17] Banco do Brasil, Bradesco, Itau Unibanco, Credit Suisse, Citibank, Santander, JP Morgan, Bank of America Merrill Lynch, BTG Pactual, BNP Paribas, Deutsche Bank, Goldman Sachs, and Morgan Stanley.

rapidly, but is still very small compared to other LatAm countries. Associação Brasileira das Entidades Fechadas de Previdência Complementar (ABRAPP) oversees the open and closed pension funds offering defined-contribution or defined-benefit plans.

Currently, rules on pension funds set a minimum 2-year average duration in bonds portfolios. Those funds can hedge 100% of that exposure via derivatives and still comply with the rule. In practice they would ask the Brazilian Treasury for bonds in its regular auctions but would immediately hedge that exposure, adding pressure on the local yield curve. In fact, part of the yield curve slope is usually attributed to that "non-real" demand for duration.

However, in February 2018 the government announced a change deciding to gradually drop that rule starting in September of this year. Thus, the minimum required duration in pension funds' portfolios will progressively decline until August 2019 when no minimum duration will be required. The practical effect of this change is likely to be a decline in demand for hedged long dated NTN-Fs by pension funds, and probably less demand for hedge in the local yield curve after Treasury auctions.

Rules, regulations, capital control and taxation

Taxation depends on the instruments, holding periods and origin of funds. The fiscal treatment regarding the income tax varies according to the origin of funds (from tax havens or not) and type of investment. The IOF is levied on credit and fixed income transactions of locals and foreigners. The IOF treatment depends on the type and investment tenor. All investors incur an IOF charged on very short-term gains up to a 30-day holding period, based on a declining rate.

Foreign investors are allowed to invest in Brazil, but under Resolution 4,373 must register in the BCB. Foreign investor inflows to buy local fixed income securities were taxed with a 6% IOF up to June 2013. When buying longer-maturity bonds, investors dilute the tax burden over the duration of the bond. The IOF on foreign inflows into fixed-income was eliminated in 2013. The outflows of foreign currency do not incur IOF. In July 2011, the government introduced a 1% IOF on the daily increase in the short USD long BRL positions in derivatives, but this was also removed in 2013. Investors should check with their tax consultants for specific details and issues.

Clearing and settlement

Government securities acquired in primary placement auctions are settled on T+1 through the selic, which is administered by the BCB. Securities traded in the secondary market and on repo with the BCB are settled on a delivery versus payment (DVP) basis and typically settle on T+1, but could settle up to T+4.

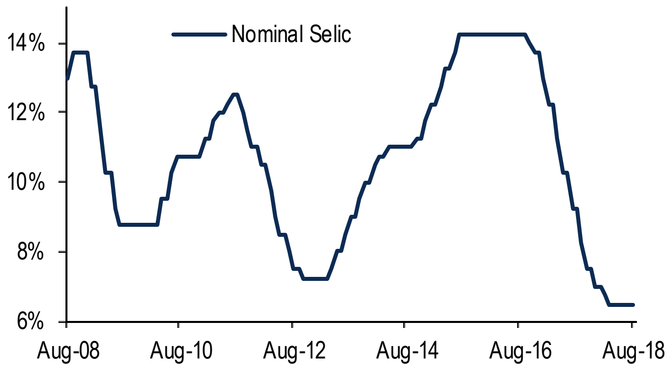
Table 157: History of IOF tax on foreign operations

	19-Sep-09	4-Oct-10	18-Oct-10	28-Mar-11	6-Apr-11	26-Jul-11	1-Dec-11	29-Feb-12	12-Mar-12	14-Jun-12	5-Dec-12	4-Jun-13	4-Jun-14	15-Jul-16
Portfolio														
Fixed income	2%	4%	6%	6%	6%	6%	6%	6%	6%	6%	6%	0%	0%	0%
Equities	2%	2%	2%	2%	2%	2%	0%	0%	0%	0%	0%	0%	0%	0%
Deposit margin on	0.38%	0.38%	6%	6%	6%	6%	6%	6%	6%	6%	6%	0%	0%	0%
External loans														
90 days	5.38%	5.38%	5.38%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
180 days	0%	0%	0%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
270 days	0%	0%	0%	6%	6%	6%	6%	6%	6%	6%	6%	6%	0%	0%
1 year	0%	0%	0%	6%	6%	6%	6%	6%	6%	6%	6%	6%	0%	0%
2 years	0%	0%	0%	0%	6%	6%	6%	6%	6%	6%	0%	0%	0%	0%
3 years	0%	0%	0%	0%	0%	0%	0%	6%	6%	0%	0%	0%	0%	0%
5 years	0%	0%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%
Long BRL positions	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%	0%	0%	0%

(*) On 16 March 2012, the government reduced the bracket from 1% to zero for export hedges.

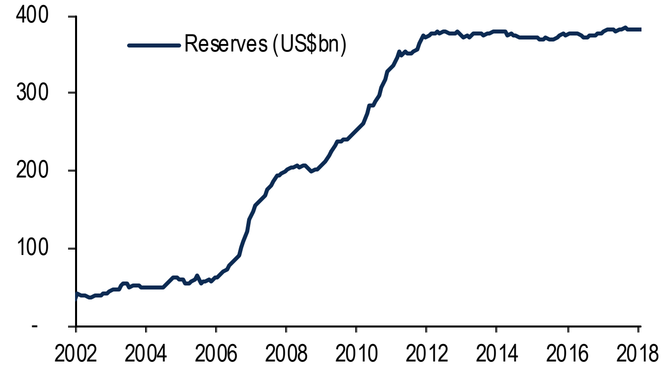
Source: Brazilian Central Bank, Finance Ministry, Receita Federal (IRS), BofA Merrill Lynch Global Research

Chart 156: BCB lowered selic rate rapidly throughout 2017



Source: BCB

Chart 157: International reserves stabilized



Source: BCB

Table 158: Summary of Brazil bond markets and products

Instrument	LTN	NTN-F	NTN-B
Issuer	Federal government (Tesouro Nacional)	Federal government (Tesouro Nacional)	Federal government (Tesouro Nacional)
Currency	BRL	BRL	IPCA-linked VNA (settled in BRL)
Minimum Denomination	1000	1000	NTN-B VNA
Tenor	1-4 years	1-10 years	1-40 years
Interest rate/coupon	0	10% semiannual compounded	6% semiannual compounded
Coupon Payments	Zero coupon	Semi-annual	Semi-annual
Day Count Calculation	Bus/252	Bus/252	Bus/252
Amortization Schedule	Bullet	Bullet	Bullet
Amount outstanding	BRL884bn	BRL393bn	BRL993bn
Secondary Market			
Trading	OTC or Exchange (BM&F SISBEX)	OTC or Exchange (BM&F SISBEX)	OTC or Exchange (BM&F SISBEX)
Quotation Convention	Yield	Yield	Yield
Settlement Period	T+1 (foreign clients tend to use T+2 or T+3)	T+1 (foreign clients tend to use T+2 or T+3)	T+1 (foreign clients tend to use T+2 or T+3)
Average Daily Turnover	BRL5.8bn	BRL2.4bn	BRL4bn
Bid/offer spread (0-5Y)	2-5bp (can vary between 1-10bp)	2-5bp (can vary between 1-10bp)	2-5bp (can vary between 1-10bp)
Bid/offer spread (5Y+)	2-5bp (can vary between 1-10bp)	2-5bp (can vary between 1-10bp)	2-5bp (can vary between 1-10bp)
Average trade size	50,000 bonds	50,000 bonds	10,000 bonds
Clearing Mechanism	Selic book entry	Selic book entry	Selic book entry
Major players	Local banks and local funds	Local banks and local funds	Local banks and local funds
Trading hours	9am-6pm (Sao Paulo, more liquidity 10-4)	9am-6pm (Sao Paulo, more liquidity 10-4)	9am-6pm (Sao Paulo, more liquidity 10-4)
Regulations			
Restrictions on Foreign Investment	No restriction, required registration with the BCB	No restriction, required registration with the BCB	No restriction, required registration with the BCB
Custodian	Banks	Banks	Banks
Withholding Tax	Locals 15-22.5%, nonresidents 0%	Locals 15-22.5%, nonresidents 0%	Locals 15-22.5%, nonresidents 0%
Capital gains Tax	Locals 15-22.5%, nonresidents 0%	Locals 15-22.5%, nonresidents 0%	Locals 15-22.5%, nonresidents 0%
Entry/Exit	No IOF tax on foreign inflows/no exit tax	No IOF tax on foreign inflows/no exit tax	No IOF tax on foreign inflows/no exit tax
Primary Auctions			
Auction Style	Competitive auction	Competitive auction	Dutch auction
Average Issue Size	Varies (minimum tender 1,000 bonds)	Varies (minimum tender 1,000 bonds)	Varies (minimum tender 1,000 bonds)

Source: BofA Merrill Lynch Global Research, ANBIMA, National Treasury, BCB, Bloomberg

Local/external debt ratings

	Local	External
2018	Ba2/BB-/BB-	Ba2/BB-/BB-
2017	Ba2/BB/BB	Ba2/BB/BB
2016	Ba2/BB/BB	Ba2/BB/BB
2015	Baa3/BBB-/BB+	Baa3/BB+/BB+
2014	Baa2/BBB-/BBB	Baa2/BBB-/BBB
2013	Baa2/BBB-/BBB	Baa2/BBB/BBB
2012	Baa2/A-/BBB	Baa2/BBB/BBB
2011	Baa2/BBB+/BBB	Baa2/BBB/BBB
2010	Baa3/BBB+/BBB-	Baa3/BBB/BBB
2009	Baa3/BBB+/BBB-	Baa3/BBB/BBB
2008	Ba1/BBB+/BBB-	Ba1/BBB/BBB
2007	Ba1/BBB/BB+	Ba1/BB+/BB+
2006	Ba2/BB+/BB	Ba2/BB/BB
2005	Ba3/BB/BB-	Ba3/BB-/BB-
2004	Ba3/BB/BB-	B1/BB-/BB-
2003	B2/BB/B+	B2/B+/
2002	B2/BB/B	B2/B+/
2001	B1/BB+/B+	B1/BB-/
2000	B1/BB/B+	B1/B+/
1999	B3/BB-/B	B2/B+/
1998	Caa1/BB+/BB-	B2/BB-/

Source: Bloomberg, , Moody's, S&P, Fitch

Conventions

Bonds
Quote: Yield to maturity
Settlement: T+1:
Basis: Bus/252
Coupon frequency: Semi-annual (compounded rate). LTNs and LFTs are bullet bonds.

IRS (Interest rate future)
Fixing: DI
Coupon frequency: Bullet, daily settled

CCS
Fixing: Cupom cambial x DI
Coupon frequency: Act/360 on dollar leg, Bus/252 on BRL leg

Bloomberg pages
OTC BRL <GO> – Market monitor
ODA <cmdty> – CT DI futures
CDIE <GO> – Market implied rates
BNLTN Govt <GO> – LTN bonds
BNTNF Govt <GO> – NTN-F bonds
BNTNB Govt <GO> – NTN-B bonds
BMLT <GO> – LatAm local markets

Reuters pages
<BRL=>

Useful official websites

Central bank
http://www.bcb.gov.br/

Finance Ministry
http://www.fazenda.gov.br/

Statistics agency
http://www.ibge.gov.br/home/

Pension association
http://www.abrapp.org.br

Bond auctions
http://www.tesouro.fazenda.gov.br/ru/auctions

Useful market websites

BM&F – Futures, Commodities, Stock Exchange
http://www.bmfbovespa.com.br/

B3 – Official website after the fusion between BM&F and Cetip
http://www.b3.com.br/en_us/

Association of Capital Markets Operators (ANBIMA)
http://portal.anbima.com.br/

*Links are to third-party websites, and do not contain BofAML Global Research.

Chile

Ana Madeira
Merrill Lynch (Brazil)

Overview

The Chilean local government debt market is the fifth largest in Latin America after Brazil, Argentina, Colombia and Mexico. Corporate borrowers represent the bulk of the local debt market, followed by the central bank and the Treasury. The FX and the fixed income derivatives markets are liquid and the third largest in the region.

Chile is the most open economy in LatAm and has the largest exposure to China. Mining represents more than 50% of exports. A structural fiscal rule has been set to isolate public finances from copper price swings, and the government has substantial savings abroad to face copper price declines.

Central Bank of Chile

Objectives

Banco Central de Chile (BCCh) is legally autonomous with a mandate to preserve price stability and the adequate functioning of external and internal payments. To fulfill its price stability objective, BCCh can regulate the amount of money and credit in the system. It has been prohibited from financing the government.

To fulfill its domestic payments stability role, BCCh is the lender of last resort, and has some regulatory powers over the financial system. To ensure external payments stability, meaning to avoid balance of payments crises, BCCh can determine the FX policy, impose temporary foreign exchange controls ("encaje"), and regulate international investments and loans taken by financial institutions. BCCh has a significant degree of autonomy to fulfill its mandates.

Legal framework

Two basic instruments provide the BCCh with its legal framework. Article 108 establishes BCCh's autonomy, and Article 109 prohibits the central bank from lending to the government and its entities, except in cases of war or the threat of war. Law 18840, approved in October 1989, sets out BCCh's main objectives, capacities and organizational structure. It also outlines the method of appointing board members, and how the board should function.

Decisions

BCCh's highest authority is its board ("consejo"). The board has five members, who are appointed by the president after being approved by the Senate. Tenures last 10 years and board members can renew their mandates. Appointments are staggered, with one every two years.

Every five years, the president of the republic directly appoints the president of the central bank from among the five board members. The president can renew his

Table 159: Key facts

Name	Banco Central de Chile
Founded	1925
Governor	Mario Marcel
Board members	5
Autonomous	Yes
Government representative on board	Finance minister can attend meetings but cannot vote
Terms	10
Inflation target	3±1%
Latest move	On hold (September 4)

Source: BCCh

Table 160: Key links

Main page
Board members
Inflation Report
Calendar, communiqués and minutes
Statistics
Reports
Presentations and speeches
Legal framework
English version
Ministry of Finance
National Department of Statistics

Source: BofA Merrill Lynch Global Research

mandate. The board selects the vice governor, who also acts as vice president of the central bank. The president, with Senate agreement, can remove one or all members of the board, but only when they violate the bank's mandates.

The board requires a minimum of three members be present at meetings to make decisions, which are approved by the majority of the members who attend the meetings. The member presiding over the meeting has an additional vote in case of a tie. The finance minister can attend and speak at the meeting, but does not vote. Several BCCh officials can attend the monetary policy decision meeting, including the general manager of the bank, the chief economist and the head of financial operations. Only some of them can speak at the meetings.

The current board

Mario Marcel, the current BCCh governor, has an M. Phil. in economics from the University of Cambridge. He worked for the government of Chile for 13 years and was the Budget Director from 2000-2006. During those six years, Marcel implemented reforms in the conduct of fiscal policy, government asset and liability management, the budget system and public administration. Prior to his appointment to the board, Marcel worked at the World Bank, at the Organization for Economic Cooperation and Development (OECD), and at the Inter-American Development Bank (IDB).

There is an unwritten rule in Chile that says three of the five board members are closer to the ruling coalition and two are closer to the opposition coalition[18]. Of the current members, Rosanna Costa and Alberto Naudon are perceived as being closer to government coalition *Chile Vamos* (center-right). Joaquin Vial was linked to the Christian Democrats (Nueva Mayoría) and headed the macroeconomic policy unit at the Ministry of Finance in a Concertación government from 1992-1994; however, it was former President Pinera (Chile Vamos) who appointed him to the board, and more recently he openly moved closer to the centre-right. Pablo Garcia and Mario Marcel are closer to the government coalition Nueva Mayoría (center-left).

In their public speeches, board members stick to the central bank's official view of the economy, so it is not easy to get a clear measure of how dovish/hawkish they are. Overall, we view Marcel more on the dovish side of the spectrum, with views aligned with inflation targeting and a floating exchange rate. In our view, the board turned slightly more hawkish after Pablo Garcia replaced Manuel Marfan in December 2013. We see Pablo Garcia as a classic inflation targeter, but less hawkish than Alberto Naudon. Joaquin Vial is probably the most hawkish, followed by Rosanna Costa. Marcel replaced Rodrigo Vergara, the previous BCCh president, in December 2016. Board members remain in office for a ten-year term and may be renewed. Replacement is staggered every two years.

Monetary policy regime and instruments

The central bank follows a fully fledged inflation targeting regime. In 2007, it began

Table 161: Board members

Name	Date appointed	Current term ends	Term limit ends	Background	Known policy stance
Mario Marcel	Dec 2016	Dec 2026	Dec 2026	M. Phil. economics, University of Cambridge; Budget director (2000-2006).	We view Marcel on the more dovish side of the spectrum.
Pablo Garcia	Jan 2014	Jan 2024	Jan 2024	PhD economics, MIT; IMF (2012-2013); BCCh (1999-2010).	We view Garcia as a classic inflation targeter, and thus as more hawkish than predecessor Manuel Marfan.
Alberto Naudon	Mar 2018	Mar 2028	Mar 2028	PhD economics, UCLA.	We view Naudon on the more hawkish side of the spectrum.
Joaquin Vial	Feb 2012	Feb 2022	Feb 2022	PhD economics, University of Pennsylvania; director of Budget (1997-2000); chief LatAm economist, BBVA (2008-2011).	We view Vial on the more hawkish side of the spectrum.
Rosanna Costa	Jan 2017	Jan 2027	Jan 2027	BSc business administration with a minor in economics, Pontifical Catholic University of Chile; Budget director (2010-2013).	We view Costa on the more hawkish side of the spectrum.

Source: BCCh, BofA Merrill Lynch Global Research

[18] Since democracy was restored in Chile in December 1989, two main coalitions – center-left Concertación and center-right Alianza – have ruled Chile. The Concertación (now called Nueva Mayoria) ruled in March 1990-March 2010 and March 2014-March 2018, and the Alianza (now called Chile Vamos) in March 2010-March 2014 and since March 2018. President Sebastian Pinera (Chile Vamos) won the presidential election in December 2017 and took office in March 2018.

targeting annual CPI inflation to stay around 3%, with a +/-1% tolerance range. To interpret the information on inflation at 12-month or shorter horizons, the central bank also takes into account core price measures due to the volatility of some components of headline inflation.

The central bank has to meet its target on a two-year horizon, which was selected because BCCh studies show that this is the horizon over which monetary policy has the biggest impact (eight quarters). In our view, the horizon reference is important because it makes the deviation of 24-month inflation expectations from 3% important to BCCh decisions. On its website, BCCh states that "monetary policy actions are based on the expected evolution of inflation on a roughly two-year horizon, and not necessarily on its current behavior" (our translation). Survey-based inflation expectations and two-year inflation swap breakevens are closely monitored. The target is symmetric, as BCCh cares as much if it undershoots the target as if it overshoots it.

BCCh implements its monetary policy by the definition of an objective for the interbank rate. The value of this objective rate is known as the monetary policy rate (TPM in Spanish). To bring the interbank rate (known as Cámara in Chile) to the desired level, BCCh regulates the liquidity or reserves of the financial system through open market operations, passive and active repos, credit lines, and liquidity deposits. BCCh can also change reserve requirements, but in practice these have been stable for many years.

Exchange rate regime and instruments

BCCh has pursued a free floating exchange rate policy since September 1999. It has intervened three times since then, selling USD in 2001 and buying USD in 2008 and 2011. BCCh intervenes in the FX market if it determines CLP has deviated substantially from its equilibrium and future reversions could be costly. The bank also based the 2008 and 2011 interventions on the premise that its international reserves were low.

FX interventions are very transparent when they take place, and are large in size; BCCh announces the total amount of the intervention and the daily amount. The 2008 intervention was US$8bn and 2011's was US$12bn. This compares to a daily FX turnover of about US$1bn. In 2008, it did not complete the announced program, as market forces helped the CLP weaken against the USD after Lehman's collapse.

Other functions

BCCh sets reserve requirements and can regulate local banks' investment and borrowing from abroad. BCCh is the lender of last resort. It can also impose capital controls in the form of a mandatory reserve requirement on credits, deposits, or investments abroad or from abroad. These controls, known as "encaje", cannot exceed 40% of the principal, and can extend for one year, after which the board has to approve them again. A board member majority is needed for approval of these controls and they have to be based on the need for the stability of the currency or financing the balance of payments.

Table 162: BCCh Meetings and releases in 2018

	Monetary policy meeting	Monetary policy minutes	Economic report to Congress
Jan			
Feb	1 Feb	16 Feb	
Mar	20 Mar	5 Apr	Present 1Q MPR
Apr			
May	3 May	18 May	
Jun	13 Jun	28 Jun	Present 2Q MPR
Jul	24 Jul	8 Aug	
Aug			
Sep	4 Sep	21 Sep	Present 3Q MPR
Oct	18 Oct	6 Nov	
Nov			
Dec	4 Dec	19 Dec	Present 4Q MPR

Source: BofA Merrill Lynch Global Research

Current policy stance

The policy rate remained on hold at 3.50% from December 2015 until December 2016, and declined 100bp since. The policy rate has been on hold at 2.50% since May 2017 and at its last meeting, the bank removed the easing bias and signaled a neutral stance reducing the risks for the benchmark rate to move below the 2.50% level.

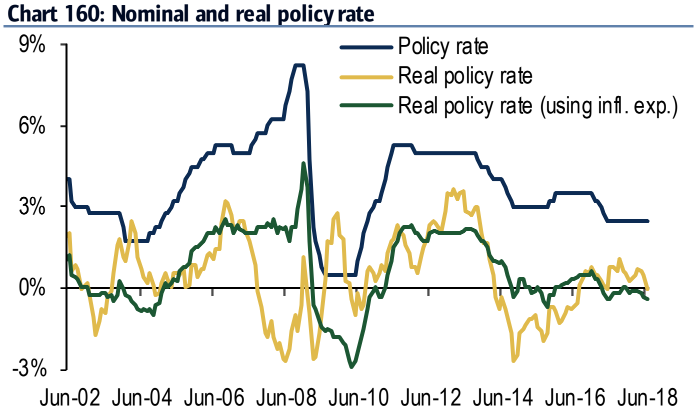
We expect the central bank to remain on hold and start the hiking cycle at its last meeting of the year, in December. The economy has been recovering but the output gap will remain negative this year according to our estimates, while inflation continues to accelerate but core measures remain somewhat soft with the headline expected to end the year below the 3.00% target still. In its 3Q MPR, the bank revised up its GDP growth forecasts to 4.00-4.50% (from 3.25-4.00%) for 2018 and kept it at 3.25-4.25% for 2019. The revised its inflation forecasts up also to 3.1% (from 2.8% before) for 2018 and kept it at 3.0% for 2019.

Meetings, data and information dissemination

BCCh announced some changes starting January 2018: monetary policy rate decision meetings will decrease to eight a year from 12 before; the monetary policy rate decision statement will be longer and include vote details; the Inflation Report (MPR) will now be published the day after the meetings in March, June, September and December.

The day before the policy rate decision meeting, the bank releases the Antecedentes de Política Monetaria, which include content from the presentation that the staff makes to the board at the meeting. Overall, the content is not very informative, but it hints at how the staff views the outlook. The board receives the presentation two working days before the meeting, and the actual presentation slides are made available the day after the meeting.

Chart 160: Nominal and real policy rate

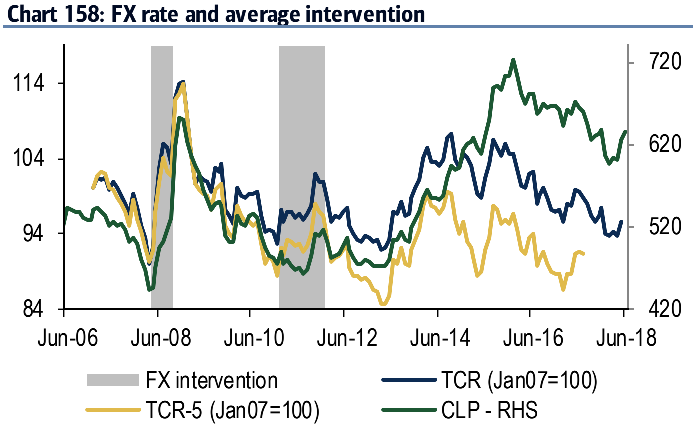


Source: BCCh, INE

Chart 161: Inflation targets and ranges

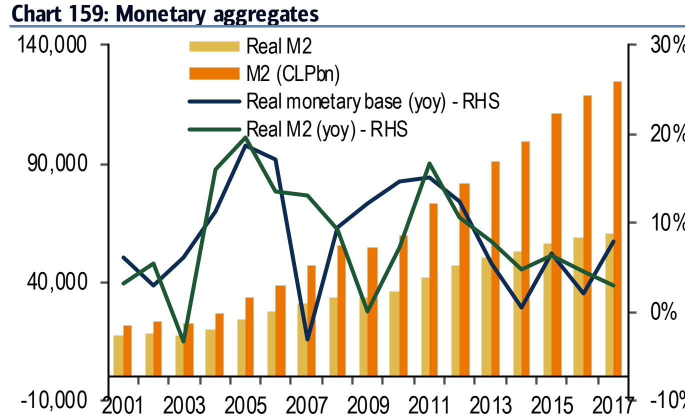
Source: BCCh, INE

Chart 158: FX rate and average intervention



Source: BCCh

Chart 159: Monetary aggregates



Source: BCCh

The MPR is released four times a year, usually in March, June, September, and December. Sometimes it is presented later, as BCCh's governor waits for the Senate to give a date to hear the presentation. The central bank updates its outlook for the economy and inflation in this report. In the meetings between reports, all economic data are compared to the outlook in the MPR.

Meeting minutes are released on the 11th working day after they take place. Minutes make the vote of each board member explicit, and show the policy options that they analyze. BCCh is obligated to publish the most important macro and financial variables, and estimates the IMACEC, a monthly activity indicator, as well as national account data.

Fiscal policy

Chile has based its fiscal policy on the concept of structural balance[19] of the consolidated central government since 2001. In simple terms, this means budgeted spending will be in line with cyclically adjusted fiscal revenues, including an adjustment of mining-related revenues to copper and molybdenum prices. The government targeted a balanced structural position by the end of Michelle Bachelet's administration. The government has the capacity to expand fiscal policy if there is a shock, as it has about US$14.7bn in the sovereign wealth fund (ESSF).

Debt issuance. The central government had been a net creditor until 3Q16, with gross debt and net debt with respect to GDP reaching 23.6% and 4.4% in 2017. The government increased issuance somewhat following the 2010 earthquake with the dual goals of financing the reconstruction effort and building benchmark maturities in the sovereign yield curve. Low debt levels coupled with solid fiscal management and strong institutions have led Chile to be ranked as one of the lowest-risk credits in EM by all three rating agencies.

Macro drivers

In terms of market impact, the most important macro data releases are monthly CPI and the IMACEC economic activity proxy, both released during the first full week of the month. Toward month-end, an economic activity report is released with details on industrial production, copper sales, retail sales, construction activity and other variables. Additionally, the BCCh publishes a monthly economist's expectations survey and a biweekly market maker expectations survey, which include GDP, monetary policy rate, inflation and USD/CLP local debt market forecasts.

Bond market

The Treasury and central bank represent a significant portion of the domestic fixed income market. The central bank issues inflation bonds up to 30 years and nominal bonds up to 10 years. The Treasury issues nominal and inflation bonds up to 30 years. Primary dealers authorized to participate in the auction process include banks, pension funds, insurance companies and local stock brokers.

A large share of government debt is inflation-linked. The demand for inflation assets comes from insurance companies and pension funds. Local corporations also issue inflation-linked bonds in order to raise cheaper funds. Bonds are issued in Unidades de Fomento (UF), which is a local currency indexed to inflation.

BCP. Fixed-rate bonds issued by the central bank denominated in CLP. Bonds have maturities up to 10 years. All newly issued BCPs have a 6% coupon while newer issues have a 4% coupon. The BCP represents the largest series of fixed-rate government bonds outstanding, with CLP3.0tn outstanding, roughly 8.3% of local government debt.

BCU. Inflation-linked bonds issued by the central bank, denominated in Unidades de Fomento and settled in CLP. The UF is an inflation-linked unit published by the central bank. Bonds have maturities of up to 30 years. All newly issued BCUs have a 3% coupon

19 From a conceptual standpoint, cyclically adjusted balance is more appropriate.

while a few older issues have 5% coupon. With CLP4.9tn outstanding, it represents 13.5% of the local government debt.

BTP. Fixed-rate bonds issued by the treasury department, denominated in CLP. Bonds have maturities up to 30 years. Most BTPs carry a 6% coupon, but new issues have 4.5-5% coupons. With CLP14.7tn outstanding, it represents 40.6% of the local government debt.

BTU. Inflation-linked bonds issued by the Treasury, denominated in UF and settled in CLP. Bonds have maturities up to 30 years. Newly issued BTUs have a 1.5-2% coupon while older issues mostly have 3.0% coupons. The BTU represents the largest series of UF-linked government bonds outstanding with CLP20.6tn, about 56.9% of the local government debt.

PDBC (Pagares Descontables del Banco Central). A zero-coupon, short-term discount note issued with the following maturities: 30, 60, 90, 180 and 360 days. There is a total of CLP7.7tn outstanding and the bulk of the trading activity is carried by banks that use it to fine-tune reserves.

Global CLP. Issued in 2010, a single external bond denominated in CLP and settled in USD. The bond carries a 5.5% coupon and matures in August 2020. In September 2011 the Global CLP was reopened, increasing the total outstanding to CLP434bn. The government has stated its plans to continue issuing more Global CLPs to contribute to the "internationalization of the CLP".

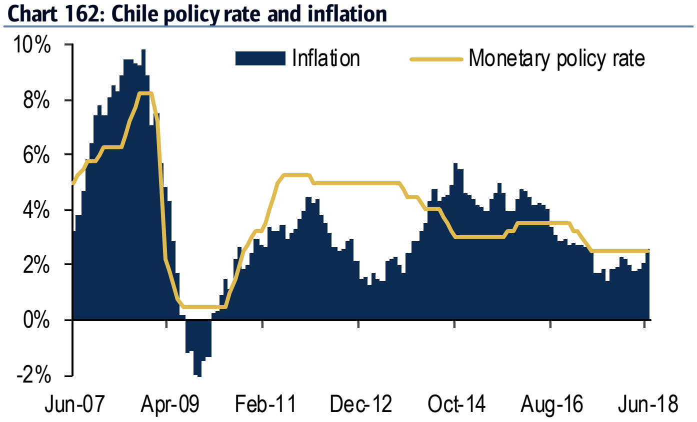
UF (Unidade de Fomento). An inflation-linked unit of account published daily by the BCCh and used to index inflation-linked bonds and other inflation-linked instruments. The UF is calculated daily such that the shift in the UF from the 10th of the current month until the 9th of the following month is equal to the previous month's inflation. In any given day between those two dates the UF's growth rate is proportional to the inflation rate, compounded daily.

Auction mechanism. The annual issuance schedule for the placement of Treasury bonds each month is published before the beginning of the year by the Office of Public Debt at the Finance Ministry. In its role of Fiscal Agent of the Treasury, the BCCh announces and conducts the placement auctions monthly. The central bank also coordinates with the Treasury to issue central bank bonds monthly. Placements of Treasury and central bank bonds are done via Dutch auctions. Banks, mutual funds, pension funds and insurance companies are eligible to participate in primary auctions.

Derivatives market

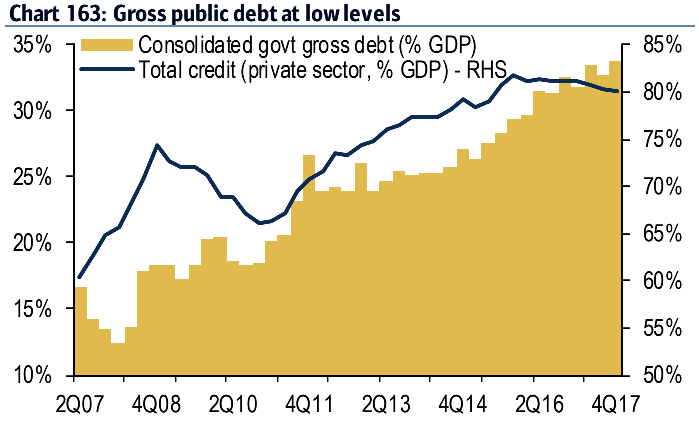
There is an active market for interest rate swaps (IRS), with the most common instruments the CLPxCAM (fixed-for-floating interest rates swaps) and UFxCAM (fixed inflation-linked/floating local rate). Investors can also enter into cross currency swaps

Chart 162: Chile policy rate and inflation



Source: BCCh

Chart 163: Gross public debt at low levels



Source: Haver Analytics

(CLPxUSD and UFxUSD) and basis swaps (CAMxLIBOR). In addition, CLP-UF forwards are widely traded given the preponderance of UF-linked debt.

CLPxCAM swaps

The CLPxCAM swap is a fixed for floating swap: one leg pays a fixed annualized rate and one leg receives a floating rate based on the Tasa Camara (CLICP Index <GO> on Bloomberg), an overnight rate reported by the central bank and representing the average prevailing interbank lending rate.

For tenors under 18 months, the swaps are bullet, with a single exchange of fixed for floating at expiration. For tenors over 18 months, cash flows are exchanged semi-annually on an actual/360-day count. The floating leg is determined by compounding the daily CAM rates over the reset period. Liquidity is relatively good, with bid-ask spreads around 4bp for 10K DV01.

UFxCAM swaps and inflation breakevens

An investor entering into an UFxCAM swap agrees to pay a fixed rate on a UF notional, and receives a floating rate indexed to the Tasa Camara, paid on a CLP notional. On the trade date, the UF and CLP notionals are equated using the spot UF rate at settlement. Cash flows are exchanged semi-annually with the UF payment converted to CLP at the prevailing UF rate. Since the UF rate follows inflation, a UF payer in an inflationary environment will owe increasing amounts at each settlement date. At maturity, investors exchange notional based on the prevailing UF rate.

From a conceptual point of view, a UFxCAM receiver can be thought of as long an inflation-linked bond, or simply long inflation. So, a UFxCAM payer is short an inflation-linked bond, or simply short inflation. Corporations often issue inflation-linked debt (thereby being short inflation) and receive UFxCAM swaps to hedge their inflation exposure. At times, large corporate hedging demand can push UFxCAM swaps to negative rates in the short tenors, 6 months to 1 year.

Market implied breakeven inflation rates can be calculated using the nominal and inflation-linked swaps. The breakeven is the rate at which investors are indifferent from entering into a UFxCAM or CLPxCAM swap, and can be derived as follows:

$$(1 + x) / (1 + y) - 1 \text{ where } x = CLP \times CAM \text{ rate and } y = UF \times CAM \text{ rate}$$

Breakeven inflation does not account for liquidity, term premium or convexity. An investor that expects inflation to be higher than the breakeven rate can benefit from receiving UFxCAM and paying CLPxCAM. Investors may execute the trade in two legs, or can trade the breakeven as a standalone product. Liquidity is concentrated from 2-10 year tenors.

Cross currency and basis swaps

Cross currency swaps usually trade on CLPxUSD and UFxUSD based on the LIBOR. Most common are semi-annual basis and actual/360-day count. An investor agrees to pay the fixed rate (CLP or UF), and in exchange receives a floating rate equal to 6-month USD LIBOR. Notional is exchanged at trade inception and then at maturity, so the fixed rate payer is long the foreign currency, such as USD or EUR, for the duration of the trade, and therefore is exposed to the currency risk.

Investors may also trade basis swaps, which are floating-floating swaps where one investor pays the floating Camara rate and receives LIBOR + spread. Cross currency and basis swaps are often used by the local banking system in order to access an attractive source of USD funding.

FX market

USD/CLP is the third most traded currency pair in LatAm behind USD/MXN and USD/BRL, with average daily turnover of around US$2bn. The CLP is non-deliverable offshore.

The onshore spot is the most liquid FX instrument. Forward outright and FX swaps are also liquid. USD/CLP forwards are settled against the daily fix called the Dolar Observado published by central bank. Local pension funds are active in the FX market as hedgers of the currency exposure on their sizeable foreign investment position.

Investors may also enter into CLP-UF and USD-UF forwards. In either case, the buyer of the forward is entering into agreement to buy/sell CLP (or USD) at a future date and sell/buy UF. Contracts are settled against the UF index. The buyer of the forward contract profits if inflation, as reflected in the CLP-UF rate, is higher than what is priced in by the market over the life of the contract.

Table 163: Summary statistics of Chile derivative products and their markets

Product	Average daily trading volume	Average transaction size	Bid-ask spread	Fixings and other notes
Interest rate swap				
CLP x CAM (Camara) swap	75K DV01	5-10K DV01	4-5bp	Most liquid 1y, 2y, and 5y
Real rate swap				
UF x CAM swap	75K DV01	5K DV01	4-5bp up to 5y, 5-7bp longer tenors	Out to 15 years, not liquid out to 18 months
Inflation forwards				
CLPUF forwards	UF 10mn	UF 500,000	CLP10-20 (1m to 1y)	80% volume on first two inflation months
Cross-currency swaps				
CLP x LIBOR	20K DV01	USD 20mn	10bp	Convention 6m LIBOR plus spread, most liquid 2-5y

Source: BofA Merrill Lynch Global Research

Table 164: Chile's FX market Vital statistics and characteristics

FX product	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
Onshore						
Spot	CLP Spot	USD2.0bn	USD1mn	20pips	<CLP=>	Settlement: T+1
Forwards	NDF on CLP	USD1.5bn	USD10mn	10-15pips	<CLPNDF=>	Spot vs longer dates
Offshore						
NDF	FX outright	USD750mn	USD10mn	30pips	<CLPNDF=>	Fixing observado
NDF	FX swaps	USD1bn	USD20mn	20 pips		
NDO	ND Options	USD50mn	USD10mn	10bp	<CLPVOL>	Fixing observado

1 pip = CLP0.01
Source: Reuters

Table 165: Pension fund limits (% of AUM)

	A	B	C	D	E
Sovereigns	30-40	30-40	35-50	40-70	50-80
Equities	80	60	40	20	5
Foreign Investment	45-100	40-90	30-75	20-45	15-35
Unhedged foreign investment	30-50	25-40	20-35	15-25	10-15

Source: Superintendencia de Pensiones

Investor base

Chile's local investor base is quite large given the size of its local pension fund and insurance industries. Local insurance firms make up the largest demand for inflation-linked debt and related instruments.

The pension system was privatized in 1981, requiring individuals to make contributions to individual savings accounts managed by one or more private management companies, or administrators known as AFPs. Pension fund assets under management totaled over US$176.9bn (59.7% of GDP). Mutual fund AUM accounted for 17% of GDP.

The total AFP investment portfolio has close to 60% invested in fixed income securities (domestic and offshore) and 40% invested in equities (domestic and offshore). There are legal limits to pensions' asset allocations, which sometimes affect their investment decisions. In particular, limits on unhedged foreign investments affect pensions' participation in the FX forwards market.

Rules, regulations, capital control and taxation

Foreign investors and institutions can invest and trade in the local market, but are required to obtain a Taxpayer Identification Number (RUT: rol unico tributario).

Non-domiciled and nonresident individuals and entities are subject to an additional tax (AT), a withholding tax that applies to Chilean earned income and to certain specific payments defined by law. Generally, capital gains are considered normal income. Also, any premium payable on redemption of the securities will be treated as interest and subject to the Chilean interest withholding tax, as described above. The AT rate is currently 35%, but drops to 4% for interest income paid on loans or bonds to foreign financial institutions. In addition, the rate may vary (or even be exempt) for residents of countries with a dual tax treaty with Chile.

As a reflection of Chile's intention to promote its capital markets, legislation enacted in April 2009 grants resident and nonresident investors a tax benefit for capital gains obtained from the transfer or sale of debt securities under certain conditions.

Clearing and settlement

Most local government bond transactions settle on T+1, but T+0 and T+2 are available under certain conditions when both counterparties agree during time of trade. Settlement and clearing are carried out by Deposito Central de Valores (DCV), a local depository and clearing institution. Transactions on swaps and most derivatives settle on T+2.

Local/external debt ratings

	Local	External
2018	A1/AA-/A+	A1/A+/A
2017	Aa3/AA-/AA-	Aa3/A+/A+
2016	Aa3/AA+/AA-	Aa3/AA-/A+
2015	Aa3/AA+/AA-	Aa3/AA-/A+
2014	Aa3/AA+/AA-	Aa3/AA-/A+
2013	Aa3/AA+/AA-	Aa3/AA-/A+
2012	Aa3/AA/AA-	Aa3/AA-/A+
2011	Aa3/AA/AA-	Aa3/A+,/A+
2010	Aa3/AA/A+	Aa3/A+/A
2009	A1/AA/A+	A1/A+/A
2008	A1/AA/A+	A2/A+/A
2007	A1/AA/A+	A2/A+/A
2006	A1/AA/A+	A2/A,/A
2005	A1/AA/A+	Baa1/A/A
2004	A1/AA/A+	Baa1/A/A
2003	A1/AA/A+	Baa1/A-/A-
2002	A1/AA/AA-	Baa1/A-/A-
2001	A1/AA/AA-	Baa1/A-/A-
2000	A1/AA/AA-	Baa1/A-/A-
1999	A1/AA/AA-	Baa1/A-/A-
1998	-/AA/AA-	Baa1/A-/A-
1997	-/AA/AA-	Baa1/A-/A-
1996	-/AA/AA	Baa1/A-/A-
1995	-/AA/-	Baa1/A-/A-
1994	-/AA/-	Baa2/BBB+/
1993	-/AA/-	/BBB+/
1992	-/AA/-	/BBB/

Bloomberg , Moody's, S&P, Fitch

Conventions

Bonds

Quote: Yield to maturity
Settlement: T+2 (also T+0 and T+1):
Basis: ACT/365
Coupon frequency: Semi-annual

IRS

Fixing: CAM (Camara rate)
Coupon frequency: Bullet for tenors under 18m, semiannual 2y and longer

CCS

Fixing: CLP x LIBOR
Coupon frequency: 6m or 3m

Bloomberg pages

OTC CLP <GO> – Market monitor
BCPCL Govt <GO> – BCP bonds
BCUCL Govt <GO> – BCU bonds
BTPCL Govt <GO> – BTP bonds
CHILBT Govt <GO> – BTU bonds
BMLT <GO> – LatAm local markets

Reuters pages

<CLP=>

Useful official websites

Central bank
http://www.bcentral.cl/

Finance Ministry
http://hacienda.cl/

Statistics agency
http://www.ine.cl/home.php

Pension regulator
http://www.safp.cl/

Budget office
http://www.dipres.gob.cl/

Chile Internal Tax Revenue Agency
http://www.sii.cl/

Bond auctions
http://www.bcentral.cl

Useful market websites

Exchange: Bolsa de Comercio
http://www.bolsadesantiago.com/

*Links are to third-party websites, and do not contain BofAML Global Research.

Table 166: Summary of Chile bond markets and products

Instrument	BCU	BCP	BTU	BTP	PDBC
Issuer	Central Bank of Chile	Central Bank of Chile	Treasury	Treasury	Central Bank of Chile
Currency	UF (settled in CLP)	CLP	UF (settled in CLP)	CLP	CLP
Minimum Denomination	UF500	CLP5mn	UF500	CLP5mn	CLP5mn
Tenor	0-29y	0-10y	0-30y	0-20y	Up to 360d
Interest rate/coupon	3% for on the run (5% a few off the run)	6% for on the run (8% two off the run bonds)	3% for on the run (2.1-4.5% a few off the run)	6%	zero
Coupon Payments	Semi-annual, 180/360	Semi-annual, 180/360	Semi-annual, 180/360	Semi-annual, 180/360	zero
Day Count Calculation	ACT/365	ACT/365	ACT/365	ACT/365	ACT/365
Amortization Schedule	Bullet	Bullet	Bullet	Bullet	Bullet
Amount outstanding (as of March 2018)	UF168mn (CLP4.9tn)	CLP3.0tn	UF711mn (CLP20.6tn)	CLP14.7tn	CLP7.7tn
Secondary Market					
Trading	OTC and Bolsa de Comercio (auction and Telerenta)	OTC and Bolsa de Comercio (auction and Telerenta)	OTC and Bolsa de Comercio (auction and Telerenta)	OTC and Bolsa de Comercio (auction and Telerenta)	OTC and Bolsa de Comercio (auction and Telerenta)
Quotation Convention	Yield	Yield	Yield	Yield	Yield
Settlement Period	Common T+1, also T+0 and T+2	Common T+1, also T+0 and T+2	Common T+1, also T+0 and T+2	Common T+1, also T+0 and T+2	Common T+1, also T+0 and T+2
Average Daily Turnover	USD100mn	USD50mn	USD50mn	USD30mn	USD30mn
Bid/offer spread (0-5Y)	6bp	6bp	6bp	6bp	3bp
Bid/offer spread (5Y+)	4bp up to 10y, 6bp longer tenors	4bp up to 10y, 6bp longer tenors	4bp up to 10y, 6bp longer tenors	4bp up to 10y, 6bp longer tenors	N/A
Average trade size	UF100K	CLP3bn	UF100K	CLP3bn	varies
Clearing Mechanism	Local DCV	Local DCV	Local DCV	Local DCV	Local DCV
Major players	Insurance companies (long end), pension funds (belly), mutual fund (short end), banks	Insurance companies (long end), pension funds (belly), mutual fund (short end), banks	Insurance companies (long end), pension funds (belly), mutual fund (short end), banks	Insurance companies (long end), pension funds (belly), mutual fund (short end), banks	banks
Trading hours	10:00am to 1.00pm (Santiago)	10:00am to 1.00pm (Santiago)	10:00am to 1.00pm (Santiago)	10:00am to 1.00pm (Santiago)	10:00am to 1.00pm (Santiago)
Regulations					
Restrictions on Foreign Investment	No restriction	No restriction	No restriction	No restriction	No restriction
Custodian	DCV	DCV	DCV	DCV	DCV
Withholding Tax	Foreigners pay 35% withholding or qualify for 4% withholding if they execute per Government guidelines. Foreigners from dual tax treaty countries pay 4%	Foreigners pay 35% withholding or qualify for 4% withholding if they execute per Government guidelines. Foreigners from dual tax treaty countries pay 4%	Foreigners pay 35% withholding or qualify for 4% withholding if they execute per Government guidelines. Foreigners from dual tax treaty countries pay 4%	Foreigners pay 35% withholding or qualify for 4% withholding if they execute per Government guidelines. Foreigners from dual tax treaty countries pay 4%	Foreigners pay 35% withholding or qualify for 4% withholding if they execute per Government guidelines. Foreigners from dual tax treaty countries pay 4%
Capital gains Tax	Foreign investors in non-dual tax treaty countries pay 35%. These same investors can avoid capital gains taxes if they execute per Government guidelines	Foreign investors in non-dual tax treaty countries pay 35%. These same investors can avoid capital gains taxes if they execute per Government guidelines	Foreign investors in non-dual tax treaty countries pay 35%. These same investors can avoid capital gains taxes if they execute per Government guidelines	Foreign investors in non-dual tax treaty countries pay 35%. These same investors can avoid capital gains taxes if they execute per Government guidelines	Foreign investors in non-dual tax treaty countries pay 35%. These same investors can avoid capital gains taxes if they execute per Government guidelines
Entry/Exit	No	No	No	No	No
Primary Auctions					
Auction Style	Dutch auction	Dutch auction	Dutch auction	Dutch auction	Dutch auction
Average Issue Size	USD230mn monthly	USD200mn monthly	USD400mn monthly	USD140mn monthly	USD400mn monthly

Source: Bloomberg, various local authorities

Colombia

Alexander Müller
Merrill Lynch (Mexico)

Gabriel Tenorio
MLPF&S

Overview

Colombia is the fourth largest Latin American local sovereign bond market, roughly 6% the size of Brazil's, 26% of Mexico's and 79% of Argentina's. The government has concentrated on promoting liquid local debt benchmarks with 1-8, 10, 12 and 15-year maturities. The longest local bond is the June 2049 TES UVR, which accounts for 0.9% of all TES outstanding. A high rate of withholding tax on foreign investors had until recently limited the growth of this market; but the withholding tax rate has fallen from 33% (pre-2012) to 14% now, raising the share of foreign participation from 3% in 2012 to 26% in June 2018 (Table 167).

The Colombian economy is highly dependent on exports of hydrocarbons and minerals (mainly oil and coal). Total exports of hydrocarbons and minerals accounted for 47% of total goods exports in 2017, down from a peak of 59% in 2014. But the economy remains heavily exposed to the commodities cycle. Oil output averaged 854 thousand bpd in 2017 and, according to the Ministry of Finance's Medium Term Fiscal Framework (published in June 2018) the government expects output to fall to 610 bpd by 2029 due to the depletion of reserves. Therefore, a key challenge for Colombia will be to diversify the economy and find new sources of economic growth.

The political environment is stable, amid improved security conditions and the consolidation of market-friendly policies. In 2016, the government signed a peace agreement with the Revolutionary Armed Forces of Colombia (FARC) rebels, and peace negotiations with the National Liberation Army (the second largest guerilla group) are ongoing. On 17 June, Iván Duque, from the right-wing Centro Democrático party won the presidential elections. Governability in Colombia is expected to be solid over the next four-year presidential term, considering that right parties hold an absolute majority in both houses of Congress. President-elect Duque, nevertheless, has a more hard-line stance than his predecessor, President Santos, which could strain relations with the remaining rebels.

Bank of the Republic (Colombia)
Monetary policy

Background. Banco de la República (Banrep) follows a full-fledged inflation targeting regime. It has had an explicit inflation target since 1991, the year during which the Constitution tasked the bank with preserving the value of the currency. When the country abandoned its exchange rate bands in September 1999, Banrep went on a full inflation target system. In 2000, the board fixed 3% as the long-run inflation target and embarked on a disinflationary process, lowering its target rate gradually. As a result,

Table 167: Ownership breakdown of Colombian government local currency bonds

	USD (bn)	% share of total
Total government bond outstanding	**97.5**	**100.0**
Pension funds	25.6	26.3
Foreign funds	25.2	25.8
Banks	15.2	15.5
Public fiduciaries	11.4	11.7
Insurance companies	5.0	5.1
Special official institutions	4.2	4.3
Central Bank	3.9	4.0
Finance Ministry	3.2	3.3
Others	4.0	4.1
Total local holders	**72.3**	**74.2**
Total foreign holders	**25.2**	**25.8**

Note: Data as of June 30, 2018. Includes TES UVR.
Source: BofA Merrill Lynch Global Research. Ministerio de Hacienda y Crédito Público.

Colombian inflation reached single-digit rates for the first time since the 1960s and fell below the long-run target range by 2009. From February 2015 to May 2017 headline inflation was above the target range, but began a substantial disinflation trend thereafter (falling to 3.1% in August 2018, slightly above the 3% target).

Policy framework. Banrep is legally autonomous and has a mandate to preserve price stability. The Constitution assigns it the sole objective of seeking to preserve the currency's purchasing power. The board, which has seven members, including the finance minister, has been seen as among the most hawkish in the region, Colombia had interim biennial inflation target ranges that were reduced progressively during the disinflationary process. There is a long-run inflation objective and an intermediate target; the intermediate target can be raised, the long-run objective cannot. Both are at 3±1%.

Base rate. Banrep's board used to hold monthly meetings to make policy rate decisions, but in November 2017 it announced a reduction in the number of board meetings per year (down to 8). The meetings typically take place on the fourth or fifth Friday of each month, except December when it takes place earlier. The schedule for the year is usually published during the second week of January. A post-meeting press conference is held after each meeting, during which the governor reads the communiqué and takes questions together with the finance minister. The reference rate (CORRRMIN Index in Bloomberg) is the minimum repo rate to be offered at Banrep's daily auction.

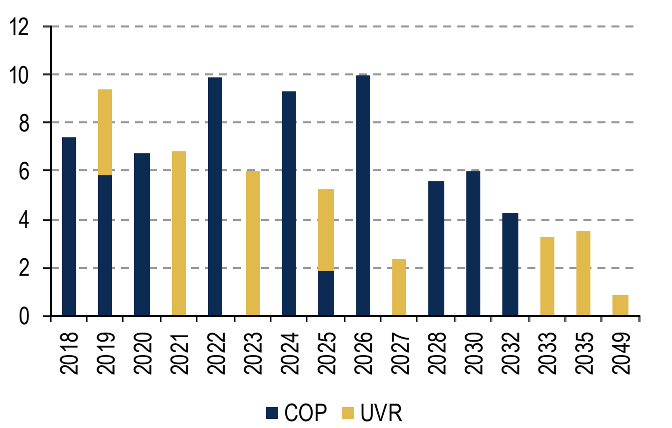
Meeting minutes and a statistical annex are released two weeks later. These typically indicate whether the decision was unanimous or by majority and include the opinion of any dissenting votes. Banrep also publishes a quarterly inflation report and presents a bi-annual report to Congress discussing macroeconomic results and key policy decisions.

Open market operations. Transitory operations are carried out through short-run repurchase agreements (if expansionary) or reverse repurchase agreements (if contractionary). Permanent operations are carried out through sales of the public debt portfolio. Banrep can also receive deposits from authorized entities.

Reserve requirements. Short-term deposits are subject to an 11% reserve requirement. CDs and other deposit instruments with duration less than 18 months are subject to a 4.5% requirement. CDs and other deposit instruments with durations greater than 18 months are exempt from reserve requirements.

FX policy. Colombia's exchange rate regime is best characterized as a dirty float. Colombia first let its currency float in September 1999 after a balance of payments crisis illustrated the inconsistency between the inflation targeting regime and the bands

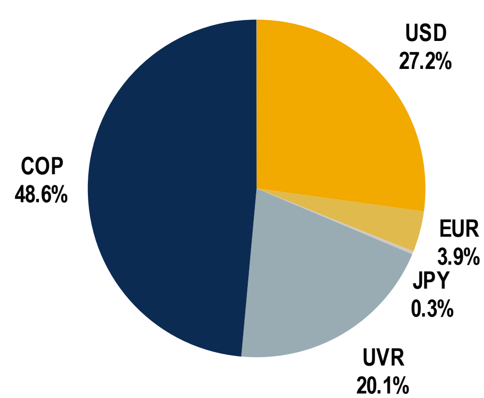
Chart 164: Maturity profile of local debt (US$bn)



Note: Data as of June 30, 2018. Total US$96.6bn

Source: BofA Merrill Lynch Global Research. Ministerio de Hacienda y Crédito Público.

Chart 165: Total outstanding debt (local and external)



Source: BofA Merrill Lynch Global Research. Ministerio de Hacienda y Credito Publico system. But Banrep has reserved the right to intervene in the FX market with the objective of maintaining an adequate level of reserves, reducing short-term FX fluctuations, and moderating excessive longer-term fluctuations that endanger price or financial stability. In order to do this, Banrep uses a combination of direct purchase auctions, put/call options or discretional intervention; only direct purchase auctions have been used since 2009.

Banrep received strong pressure from the authorities to intervene in order to stem appreciation due to the COP's continued strengthening over the past decade; the COP appreciated 45% from its trough in 2003 to its peak in 2008, though it has depreciated 73% since then. Increased oil and mining exports as well as foreign direct investment and portfolio inflows drove the appreciation, while the depreciation was mostly explained by the end of the commodities boom and expectations, an ensuing external imbalance (current account deficit reached 6.3% of GDP in 2015), less risk appetite for emerging markets, and expectations of tighter monetary policy in the U.S.

Fiscal policy and debt issuance

Fiscal policy. Total central government expenditures were 19.2% of GDP in 2017. Given the sharp fall of oil prices in 2014, the central government's deficit widened to 4% of GDP in 2016 (from 2.3% of GDP in 2013) as net oil-related revenues fell to negative territory (from 3.3% of GDP) during the same period and the economy slowed down battered by the terms of trade shock. Nevertheless, the partial recovery of oil prices and fiscal consolidation narrowed the deficit to 3.6% of GDP in 2017, and the acceleration of the economy coupled with more fiscal adjustment are expected to narrow the fiscal deficit further in 2018.

Regarding reforms, in 2010 and 2011 the Santos administration pushed through a set of aggressive measures for fiscal institutions, including constitutional reforms to change the royalties' distribution system and protect fiscal responsibility principles. The administration adopted a fiscal rule to pursue a long-term structural fiscal deficit target of 1.0% of GDP (which the government expects to reach in 2022) and created stabilization funds. Moreover, during President Santos' second term (2014-2018) the government approved an even more ambitious fiscal reform to raise revenues and boost investment, basically, through a combination of higher indirect taxes (value added tax hiked to 19% from 16%, excise taxes, green taxes), stronger enforcement measures against evasion, and lower corporate income taxes (whose overall tax rate is expected to decrease from 40% in 2016 to 33% in 2019).

Additionally, we highlight that the implementation of the peace agreement will pressure the fiscal accounts in the coming years (as related expenses are estimated around 0.8% of GDP in 2018 and 0.7% of GDP for the next thirteen years, according to the Ministry of Finance).

Debt issuance. As of June 2018, the central government had outstanding debt of COP439tn (US$149bn), of which 296tn (67%) was internal and 143tn (33%) was external. Of internal debt, 95% is in bonds, 70% of which are denominated in COP and 30% are linked to inflation through the Unidad de Valor Real (UVR) index, which is set by the central bank based on the previous month's CPI print.

Bond market

There are two types of bonds issued regularly in the local debt market: COP-denominated fixed-rate TES and inflation-linked UVR bonds. Liquidity in the secondary market is increasing, with average daily trading volume of approximately US$1-2bn. The bid-ask spread for liquid bonds is 2bp.

TES Tasa Fija. These are annual fixed-rate bonds issued in COP that pay full principal at maturity. Maturities range from 1-15 years. Most of the liquidity in the market is concentrated in these bonds.

TES UVR. These are inflation-linked securities that have an annual fixed coupon and pay the principal at maturity. The face value of these bonds is expressed in terms of UVR. The UVR Index is a unit published daily by the central bank and tied to the CPI of the previous month. Liquidity in UVR bonds is low and accounts for less than 10% of the daily trading volume.

TES Global (COP denominated). There are three TES Globals maturing in 2021, 2023 and 2027, denominated in COP. Since 2005, US$4bn of these bonds has been issued. They are designed for offshore investors, governed under New York Law, and pay all coupons and principal payments in USD.

Auction and placement mechanism. TES auctions are administered by Banrep. The auctions usually occur on Wednesday (or the following business day) of monetary weeks (weeks with four or more banking days). COP TES are usually auctioned during the second and fourth monetary weeks of the month and TES UVR during the first and third monetary weeks.

Derivatives market

Cross-currency swaps. There is a cross-currency basis swap market, which trades IBR flat against 3m Libor plus basis. The curve goes from 1 to 25 years and liquidity is concentrated between the 5- and 10-year tenors. Bid-ask spreads are typically 5-10bp and the average ticket size is US$5mn. The UVR/LIBOR goes from 1 to 15 years but is rarely traded. Bid-ask spreads are 20bp.

Interest rate swaps. The main interest rate swap traded in Colombia is the IBR swap, which is an OIS tied to the overnight interbank lending rate (IBR). For maturities up to 18 months the swap makes a single net payment for the fixed and floating legs at maturity. For two-year and above, the netted payments are exchanged every quarter. At each reset the floating leg amount is based on the effective compounded rate from the daily IBR rates during the reset period. The fixed leg is based on the usual Actual/360 convention. Daily volume of IBR[20] swaps is around 30-50k DV01, most transactions are 3-month to 10-year tenors and the average bid-ask is about 4bp.

Local futures. TES futures have been traded on the Colombian Stock Exchange since 2008. The market is gaining liquidity over time. In June 2012, the stock exchange launched a future on the overnight interbank lending rate (IBR).

FX market

The COP is a free-floating, non-deliverable currency with an average daily trading spot volume of US$1bn. There is an onshore forward market with maturities up to 18 months, but liquidity is concentrated in 1-3 months. These forwards can be cash settled or delivered if a foreign exchange liability/asset exists.

The fixing rate for NDF contracts is the TRM, a volume weighted average of spot market

Table 168: Summary statistics of Colombia derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-ask spread	Other notes
Cross Currency Swap				
IBR/LIBOR	USD30mn	USD5mn	5-10bp	IBR flat vs 3mLIBOR + basis, liquid in 1-10 year tenors
UVR/LIBOR	USD5mn	USD5mn	20bp	6mLIBOR, poor liquidity. Inflation Index: Bloomberg UVR Index
Interest Rate Swap				
COP/IBR	USD100mn	USD10mn	4bp	O/N IBR daily compounded, most trading in 3m to 10y.
Local Futures				
TES	COP100,000mn	COP1,000mn	0.05pct	Quarterly maturities (Mar, Jun, Sep, Dec) and next two monthly maturities. Three different underlying: Short Term, Medium Term and Long Term COP TES.
IBR	COP20,000mn	COP1,000mn	0.40pct	Four maturities: Mar, Jun, Sep, Dec

Source: BofA Merrill Lynch Global Research

20 IBR = Indicador Bancario de Referencia.

transactions on the fixing date. The TRM is calculated by the Superintendencia Financiera de Colombia. In recent years, futures on TRM started trading on the stock exchange and are slowly gaining liquidity (US$5mn daily average volume). There is also an NDF and NDO offshore market. The NDF offshore market is liquid up to 1 year, and the NDO trades a few times a week.

Table 169: Colombia's FX market vital statistics and characteristics

FX product	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
Onshore						
Spot	COP Spot	USD1bn	USD5mn	COP2	<CO=>	Settlement: T+2
Forwards	Forwards	USD400mn	USD5mn	COP3	<CO=>	Fixing TRM
Offshore						
NDF	FX outright	USD600mn	USD5mn	COP3	CO/COL03	Fixing TRM
NDF	FX swaps	USD600mn	USD5mn	COP3	CO/COL03	Fixing TRM
NDO	Options	USD10mn	USD5mn	1 vol	CO/COL03	Fixing TRM

Note: Fixing NDF is TRM with day count convention Act/360. Source: Reuters

Investor base

The main holders of local TES are pension funds, which hold over 26% of the total local TES outstanding (Table 167). Foreign funds represent the second largest group of TES holders, with around 26% of total. Foreign investors can invest in local debt instruments through a local investment administrator (broker dealer or trust fund administrator). Local commercial banks also play a major role in the local government bond market, with their holdings accounting for around 16% of the total outstanding. Other major holders are public fiduciaries, which account for 12%.

Rules, regulations, capital control taxation

The withholding tax on interest paid on non-residents has fallen from 33% (pre-2012) to 14% now. There is a withholding tax (deductible of income tax) on interest payments of 7% for bond maturities of less than five years and 4% for longer maturities. Investors are also subject to a 16% value added tax on currency repatriation gains. Although investors pay the VAT, it is based on the dealer's foreign currency gain on the transaction relative to the tax base exchange rate. The tax base exchange rate is the dealer's average exchange rate from the previous day. In addition, there is a 0.4% financial transactions tax on after-tax funds repatriated from Colombia. This tax can be avoided if using the same intermediary to close an open currency position.

Clearing and settlement

There are two main depository institutions in Colombia: DCV, administered by Banco de la Republica; and Deceval, administered by the Colombian Stock Exchange. DCV can only be used for government bonds, while Deceval can be used for any kind of fixed income security. Colombia's payment system is SEBRA, also administered by BanRep. The majority of the trades in TES are settled delivery versus payment (DVP) through SEBRA and DCV. The standard settlement for government securities is T+0.

Table 170: Summary of Colombia bond markets and products

Instrument	TES Tas Fija	TES UVR
Issuer	Tesoreria General de La Nacion	Tesoreria Nacional de La Nacion
Currency	COP	UVR (settled in COP)
Minimum Denomination	COP 500,000/increment COP 100,000	UVR 10,000/increment UVR 1,000
Tenor	1 to 15 years	1 to 30 years
Interest rate/coupon	Annual	Annual
Coupon Payments	Fixed	Fixed (in UVR)
Day Count Calculation	NL/365	NL/365
Amortization Schedule	Bullet	Bullet
Form	Scripless	Scripless
Amount outstanding	COP193tn	COP87tn
Secondary Market		
Trading	Exchange (BVC, SEN) and OTC	Exchange (BVC, SEN) and OTC
Quotation Convention	Yield	Yield
Settlement Period	T+0	T+0
Average Daily Turnover	COP4000bn	COP 300bn
Bid/offer spread	2bp	4bp
Average trade size	COP5bn	COP5bn
Clearing Mechanism	DVP via SEBRA/DCV or Deceval	DVP via SEBRA/DCV or Deceval
Major players	Locals (pension funds, banks and broker/dealers)	Locals (pension funds, banks and broker/dealers)
Trading hours	8:00-15:40 (Bogota)	8:00-15:40 (Bogota)
Regulations		
Restrictions on Foreign Investment	There are no restrictions for foreign investment. However, investments must be made through a local broker/dealer or fiduciary.	There are no restrictions for foreign investment. However, investments must be made through a local broker/dealer or fiduciary.
Custodian	Local custodian required	Local custodian required
Withholding Tax	7% for maturities of less than 5 years and 4% for longer maturities.	7% for maturities of less than 5 years and 4% for longer maturities.
Capital gains Tax	14%	14%
Entry/Exit	16% value added on currency appreciation	16% value added on currency appreciation
Primary Auctions		
Auction Style	Dutch	Dutch
Average Issue Size	COP10tn	COP10tn
Minimum Amount of Tender	COP500,000,000	UVR1,000,000 (≈ COP200,000,000)

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	Baa2/BBB/BBB	Baa2/BBB-/BBB
2017	Baa2/BBB+/BBB	Baa2/BBB/BBB
2016	Baa2/BBB+/BBB	Baa2/BBB/BBB
2015	Baa2/BBB+/BBB+	Baa2/BBB/BBB
2014	Baa2/BBB+/BBB+	Baa2/BBB/BBB
2013	Baa3/BBB+/BBB+	Baa3/BBB/BBB
2012	Baa3/BBB+/BBB	Baa3/BBB-/BBB-
2011	Baa3/BBB+/BBB	Baa3/BBB-/BBB-
2010	Baa3/BBB+/BBB-	Ba1/BBB-/BB
2009	Baa3/BBB+/BBB-	Ba1/BBB-/BB
2008	Baa3/BBB+/BBB-	Ba1/BBB-/BB
2007	Baa3/BBB+/BBB-	Ba2/BBB-/BB
2006	Baa3/BBB/BBB-	Ba2/BB/BB
2005	Baa2/BBB/BBB-	Ba2/BB/BB
2004	Baa2/BBB/BBB-	Ba2/BB/BB
2003	Baa2/BBB/BBB-	Ba2/BB/BB
2002	Baa2/BBB/BBB-	Ba2/BB/BB
2001	Baa2/BBB/BBB	Ba2/BB/
2000	Baa2/BBB/BBB	Ba2/BB/
1999	Baa2/BBB+/-	Ba2/BB+/
1998	Baa2/A/-	Baa3/BBB-/
1997	-/A+/-	Baa3/BBB-/
1996	-/A+/-	Baa3/BBB-/
1995	-/A+/-	Baa3/BBB-/

Source: Bloomberg, Moody's, S&P, Fitch

Conventions

Bonds
Quote: Yield to maturity
Settlement: T+0
Basis: NL/365
Coupon frequency: Annual

IRS
Fixing: IBR
Coupon frequency: Quarterly

Bloomberg pages
OTC COP <GO> Market monitor
COLTES Govt <GO> Tesoro Bonds
SENC <GO> SEN TES market prices
BVCO <GO> BVC TES market prices
ICCO <GO> ICAP live prices
TDCO <GO> Tradition live prices
GFCO <GO> GFI live prices

Reuters pages
<CO=>

Useful Official websites

Central bank
http://www.banrep.gov.co

Finance Ministry
http://www.minhacienda.gov.co

Investor Relations Colombia
http://www.irc.gov.co

Statistics agency
http://www.dane.gov.co

Financial institution regulator
http://www.superfinanciera.gov.co

Bond auctions
http://www.banrep.gov.co/informes-economicos/ine_sub_tesb.htm

Useful market websites

Stock exchange
http://www.bvc.com.co

*Links are to third-party websites, and do not contain BofAML Global Research.

Mexico

Carlos Capistran
MLPF&S

Gabriel Tenorio
MLPF&S

Overview

The Mexican fixed income market is the second largest in Latin America in terms of volume. Remarkable public debt management has led to a relatively high proportion of local debt being long-term securities. The government issues fixed rates bonds (Cetes, MBono, Udibonos). The main local participants include banks and private funds, although these are outpaced by foreigners for Mbonos given the ease of entry and exit, high spreads against advanced economies, and inclusion in global bond indices. Market intervention, mostly rule-based, has taken place only in very poor liquidity scenarios or when facing high international financial volatility.

Market drivers

As a small and open economy with strong trade and financial links with the US, economic data in the US often have a greater impact on Mexico's fixed income market. A free floating FX serves as a buffer to external shocks given the fully convertible, deliverable and liquid currency. Among domestic data, bi-weekly CPI prints head the list and are published by the National Institute of Statistics and Geography (INEGI) at 9am NYT around Day 9 (previous month inflation) and Day 24 (1H inflation of the current month) of each month. Monthly volatility and long publication lags of other indicators typically cause markets to shrug off domestic data surprises. More recently, developments around the re-negotiation of the North America Free Trade Agreement (NAFTA) have been significant movers of Mexican assets.

Bank of Mexico

Objectives

Banco de México (Banxico) is one of the most well-regarded institutions in Mexico. It is legally autonomous and its primary objective is to foster the stability of the national currency's purchasing power. Mexico's constitution states that no authority can order the central bank to grant financing, given a firm belief in Mexico that high and volatile inflation has its roots in fiscal dominance. The constitution also assigns the central bank regulation of the exchange rate, financial intermediation and financial services.

According to law, Banxico is responsible for promoting the sound development of the financial system and fostering the proper functioning of the payment systems. The law also establishes that the central bank has to operate as a reserve bank and lender of last resort for credit institutions, provide treasury services to the federal government and act as its financial agent, as well as counsel the federal government on economic and financial issues.

Table 171: Key facts

Name	Banco de México
Founded	1925
Governor	Alejandro Díaz de León
Board members	5, staggered board
Autonomous	Yes
Government representative on board	Members from the SHCP can speak but have no vote in monetary policy meetings
Terms	Governor 6 years; deputy governor 8 years; members can be reelected as long as they are eligible.
Inflation target	3% with a variability band of ±1%
Latest move	25bp hike (29 June 2018)

Source: BofA Merrill Lynch Global Research, Banxico

Table 172: Key links*

- Main page
- Board members
- Quarterly Report
- Calendar, policy statements and minutes
- Statistics
- Presentations and speeches
- Legal framework
- English version
- Ministry of Finance (SHCP)
- National Department of Statistics (INEGI)

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

Legal framework

Two basic legal instruments set out the functions and duties of Banxico and its board: Article 28 of the Mexican constitution and the central bank's law. The constitution sets out the objective, functions and principles for central bank board appointments. All of these are developed in greater detail by the law, which also sets the bank's organization and structure, the rules governing the board and administration, principles for the management of international reserves and the exchange rate, and the labor regime covering the bank's staff. In matters other than administrative acts not foreseen in these instruments, Banxico's actions are subject to the norms of private law.

Decisions

The board of governors is Banxico's highest authority. The board has five members: the governor and four deputy governors. Board members are appointed by the president and confirmed by the Senate. The governor is elected for a six-year term, and starts on 1 January of the fourth year of the president's six-year term. The deputy governors are elected for eight-year terms. Deputy governors terms are staggered, with one starting every other year in January of the first, third and fifth years of the president's term. The individuals occupying these posts may be appointed for more than one term, and can only be removed for grave causes.

The rules on appointment and removal of the board members help preserve Banxico's autonomy. However, the fact that each president can change the majority of the board during his or her term allows the executive to have some weight on the central bank's decisions. The finance minister and the deputy minister usually attend the meetings when decisions about monetary policy are made. They can speak, but have no voting rights.

The board requires a minimum of three members at a meeting. If the governor is not present, a member appointed by the governor presides over the session. Resolutions must be approved by a majority vote of the members present, with the presiding member having the decisive vote in case of a tie.

Table 173: Banxico Board members

Name	Date originally appointed	Current term ends	Term limit ends*	Background	Known policy stance
Alejandro Díaz de León-Carrillo, governor	2017	Dec 2021	Dec 2033	Master's degree in public and private management, Yale University; Deputy governor of Banxico, General Director of Bancomext; Head of Debt Management Office at Ministry of Finance	Before taking his post as governor in December 2017, Díaz de León leaned toward the side more worried about economic activity. However, it seems he has moved to a less dovish posture. He started his term by hiking the overnight rate target. He has introduced many changes that increase transparency and has moved towards a full inflation forecast targeting regime.
Roberto del Cueto Legaspi, deputy governor	2007	Dec 2022	Dec 2022	Lawyer from Escuela Libre de Derecho; Banamex general director; president of CNBV	No clear preferences have been revealed, although public perception is that del Cueto typically takes the side of the governor.
Manuel Ramos-Francia, deputy governor	2011	Dec 2018	Dec 2026	PhD in economics, Yale University; Banxico general director for economic research (chief economist); deputy minister of Finance and Public Credit	Ramos-Francia is considered the most technical board member. He has been more vocal than other members on the potential impact of the US Federal Reserve's eventual hiking cycle on inflows to emerging markets. He has also been vocal about potential growth in Mexico been very low, closer to 2% than consensus estimates. The administration of Andres Manuel Lopez Obrador has made clear that he will not be reappointed for a second term once his period ends in 2018.
Javier Guzmán Calafell, deputy governor	2013	Dec 2020	Dec 2020	Master's in economics, Lovaina and Yale University; general director of CEMLA (Latin American Monetary Research Center); Banxico director for foreign affairs	Guzmán leans toward the side more worried about inflation. He looks at monetary conditions taking the real exchange rate into account. He has been supportive of Banxico's most recent hiking cycle.
Irene Espinosa, deputy governor	2018	Dec 2025	Dec 2033	Master's degree in public policy, Instituto Tecnologico Autonomo de Mexico (ITAM); Head of Treasury at the Ministry of Finance.	Espinosa is likely to side with the governor when voting on monetary policy meetings. She arrived to Banxico when inflation was above the target (5.5%). All the decisions she has participated so far have had unanimous decisions. Espinosa voted to hike 25bp in February and June meetings.

* Law specifies that eligible board members must not be older than 65 by the date when their term starts.

Source: BofA Merrill Lynch Global Research, Banxico

The current board

Previously, Governor Díaz de León was a deputy governor. Alejandro Díaz de León was appointed Banxico governor starting December 1 2017 to complete Agustin Carstens term (ending December 31, 2021). Díaz de León has a vast experience at the central bank, where he has worked for more than 15 years, most recently as deputy governor since January 1, 2017. Díaz de León also worked in different positions in the government. He holds a master degree from Yale University and a BA degree in economics from Instituto Tecnologico Autonomo de Mexico (ITAM). His appointment was well received by the markets.

The current board is perceived as concerned mostly about inflation but also about financial volatility and economic activity. It is remarkable that Banxico has increased 75bp the overnight rate target since Díaz de León was appointed as the new governor, in addition to the 400bp hiked since December 2015. The interest rate target was hiked more than inflation, which increased the real rate to levels that are likely to be above the neutral rate in Mexico, which has helped to contain inflation expectations.

Monetary policy regime and instruments

Banxico follows a full-fledged inflation targeting regime. It became autonomous in 1994 and took its first step toward inflation targeting in 1999, consolidating it in 2001. Starting in 2002, Banxico set a permanent inflation objective for the consumer price index (CPI) at 3% with a variability interval of plus/minus 1%. Inflation has averaged 4.2% since 2002.

Since 2008 the central bank has implemented monetary policy by targeting the overnight interest rate, known as Tasa de Fondeo (MXONBR Index). In the past it used a quantitative target known as Corto, with a transition period between April 2004 and 2008. The target for the rate is achieved by managing short-run liquidity through credit or debit auctions with banks, and through securities purchases or sales.

Exchange rate regime and instruments

Mexico's exchange rate regime can be characterized as a dirty float, although Mexico has a well-earned reputation as being one of the countries less prone to intervention in the foreign exchange market. Mexico let its currency float in December 1994 after the Tequila Crisis and has not changed the regime since then.

In foreign exchange rate matters, Banxico acts in accordance with the guidelines established by the Foreign Exchange Commission (FEC), which is made up of the minister and two deputy ministers of finance and public credit, as well as the governor and two deputy governors of the central bank. FEC sessions are presided over by the minister of finance and by the governor of the central bank in his absence. At least three members must be present for any session to take place, provided that the ministry of finance and Banxico are represented. FEC resolutions are made by majority vote. The officer presiding over the session has the decisive vote in case of a tie.

Table 174: Banxico MPC meetings and releases in 2018

	Monetary policy meeting	Monetary policy minutes	Quarterly Report
Jan			
Feb	Thu, 9 Feb	Thu, 23 Feb	
Mar	Thu, 30 Mar		Wed, 1 Mar
Apr		Wed, 12 Apr	
May	Thu, 18 May		Wed, 31 May
Jun	Thu, 22 Jun	Thu, 1 Jun	
Jul		Thu, 6 Jul	
Aug	Thu, 10 Aug	Thu, 24 Aug	Wed, 30 Aug
Sep	Thu, 28 Sep		
Oct		Thu, 12 Oct	
Nov	Thu, 9 Nov	Thu, 23 Nov	Wed, 29 Nov
Dec	Thu, 14 Dec	Thu, 28 Dec	

Notes: Statements to be released at 2:00 pm EST.
Source: BofA Merrill Lynch Global Research, Banxico

The FEC does not target USD/MXN levels. But it has reserved the right to intervene in the FX market with the objective of maintaining an adequate level of reserves, reducing FX volatility and dealing with high illiquidity scenarios. The interventions are generally done through clear rules and in a transparent manner.

The FEC has used several instruments to intervene in the FX market. The instruments used most recently are a minimum price daily sales auction mechanism, a daily auction mechanism with minimum price, non-deliverable forwards (NDFs) auctions settled in pesos and direct dollars operations. Since 17 February 2016 the FEC cancelled the rules-based auctions and switched to discretionary interventions due to high volatility in global markets. Banxico started to use NDFs on 21 February 2017. Banxico publishes every Tuesday its weekly balance sheet where it discloses the amount of intervention done in the week. We expect interventions to be rather sporadic.

Credit regulation functions

There are no reserve requirements. Banking regulation is carried out in part by Banxico, but mostly by the National Banking and Securities Commission (CNBV), which depends on the ministry of finance and public credit. Regarding commercial banks, Banxico oversees the deposits that these banks should have at the central bank, foreign currency liquidity and serves as lender of last resort. Banxico also supervises credit, lending, and derivatives operations of brokerage firms and mutual funds. With other institutions, Banxico supervises bank capitalization rules and provides prudential regulation.

Current policy stance

Monetary policy is tight, with a real ex-ante rate above what Banxico considers its neutral real rate. The current real ex-ante rate is at 4%, while Banxico point estimate of neutral real rate is 2.5%. The central bank hiked rates to move the real rate from negative to above neutral to avoid high inflation to unanchor inflation expectations.

Inflation is above the 3% target mostly as a result of two large supply shocks: a large depreciation of the peso and high gasoline and gas prices. Banxico hiked rates substantially to avoid second round effects and unanchoring of inflation expectations. No demand pressures on prices have appeared despite the unemployment rate at low levels (3.2%).

We expect Banxico to remain on hold with the nominal rate target at 7.75% for the rest of the year and through 2019. The renegotiation of the North America Free Trade Agreement and the ongoing policies of the new presidential administration, elected in July, whose transition team will incorporate their proposals to the budget for 2019, are likely to keep uncertainty high, with risks of a large increase in minimum wages, which could have an impact on inflation. We believe Banxico will try to keep a tight monetary policy stance to support the peso through these events. But we see no room for Banxico to cut rates in 2019, once the new administration takes office. Conditional on Fed moves, we expect Banxico to be on hold in 2019.

Meetings, data and information dissemination

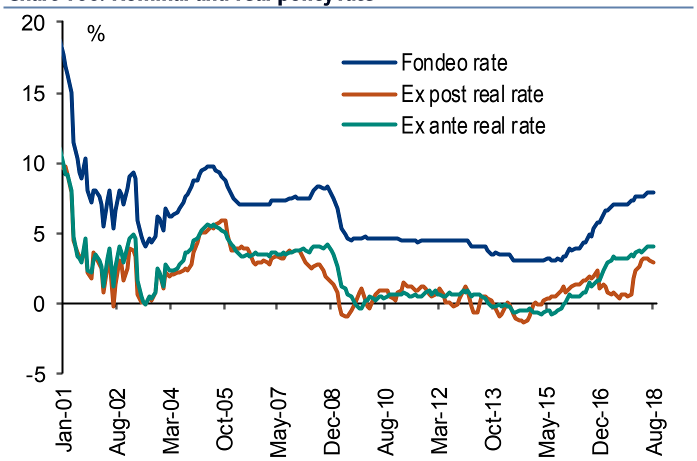
The board meets eight times a year and issues a monetary policy statement at 2pm Eastern the day of the meeting. Since January 2011, the board has published meeting minutes two weeks after the policy statement. Until April 2018 the minutes reported the board's vote without disclosing the identity of the voters. However, starting in May 2018, the board introduced some important modifications in order to improve their communications strategy. Now the minutes include the voter's identity, and if there are dissenting opinions in the voting, the reasons for such dissents are included. Another change is that monetary policy statements and minutes are now publish simultaneously in Spanish and in English, and the transcripts of the board's meetings will be available to the public three years after the corresponding meeting has taken place.

The minutes are published at 10am Eastern. Banxico produces a quarterly report, which includes growth, output gap and inflation (point) forecasts for the following 7-8 quarters. The quarterly report used to present forecasts as fan charts without showing the underlying assumptions explicitly but, with the release of the 1Q18 report and following the same communications strategy, the board started to publish the forecast for headline and core inflation explicitly while the forecast for the output gap continues to be presented in a fan chart. Banxico publishes a report on its balance sheet every week. It also publishes data on the balance of payments and international reserves, and holds a database of public finances and credit statistics.

Fiscal policy and debt issuance

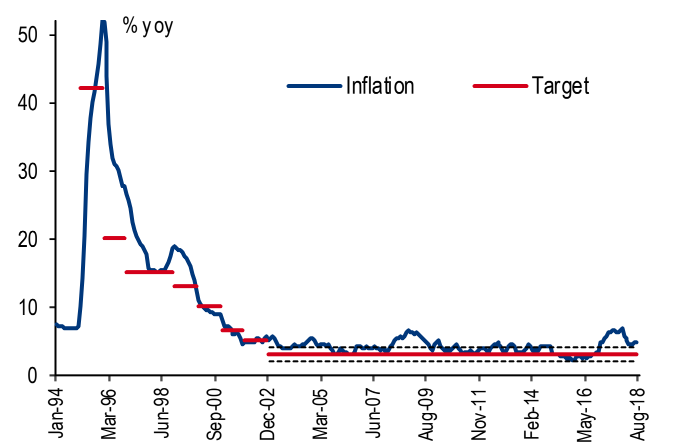
Fiscal policy. The public sector is consolidating fiscal policy. The primary balance is expected to end 2018 with a surplus of 0.8% of GDP, from a surplus of 1.4% in 2017 and a deficit of 0.1% in 2016. Most of the consolidation is based on non-recurrent revenues obtained from the central bank. But part of the consolidation is also based on an increase in recurrent revenues and a cut to expenditure. Most of the cut to expenditure occurred on Pemex, the state oil company, and on public investment. We see the target for 2018 as achievable despite no Banxico transfer and expenditures related to the electoral cycle. However, it will be difficult to realize, as there is increasing cost of financing, and pensions.

Chart 166: Nominal and real policy rate



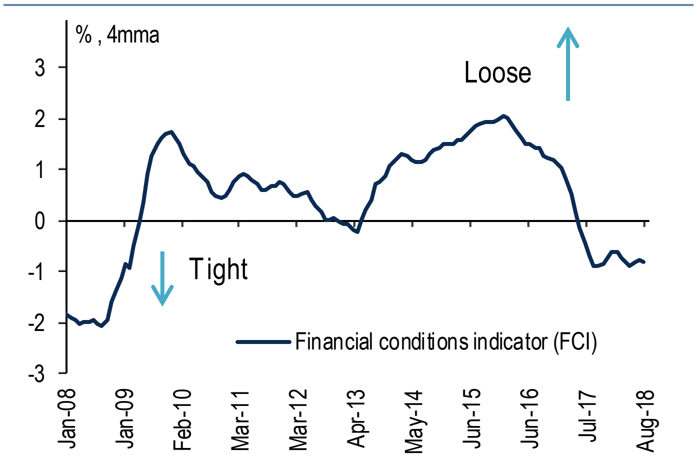
Source: BofA Merrill Lynch Global Research, Banxico, INEGI

Chart 167: Inflation targets and ranges



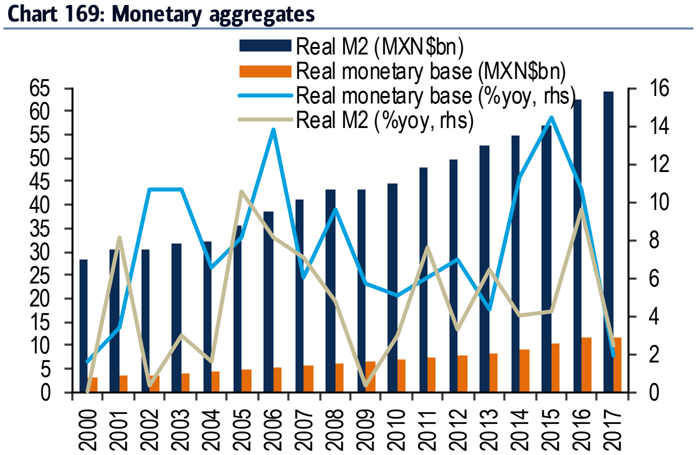
Source: BofA Merrill Lynch Global Research, Banxico, INEGI

Chart 168: Financial conditions index



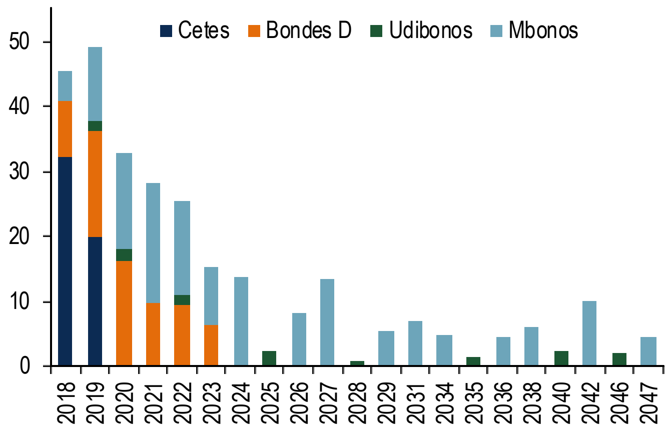
Source: BofA Merrill Lynch Global Research, Banxico, Bloomberg, INEGI

Chart 169: Monetary aggregates



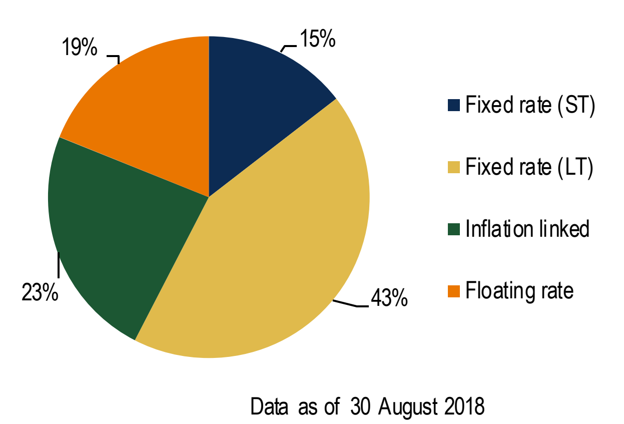
Source: BofA Merrill Lynch Global Research, Banxico

Chart 170: Maturity profile of local MXN-denominated debt (in US$bn)



Source: BofA Merrill Lynch Global Research, SHCP, Banxico

Chart 171: Mexico local debt composition; total US$352bn



Source: BofA Merrill Lynch Global Research, SHCP, Banxico

Debt issuance. The broadest measure of government net debt (the stock of the financial requirements of the public sector) decreased to 46.2% in 2017 from 48.7% the prior year. This metric is more or less in line with similarly rated investment grade countries. Over the past few years, the government's debt strategy has focused on (1) reducing external exposure by increasing domestic debt (58% of total in 2017, up from 40% in 2000 and 1.6% in 1995, all yearend); (2) broadening the investor base through a syndicated auction mechanism; (3) taking advantage of low international interest rates through issuance in foreign markets (dollar, euro, pound, yen); and (4) extending debt average maturity (8 years in 2016, 1.5 in 2000, both yearend).

Bond market

Total net government domestic debt was MXN$6,723bn, or US$352bn in August 2018. The main debt instruments issued in local currency are MBonos (fixed rate bonds), Cetes (short-term zero coupon bills), Udibonos (inflation-linked bonds), and Bondes D (floating rate bonds). Authorities also issue Bonos de Proteccion al Ahorro (BPA). All bonds and coupon payments are made on Thursdays, which imply semi-annual coupon payments made every 182 days (Mbonos and Udibonos). Monthly payments are made every 28 days (Bondes D).

Mbonos. Fixed-coupon bonds that make up the largest share of local issued federal government debt, accounting for 43% of total outstanding local debt. Mbonos pay semi-annual coupons ranging from 5% to 10% and the full face amount at maturity. These bonds are very popular among foreigners, who hold 62% of the outstanding MXN$2,984bn.

Udibonos. Inflation-linked, fixed-coupon bonds that account for 23% of total outstanding local debt. Udibonos are denominated in Unidades de Inversión (UDI) and settled in MXN. UDI is an inflation-indexed unit based on the bi-weekly CPI index. The bonds pay semi-annual coupons ranging from 2.5% to 4.5%, which are also UDI denominated at each payment date and converted to MXN at the UDI rate.

Cetes. Short-term, liquid zero-coupon bills that account for 15% of outstanding local

Table 175: Foreign holdings of local bonds

	Foreign holding	Outstanding (MXNbn)
Mbono	61.7%	2,894.8
Udibono	3.5%	1,579.5
BondesD	0.0%	1271.5
Cetes	28.2%	977.5
Total (MXNbn)	31.5%	6,723.3
Total (USDbn)	31.5%	352.4

Note: As of August 2018; Source: BofA Merrill Lynch Global Research, Banxico.

debt. The longest Cetes are issued with 364 days to maturity. Cetes are also popular among foreigners, who hold 30% of the total outstanding.

Bondes D. Floating-rate bonds that pay a floating coupon every 28 days based on the 28-day compounded daily Fondeo rate (MXBRBA Index in Bloomberg). The Bondes D represent 19% of the outstanding federal local debt; however, there has been no demand among foreigners.

Auction and placement mechanism. Mexico has a very transparent placement mechanism. Hacienda (SHCP – Secretariat of Finance and Public Credit) puts out the annual borrowing plan[21] that states the annual strategy for local and external debt issuance. At the beginning of each quarter the SHCP sends Banxico a list of all local bonds to be placed during the quarter, specifying the bond, tenor, amount to be placed and date of each auction. Regular auctions are held on Tuesdays, with results published on Banxico's website 30 minutes after the closing bids. The settlement takes place T+2 through INDEVAL.

The shorter tenors of the Mbono curve (3-5 years) are auctioned every 4 weeks, while longer maturities (10-30 years) are auctioned every 6 weeks. Udibonos in all tenors are auctioned every 4 weeks. Shorter tenors of Cetes (182 days and below) are auctioned every week, while the 364-day Cetes are auctioned every 4 weeks. Currently, 5y Bondes D are auctioned every 2 weeks.

In addition to regular auctions, there are a few syndicated auctions designed to place new issues among a broad universe of investors and ensure that a new issuance reaches a large outstanding amount from the first placement.

UDI inflation-linked account. The Unidades de Inversión is calculated daily, such that the shift in the UDI rate from the 10th to the 25th of every month is equal to the bi-weekly CPI rate in the second half of the previous month. The shift from the 25th to the 10th will be equal to the CPI variation in the first half of the month. This mechanism ensures that a portion of the future accrual of the UDI is known in advance. For example, when the bi-weekly inflation for the first half of the month is released, market participants learn the daily UDI that will apply for each day until the 10th day of the following month.

Analogously, the daily UDI that will be applied for each day until the 25th of the current month is known when the bi-weekly inflation corresponding to the second half of the previous month is released.

Derivatives market

TIIE swaps

Mexico's interest rate derivative market is one of the most liquid in Latin America. The most popular interest rate swap is the fixed-floating TIIE swap, a name derived from the floating leg reference. The Tasa de Interés Interbancaria de Equilibrio (TIIE) is the average 28-day interbank lending rate. The TIIE is determined on a daily basis through a survey of local banks conducted by Banxico. In the last 12 months, the 28-day TIIE rate has been on average 36bp higher than the Fondeo rate (monetary policy rate). Despite the wide basis between the TIIE and the effective Fondeo rate, the short end of the TIIE swap is a direct way to trade on Banxico's monetary policy path due to its stability.

Netted payments in a TIIE swap for the floating and fixed legs are exchanged every 28 days. By market convention, swap maturities are quoted based on the number of payment dates. For example, there will be 13 payment dates over the course of a year, so a 1y TIIE swap is quoted as a 13x1. TIIE swaps are very liquid with a typical average bid-ask spread of 2bp. Liquidity is generally good out to 10 years.

21. http://finanzaspublicas.hacienda.gob.mx/work/models/Finanzas_Publicas/docs/paquete_economico/paf/paf_2018.pdf

Table 176: Summary statistics of Mexico derivative products and their markets

Product	Avg daily trading volume	Avg transaction Size	Bid-ask Spread	Fixings and other notes
Interest rate swap				
TIIE swaps	750k-1m DV01	10-20k DV01	2bp	3m - 30y, liquid up to 10y
TIIE volatility	100k Vega	10-20k Vega	1%	1m1y – 10y10y, caps-floors 6m – 10y
Cross currency				
TIIE x LIBOR	50k DV01	10k DV01	3-5bp	3m - 30y, 10y the most liquid tenor
UDI x LIBOR	20k DV01 weekly (combined with UDI x TIIE)	5-10k DV01	10-15bp	Traded but thin market
UDI x TIIE	20k DV01 weekly (combined with UDI x TIIE)	5-10k DV01	10-15bp	Traded but thin market

Source: BofA Merrill Lynch Global Research

Netted payments are exchanged at the end of every 28-day period based on the following two cash flow amounts:

$$\textit{Fixed leg amount} = \textit{Notional} * (\textit{swap rate}) * (28/360)$$
$$\textit{Floating TIIE leg amount} = \textit{Notional} * (TIIE_{28days}) * (28/360)$$

$TIIE_{28days}$ is the 28-day TIIE rate observed at the beginning of the reset period.

Other derivatives

Liquidity in other interest rate derivatives is limited, but market participants can trade in TIIE/LIBOR, UDI/TIIE, UDI/LIBOR and UDI/MXN-fixed swaps. Liquidity is best in TIIE-LIBOR swaps where the bid-ask spread is roughly 3-5bp.

UDI/LIBOR and UDI/TIIE usually trade two or three times a week. Average ticket size is 5k of DV01 up to 5y tenors and 10k of DV01 for 7y and beyond. Liquidity is focused in the 5-7y range. Bid/offer is around 10-15bp. The swaps all work similarly in that principal is exchanged at inception and maturity, but payment dates vary by instrument.

Interest rate options[22]

Mexico has a relatively liquid market for interest rate options, with the underlying being TIIE swaps. Expiries range from one month to 10 years on underlying TIIE swaps ranging from one year to 10 years. The most common structures are payer and receiver swaptions. Investors may also trade caps/floors which pays the buyer a spread whenever 28d TIIE fixes above/below the agreed upon strike.

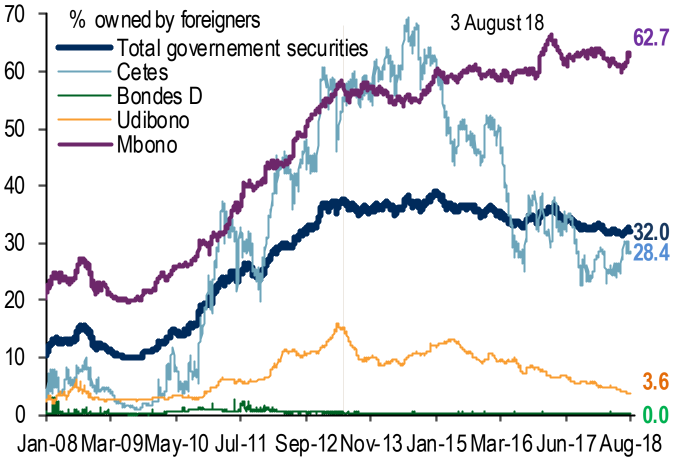
FX market

According to the Bank for International Settlements (BIS), MXN is one of the most liquid EM currencies, accounting for 1.9% of global daily FX turnover in 2016.[23] It is also the only deliverable currency in LatAm. Average daily volume in the spot is around US$10bn. The liquidity and deliverability of the peso makes it a preferred currency for global investors that often use it to express a view on global risk appetite or hedge other EM FX exposures. Historically, USD/MXN spot has consistently exhibited a high degree of correlation to US equities and risk appetite indices such as the VIX, although recently that correlation has fallen (Chart 173) as Banxico's tight monetary stance make MXN an expensive currency to short, and valuations have been affected by idiosyncratic risk (NAFTA negotiations and 2018 presidential elections). In addition to spot, FX swaps are deliverable and quoted out to two years. Average daily turnover in FX swaps is around US$20bn. For tenors longer than one year, investors engage in cross-currency swaps. Liquidity in USD/MXN currency options is good out to two years.

[22] For more details see: What's unique in LatAm swaptions? (http://research1.ml.com/C?q=Hgfm0ECzASUTVpttwucbzQ__&s=)

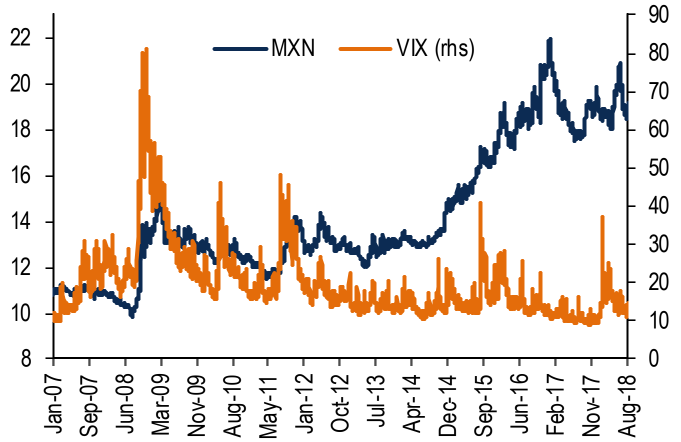
[23] Because two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%.

Chart 172: Foreigners favor Mbonos



Source: BofA Merrill Lynch Global Research, Banxico

Chart 173: USD/MXN lost its correlation to VIX



Source: BofA Merrill Lynch Global Research, Bloomberg

Table 177: Mexico's FX market vital statistics and characteristics

FX product	Tradable product	Avg daily trading volume	Avg trading size	Bid-ask spread	Reuters Reference	Key facts
Spot	MXN spot	USD10bn	USD10mn	30 pips	<MXN=>	WMR fixing
Forwards/ Swaps	Deliverable forwards	USD20bn	USD20-50mn	5-30 pips	<MXNFWD=>	deliverable
Options	Option on MXN	USD750mn	USD30mn	0.3 vols	<0#DA*.XD>	12:30 NYT cut for exercise

Source: Reuters

Investor base

Foreigners and local pension funds make up the largest share of Mexico's investor base. As of June 2018 foreign investors accounted for the largest share of Mbonos holdings with 61% of the outstanding amount. Foreigners tend to hold even larger shares of bonds with intermediate maturities (5-10 years). Local pensions are the largest holders of the longer tenors.

Local pension funds have grown so quickly that they now dominate the local investor base. In July 2018, pension fund assets under management increased to US$181bn (15% of GDP) from US$11bn (1.6% of GDP) in January 2000. The sophistication and success of the Afores system has made the pension fund segment increasingly relevant in Mexico's financial markets.

The pension fund system was transformed in 1997 from pay-as-you-go to a private scheme of defined-benefit and defined-contribution plans. The national commission for the pension system (Consar) is the regulator and supervisor. Its main objective is to regulate the retirement funds administrators of Afores – private institutions authorized to manage individual retirement accounts. There are 11 Afore pension funds that have enjoyed deregulation recently. Each worker in the formal labor force has an individual retirement account, in which contributions are obligatory for the employee, employer and the government.

The pension fund system is broken down into four types of funds that differ in the amount of investment risk (SB1 to SB4). The SB4 manages money for those younger than 36 years old and is the riskiest; SB1 manages money for people over 60 and is the most conservative. Most funds are invested in fixed income, with a heavy bias for Mexico sovereign debt. As of June 2018, 15.8% of pension fund assets were invested in domestic equities, 19.9% in local corporate debt and 48.5% in government bonds. International exposure remains small with only 16.4% of assets invested abroad (equities and fixed income), although it is growing.

Rules, regulations, capital control and taxation

In addition to having a deliverable currency, Mexico is open to foreign inflows and outflows of capital. There is no form of entry or exit taxation, or barrier for foreign capital. Although foreign investors are not allowed to collect deposits locally there are no restrictions on local lending for foreign institutions, as long as the source of funding is abroad. The strong participation of non-residents in Mbonos reflects Mexico's openness to foreign capital.

Foreign investors are exempt from withholding taxes in government securities, including the Institute for the Protection of Bank Savings (IPAB) and state-owned banks. The treatment for withholding and capital gains taxes for foreign investors depend on the instrument and on whether the non-resident is domiciled in a country with dual tax treaty with Mexico.

For countries with a dual tax treaty there are no withholding taxes for FX-linked derivatives, TIIE swaps or derivatives involving sovereign debt instruments. In addition, foreign investors from countries with a dual tax treaty with Mexico are subject to a 4.9% withholding tax over interest income on corporate debt. For investors from a country without a tax treaty the withholding rate may be higher than 4.9% and could reach 15%.

Clearing and settlement

Purchases of government bonds in primary market auctions are settled through Indeval at T+2. Indeval is a private central clearing house that serves as a securities depository and as a provider of securities settlement services. Although most transactions with government securities in the secondary market are settled at T+2, Indeval provides the option of delivery versus payment (DVP), which is determined during the time of trade and can involve settlement as early as same day (T+0). Registration of all securities is made on the settlement date by Indeval.

The typical settlement for TIIE swaps is T+1, and T+2 for TIIE-LIBOR, UDI-TIIE and UDI-LIBOR. Several OTC derivatives, such as the TIIE swap market, rely on the International Swaps and Derivatives Association (ISDA) agreements, which require non-resident investors conform to proper documentation and master agreement in Mexico.

Table 178: Summary of Mexico bond markets and products

Instrument	Mbonos	Udibonos	Cetes
Issuer	Federal government (Hacienda)	Federal government (Hacienda)	Federal government (Hacienda)
Currency	MXN	UDI (settled in MXN)	MXN
Minimum Denomination	100	100	10
Tenor	3-30y	3-30y	28-364d
Interest rate/coupon	Fixed rate	Fixed rate on Udi	Zero coupon
Coupon Payments	Semi-annual (182 d)	Semi-annual (182 d)	Zero
Day Count Calculation	Actual/182, semi-annualized 182/360	Actual/182, semi-annualized 182/360	Actual/360 simple interest
Amortization Schedule	Bullet	Bullet	Bullet
Amount outstanding (as of June 2018)	MXN$2,984bn	MXN$1,559bn	MXN$851bn
Secondary Market			
Trading	OTC	OTC	OTC
Quotation Convention	Yield	Yield	Yield
Settlement Period	T+2	T+2	T+2
Average Daily Turnover	MXN20bn	MXN4bn	MXN220bn
Bid/offer spread (0-5Y)	1bp (3-5bp for less liquid tenors)	1bp (3-5bp for less liquid tenors)	1bp
Bid/offer spread (5Y+)	1bp (3-5bp for less liquid tenors)	1bp (3-5bp for less liquid tenors)	1bp
Average trade size	MXN50mn	MXN50mn	MXN100mn
Clearing Mechanism	local clearing, Euroclearable	local clearing, Euroclearable	local clearing, Euroclearable
Major players	Non-resident investors, local pensions, banks	local pensions, banks	Non-resident investors, banks
Trading hours	7:00-14:00 (Mexico)	7:00-14:00 (Mexico)	7:00-14:00 (Mexico)
Regulations			
Restrictions on Foreign Investment	No restrictions	No restrictions	No restrictions
Custodian	Indeval	Indeval	Indeval
Withholding Tax	0.5% for locals, none for foreign investors	0.5% for locals, none for foreign investors	0.5% for locals, none for foreign investors
Capital gains Tax	None when there is a dual tax treaty	None when there is a dual tax treaty	None when there is a dual tax treaty
Entry/Exit Tax	None	None	None
Primary Auctions			
Auction Style	Dutch auction	Dutch auction	Competitive auction
Average Issue Size	Varies by tenor MXN 4.5bn – MXN 8.5 each placement	Varies by tenor UDI 650mn – UDI 800mn each placement	MXN 31.5bn biweekly

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	A3/A-/BBB+	A3/BBB+/BBB+
2017	A3/A-/BBB+	A3/BBB+/BBB+
2016	A3/A/A-	A3/BBB+/BBB+
2015	A3/A/A-	A3/BBB+/BBB+
2014	A3/A/A-	A3/BBB+/BBB+
2013	Baa1/A/A-	Baa1/BBB+/BBB+
2012	Baa1/A-/BBB+	Baa1/BBB/BBB
2011	Baa1/A/BBB+	Baa1/BBB/BBB
2010	Baa1/A/BBB+	Baa1/BBB/BBB,
2009	Baa1/A/BBB+	Baa1/BBB,/BBB,
2008	Baa1/A+/A-	Baa1/BBB+/BBB+
2007	Baa1/A+/A-	Baa1/BBB+/BBB+
2006	Baa1/A/BBB+	Baa1/BBB/BBB
2005	Baa1/A/BBB+	Baa1/BBB/BBB
2004	Baa1/A-/BBB	Baa2/BBB-/BBB-
2003	Baa1/A-/BBB	Baa2/BBB-/BBB-
2002	Baa1/A-/BBB	Baa2/BBB-/BBB-
2001	Baa1/BBB+/BBB	Baa3/BB+/
2000	Baa1/BBB+/BBB	Baa3/BB+/
1999	Baa3/BBB+/BBB-	Ba1/BB/
1998	Baa3/BBB+/BBB-	Ba2/BB/
1997	Baa3/BBB+/BBB-	Ba2/BB/
1998	Baa3/BBB+/-	Ba2/BB/
1999	Baa3/BBB+/-	Ba2/BB/
2000	Baa1/A+/-	Ba2/BB+/
2001	Baa1/AA-/-	Ba2/BB+/
2002	-/AA-/-	Ba2/BB+/

Source: Bloomberg , Moody's, S&P, Fitch
Note: As of 14 August 2018.

Conventions

Bonds

Quote: yield to maturity
Settlement: T+2:
Basis: actual/182, semi-annualized 182/360 for Mbono and Udibono, Act/360 simple interest for CETES
Coupon frequency: semi-annual (182/360)

IRS

Fixing: TIIE
Coupon frequency: 28d

CCS

Fixing: 1m LIBOR x 28d TIIE
Coupon frequency: 28d

Bloomberg pages

OTC MXN <GO> Market monitor
MBONO Govt <GO> Mbonos
MUDI Govt <GO> Udibonos
MCET Govt <GO> CETES
BMLT <GO> LatAm local markets

Reuters pages

<MXN=>

Useful official websites

Central bank
http://www.banxico.org.mx/

Finance Ministry
http://www.shcp.gob.mx/

Statistics agency
http://www.inegi.org.mx/

Pension regulator
http://www.consar.gob.mx/

Bond auctions
http://www.banxico.org.mx/portales/especializados/tasasInteres/ResuSubaPrimaNew-1.html

Useful market websites

Stock exchange
http://www.bmv.com.mx/

*Links are to third-party websites, and do not contain BofAML Global Research.

Peru

Alexander Müller
Merrill Lynch (Mexico)

Gabriel Tenorio
MLPF&S

Overview

Peru's economy is highly dependent on commodities exports, particularly copper and gold (second and sixth largest world producer, respectively). Commodities exports accounted for 74% of total goods exports in 2017, with copper and gold at 31% and 18%, respectively, up from 13% and 16% in 2000. Copper output, in particular, has skyrocketed in recent years – doubling between 2012 and 2017 – as large new mines became operational.

Nevertheless, it is also worth mentioning that far-reaching structural reforms during the nineties decade (trade & financial liberalization, more flexible labor legislation, privatization of SOEs, elimination of price controls, enactment of new Constitution which favors business interests, floating exchange rate), the 2000s (inflation targeting, trade agreements with the US, China and the EU), and more recently (fiscal rule, civil service reform, and slashing of red tape) have contributed to economic development. In fact, real GDP doubled between 1990 and 2007, and grew at an average annual pace of 4.9% in the period 2008-2017.

Peru has a democratic multi-party system with orderly transfers of power. However, governance problems stemming from corruption-prone institutions, weakness of traditional parties in the interior of the country (with regional politics dominated by local leaders), and social protests against extractive industries (mainly mining end energy) are causes for concern. In fact, as of July 2018 all of Peruvian presidents since the nineties have either been sentenced to prison (Alberto Fujimori, Ollanta Humala, Alejandro Toledo) or face corruption investigations (Alan García and Pedro Pablo Kuczynski), excluding interim Presidents Valentín Paniagua (2000-2001) and Martín Vizcarra (March 2018-present). The silver-lining, of course, is that there seems to be less room for impunity recently. Dollarization, with 29% of credit to the private sector and 39% of deposits denominated in US dollars, is another relevant source of vulnerability. Bouts of severe exchange rate depreciation can cause negative balance sheet effects for households and firms.

Monetary policy

Central Bank of Peru

Objectives

Banco Central de Reserva del Perú (BCRP) is legally autonomous. The constitution assigns it the sole objective of preserving monetary stability. It also assigns BCRP the task of regulating the currency and credit, administrating international reserves, and providing information about the nation's financial health.

Table 179: Key facts

Name	Banco Central de Reserva del Perú
Founded	1922
Governor	Julio Velarde Flores
Board members	7
Autonomous	Yes
Government representative on board	No
Terms	5 years
Inflation target	2±1%
Latest move	25bp cut (Mar 2018)

Source: BofA Merrill Lynch Global Research, BCRP

Table 180: Key links*

Main page
Board members
Inflation Report
Calendar and communiqués
Statistics
Reports
Legal framework
Presentations and speeches
English version
Ministry of Finance
National Department of Statistics

*Links are to third-party websites, and do not contain BofAML Research.
Source: BofA Merrill Lynch Global Research

Legal framework

Three basic legal instruments set the functions and duties of the central bank and its board: Articles 83-87 of the 1993 Constitution, the bank's organic law (Presidential Decree No. 26126 of 1994) and the bank's statutes (Board Resolution No. 018 of 2009). The constitution sets the objective, functions and principles for appointment to the BCRP's board. The law and statutes describe the management and administration of the central bank, the requirements for being a board member, the rules for their removal, the functions and powers of the board, the governor and the central bank manager, and the labor regime covering the bank's staff.

Decisions

The central bank's highest authority is its board, which has seven members: the Chairman and six directors. All members are elected for five-year terms, which must coincide with the presidential term. There are no term limits, so board members can be reappointed indefinitely. The president appoints four members, including the Chairman. Congress ratifies the governor and appoints the three remaining members.

The rules on appointment and removal of board members are designed to help preserve the BCRP's autonomy. Board members can only be replaced in case of death, resignation, removal through a congressional vote, four consecutive unjustified absences from board meetings or if the member is not sworn in during the 30 days following appointment. The directors can be removed because of a crime committed or serious misconduct, and only by a two-thirds congressional vote. In case of removal, a new board member will be appointed to serve the remaining period in his or her predecessor's five-year term.

The board requires a minimum of four members to be present at its monthly meetings. Regardless of the number of members present, four favorable votes are required to make a decision. The governor has the deciding vote in case of a tie.

The current board

The current general governor, Julio Velarde Flores, who has a PhD in economics from Brown University, has headed the Central Bank of Peru since 2006. Previously, he was in charge of the Fondo Latinoamericano de Reservas. Velarde was named LatAm Central Bank Governor of the Year in 2010 by *Emerging Markets* and Global Central Bank Governor of the Year in 2015 by *The Banker*. Currently, he is serving a third five-year term, which ends in July 2021. President Pedro Pablo Kuczynski nominated Velarde in August 2016, and congress confirmed him in September 2016.

Velarde is considered orthodox and hawkish. During the 2010-11 hiking cycle, he stated many times that after the strong stimulus in 2009, monetary policy should be used to bring inflation back to target. He headed a board that increased the reference rate 300bp and increased reserve requirements nine times between May 2010 and May 2011. However, he also led the board in its decision to cut local currency reserve requirements, from 30% mid-2013 to 5% (since mid-2017), and to lower the reference rate by 150bp since May 2017, with some cuts delivered with headline inflation above the target range. Arguably, the two last easing cycles (2013-2015 and 2017-2018), with a small tightening cycle in between, tempered the market's view of Velarde's hawkishness.

In September 2016, congress ratified the four appointments proposed by the executive branch: Julio Velarde, Gustavo Adolfo Yamada, Luis Miguel Palomino and Javier Escobal. Later in November, the three members proposed by congress were appointed: Jose Chlimper, Elmer Cuba and Rafael Rey. The appointment of the last three directors was highly criticized, especially Chimpler and Rey due to a lack of experience in monetary policy. Also, there were concerns about politicization of the board because the appointments were seen as an imposition by the opposition in congress, mainly due to the Fujimoristas. However, so far there have been no public disputes between board

Table 181: BCRP Board members

Name	Date originally appointed	Current term ends	Background	Known policy stance
Julio Velarde Flores	Sep 2006	Jul 2021	PhD in economics, Brown University; former president of Fondo Latinoamericano de Reservas	Considered orthodox and hawkish. During the 2010-11 hiking cycle, he stated many times that after the strong 2009 stimulus monetary policy should be used to bring inflation back to target.
Luis Miguel Palomino Bonilla	Sep 2016	Jul 2021	PhD in finance, University of Pennsylvania. IMF and BID consultant. Academic at Universidad del Pacifico, and board member of Southern Copper Corp.	His policy preferences are not well known; in the midst of the European crisis in March 2012, he stated the central bank could hike rates if external factors fueled domestic inflation.
José Chlimper Ackerman	Nov 2016	Jul 2021	Bachelor's degree in economics and business administration, North Carolina State University. Former BCRP board director in the 2006-2010 period.	Banker and businessman, vice presidential candidate in the 2016 election with the Fujimoristas.
Elmer Cuba Bustinza	Nov 2016	Jul 2021	Master in economics, Universidad Catolica de Chile. WB consultant. Associate of Grupo Macroconsult.	He describes himself as Keynesian in the short term and a classic economist in the long term. He has stated that high deficit and hyperinflation at the end of the 1980 were the concerns that made him an economist. Cuba was Keiko Fujimori's Chief Economic Advisor during the 2016 presidential campaign.
Javier Escobal D'Angelo	Sep 2016	Jul 2021	PhD in economic development, Wageningen University; Ministry of Finance adviser. Senior researcher at GRADE.	His policy preferences are not well known.
Rafael Rey Rey	Nov 2016	Jul 2021	Bachelor's degree industrial engineering, Universidad de Piura. Former minister of production and minister of defense.	His policy preferences are not well known. He was the vice presidential candidate in the 2011 election with the Fujimoristas.
Gustavo Adolfo Yamada Fukusaki	Dec 2013	Jul 2021	PhD in economics, Columbia University; former labor vice minister. IMF and BID consultant.	Has stated that the BCRP should not have an hypothetically dual mandate and that the central bank should continue focusing only on inflation.

*There are no legal limits terms for reelection.

Source: BofA Merrill Lynch Global Research, BCRP

members or any signal that the board is not working in an independent way. Velarde and Yamada are the only members that remain from the previous board.

The lack of public policy statements makes it difficult to pin down board members' views. Out of the seven board members, Julio Velarde and Elmer Cuba speak very often to the press. Miguel Palomino and Gustavo Yamada speak occasionally. But, to the best of our knowledge, the remaining three board members have never expressed their views on monetary policy in public media. Additionally, we highlight that three BCRP staff members are considered very influential in the conduction of Peru's monetary policy; namely: General Manager Renzo Rossini (the de-facto deputy governor), Chief Economist Jorge Estrella, and deputy manager for monetary policy Paul Castillo. They actively participate in public forums, and their opinions are well-known.

Monetary policy regime and instruments

In 2002, the Central Bank of Peru adopted an explicit inflation targeting regime with a target of 2.5% +/- 1%, which was lowered to 2% in 2007. The board meets once a month to decide on the reference policy rate, publishing its decision and a brief statement after market close. Average inflation from 2002-2006 was 1.95% and 3.05% from 2007-2018. Long-term inflation expectations seem to be systematically stuck around 2.5%, 50bp above the target, which is a challenge for the BCRP to address in

Table 182: Meetings and releases in 2018

	Monetary policy meeting	Inflation report
Jan	Thu, 11 Jan	
Feb	Thu, 8 Feb	
Mar	Thu, 8 Mar	23 Mar
Apr	Thu, 12 Apr	
May	Thu, 10 May	
Jun	Thu, 7 Jun	15 Jun
Jul	Thu, 12 Jul	
Aug	Thu, 9 Aug	
Sep	Thu, 13 Sep	21 Sep
Oct	Thu, 11 Oct	
Nov	Thu, 8 Nov	
Dec	Thu, 13 Dec	21 Dec

Source: BofA Merrill Lynch Global Research, BCRP

coming years. The BCRP started publishing a quarterly inflation report, its flagship publication, in 2002. The operational target used to achieve the BCRP's overriding goal, the 2% inflation target, is the reference rate at its daily open market operation auction (PRRRONUS Index on Bloomberg).

Exchange rate regime and instruments

PEN has been a free-floating currency since 1990, but a high level of dollarization has constrained monetary policy flexibility. In August 2018, 28.2% of the total credit to the private sector was extended in USD according to the BCRP, while in 2003 it was above 70%. Portfolio inflows, amid moderate current account deficits, sustained a rate of appreciation, which the central bank tried to fight with aggressive reserve accumulation up to 2013.

Although the BCRP purchased dollars in order to prevent local currency appreciation for several years, in 2013 it shifted course and started selling dollars in order to prevent rapid depreciation. In 2013-2015, reserves diminished more than 10% from a record high of US$68bn to $57.7bn. During 2017 the central bank bought dollars to mitigate volatility in the FX market according to Central Bank Governor Julio Velarde. The Central Bank mainly intervenes using dollar purchases/sales, dollar-indexed CDs, and FX swaps.

International reserves increased to US$63.6bn in December 2017 from 61.7bn in December 2016, but fell to US$59.4bn in September 2018. The latest drop in reserves is mainly attributable to the deep cuts in foreign currency reserve requirements (to 35% in July 2018, from 70% in December 2017) which the BCRP implemented as a preemptive measure to cushion the tightening of international USD funding conditions. In fact, a cleaner measure of international reserves for partially dollarized economies (such as Peru) – that is, the net international FX position, which nets out short-term USD liabilities with residents (mostly USD reserve requirements and USD deposits of the government) – shows that net reserves have actually continued increasing. In fact, the BCRP's net international FX position increased to USD$38.3bn in September 2018 (from US$ 37.5bn in December 2017 and US$27.1bn in December 2016) amid a growing trade surplus.

Credit regulation functions

The Central Bank of Peru sets reserve requirements and regulates interbank credit. The minimum legal requirement for deposits in local currency is 1%. Additional reserves in local currency are remunerated at the overnight rate, less 195bp; additional reserves in foreign currency are remunerated at 25% of Libor.

Current policy stance

The Central Bank of Peru maintained its reference rate at 2.75% on 13 September, 2018. The BCRP has stayed put for six consecutive meetings, after cutting 150bp between May 2017 and March 2018 in a context of weaker GDP growth (2.5% in 2017, from 4% in 2016), falling headline inflation (1.4% in 2017, from 3.2% in 2016), and lower inflation expectations. In 2018, however, GDP growth is accelerating substantially and inflation is firming up gradually.

The extremely low headline inflation print observed in March 2018 was the consequence of a big base effect; as food prices, which account for almost 40% of the CPI basket, spiked in March 2017 when El Niño disrupted supply conditions. In fact, governor Velarde has repeatedly stressed that the low levels of inflation recorded throughout 2018 are explained by the normalization of agricultural supply and that monetary policymakers usually look through this kind of one-off supply shocks. Moreover, Velarde pointed out that annual core inflation (ex food and energy) is broadly in line with the BCRP's. Additionally, we highlight that the BCRP has an optimistic growth outlook, expecting GDP growth to accelerate to 4% in 2018 and 2019 (as per the official projections presented in the latest quarterly inflation report, published in September).

Meetings, data and information dissemination

The Central Bank of Peru meets monthly to make policy rate and FX intervention decisions. The meetings typically take place on the Thursday of the second week of each month. The schedule is usually published in the January communiqué.

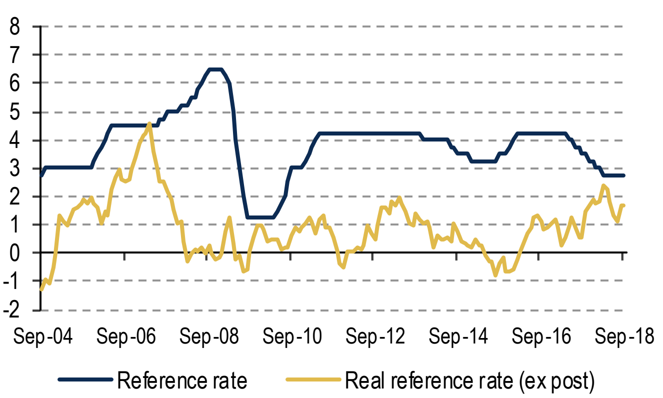
There are no minutes released after the meeting; only a presentation and a statistical annex are published. BCRP also publishes quarterly inflation reports and bi-annual financial stability reports. Although the bank publishes several economic and financial data series on its website, the National Institute of Statistics and Information (INEI) is primarily responsible for disseminating the country's statistics, including the national accounts. The law requires BCRP to disseminate balance of payments and monetary statistics exclusively. The BCRP's website has Spanish and English versions.

Fiscal policy and debt issuance

Fiscal policy

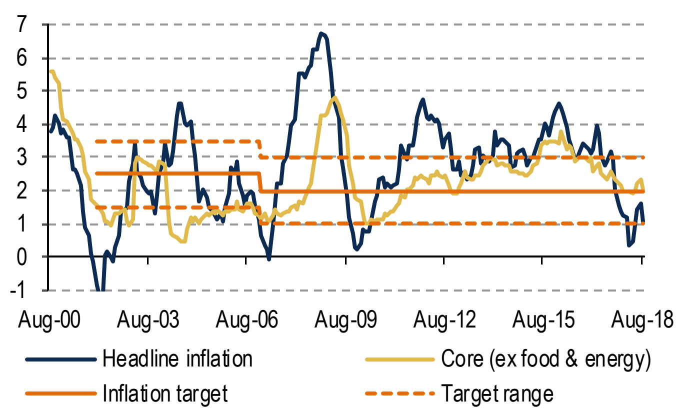
Non-financial expenditures of the general government (encompassing the central, regional, and local governments) totaled 20% of GDP in 2017, while the interest bill was 1.2% of GDP. The fiscal balance deteriorated significantly over the past years, from a 2.3% of GDP surplus in 2012 to a -3.1% of GDP deficit in 2017. The causes were the end of the commodities super cycle (which dented tax revenues from the mining and hydrocarbons sectors), the slowdown of GDP, and tax cuts implemented in the Humala (2011-2016) and Kuczynski administrations (2016-2018). The GDP pick-up coupled with higher metal prices, nevertheless, are boosting government revenues and, according to the Central Bank's data, the rolling 12-month fiscal deficit narrowed to 2.1% of GDP in August 2018. Moreover, the recent excise tax hikes on several goods (fuels, sugary &

Chart 176: Nominal and real monetary policy rate



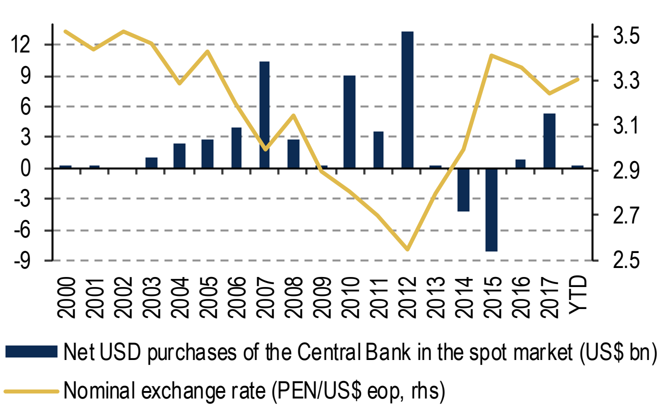
Source: BofA Merrill Lynch Global Research, BCRP

Chart 177: Inflation targeting and inflation measures



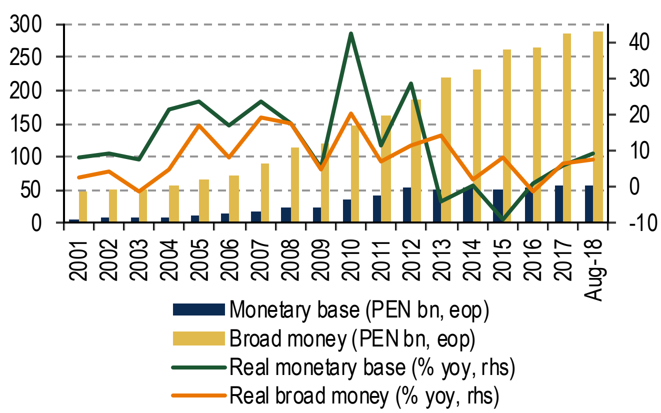
Source: BofA Merrill Lynch Global Research, BCRP

Chart 174: Central Bank FX interventions in the spot market



Source: BofA Merrill Lynch Global Research, BCRP

Chart 175: Monetary aggregates



Source: BofA Merrill Lynch Global Research, BCRP

alcoholic beverages, cigarettes, and vehicles) coupled with current spending cuts approved by interim President Vizcarra (March 2018-present) will likely support the fiscal accounts further. We note that under the current fiscal rule, approved in 2013, the headline and structural fiscal deficit need to converge to the long-term target of 1% of GDP by 2021. Importantly, we note that Peru's net public debt has increased from 2.7% of GDP in 2013 to 8.6% of GDP in the second quarter of 2018, but nevertheless remains at a low level compared to Latam peers.

Local bonds

Peru issues local fixed-rate bonds (Soberanos) with maturities up to 2055. There was a total PEN$93bn (US$28bn) outstanding of fixed-rate Soberanos by the end of June 2018. The highest volume is concentrated in the 2028, 2031 2026, 2032 and 2024 tenors (in decreasing order), which are therefore the most liquid. Non-residents hold 44% of bonds, followed by local pension funds (AFPs) with 31% and local banks with 9%. Non-resident holdings have fallen considerably over the past few months from 51% in September 2017 amid political uncertainty. In 2016, Peru issued a Soberano 2032 (144A, RegS) that is itself Euroclearable and therefore does not need to be converted into GDNs to transact in Euroclear.

Peru also issues bonds linked to inflation (VAC) with maturities up to 2054. However, the issues are relatively small (PEN$8bn or US$2.5bn outstanding) and illiquid, and the vast majority is held by local pension funds and insurance companies.

Derivatives market

Investors can also trade cross currency swaps to express a view on local rates, yet we caution that liquidity in these is poor. In a PEN/LIBOR swap an investor agrees to pay a fixed local rate in exchange for 6m LIBOR semi-annually.

Table 183: Summary statistics of Peru derivative products and their markets

Product	Avg daily trading volume	Avg transaction size	Bid-ask spread	Fixings and other notes
Cross currency swap				
PEN x LIBOR	USD5mn	USD3mn	20bp	Poor liquidity

Source: BofA Merrill Lynch Global Research

FX market

PEN is non-deliverable and daily trading volume averages US$300mn. The central bank intervenes regularly in the currency market in order to prevent sharp swings in the exchange rate. Intervention can be in the spot market, via currency swaps or via dollar-linked certificates of deposits (CDRs). The NDF curve is quoted out to one year. Most liquid tenors are one to three months.

Investor base

Foreign investors are the major holders of Soberanos. As of May 2018, foreigners accounted for 44% of the amount outstanding while pension funds held 31%. As of June 2018, pension funds had US$48bn of assets under management (Chart 178). As one of the more flexible systems in LatAm in terms of exposure, Peruvian pension funds held 23% of their portfolio in government securities and 45% in foreign investments (as of Feb '18). The remainder is distributed among domestic deposits, corporate bonds and equities.

Rules, regulations, capital controls and taxation

Local and foreign investors are exempt from capital gains tax on government securities. There is a tax on financial transactions (ITF) at a rate of 0.005% of the amount of all financial transactions, either in domestic or foreign currency.

Table 184: Peru's FX market vital statistics and characteristics

FX product	Tradable product	Avg daily trading volume	Avg trading size	Bid-Ask spread	Reuters Reference	Key facts
Onshore						
Spot	PEN Spot	USD300mn	USD3mn	20 pips	<PEN=>	DATATEC fixing
Offshore						
NDF	Forward	USD200mn	USD3mn	30 pips	<PENNDFOR=>	DATATEC fixing
NDO	Options	Very infrequent				

Source: Reuters

Clearing and settlement

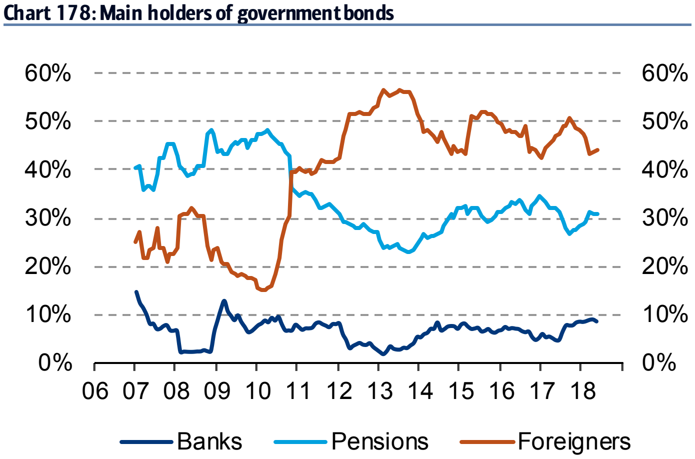
CAVALI is the major depository and clearing institution in Peru. It has been operating as an independent institution responsible for settlement services and securities custody since its spin-off from the BVL (Lima Stock Exchange) in 1997. Government securities settle through CAVALI, including those issued to primary dealers. Foreign investors must appoint a local custodian. On July 2017, the Peruvian government issued the first domestic bond Euroclearable (PEN10bn) due in 2032.

Table 185: Still highly dollarized economy (%)

	Bank credit	Deposits
2000	80.4	70.2
2001	78.2	66.6
2002	76.0	65.0
2003	72.9	61.7
2004	70.0	54.7
2005	65.5	54.3
2006	58.4	50.6
2007	55.7	45.9
2008	51.3	46.7
2009	45.3	44.0
2010	43.2	38.8
2011	43.8	37.9
2012	42.5	32.2
2013	40.4	47.4
2014	38.0	47.1
2015	30.3	45.5
2016	28.4	41.5
2017	29.3	39.5
2018	28.8	38.8

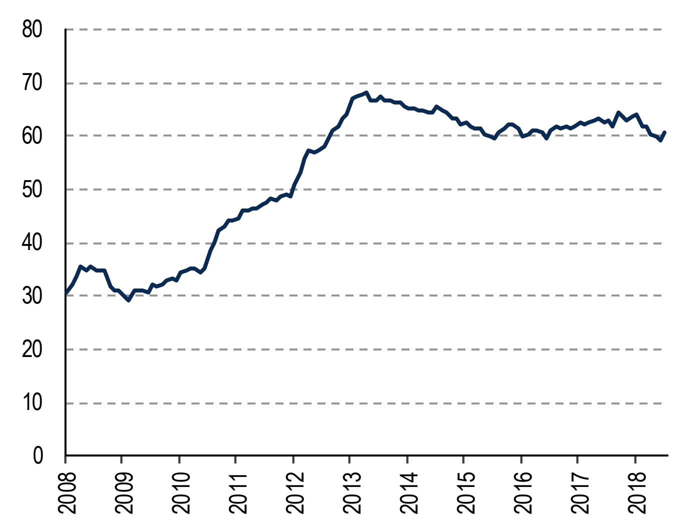
Note: As of April 2018. Source: BCRP

Chart 178: Main holders of government bonds



Source: BofA Merrill Lynch Global Research, BCRP

Chart 179: International reserves have fallen slightly in 2018 (US$bn)



Source: BofA Merrill Lynch Global Research, BCRP

Table 186: Summary of Peru bond markets and products

Instrument	Soberanos Fixed Rate	Soberano VAC-linker
Issuer	Republic of Peru	Republic of Peru
Currency	PEN	IRD/VAC (settled in PEN)
Minimum Denomination	1,000	1,000
Tenor	1y-37y	1y-36y
Interest rate/coupon	semiannual	Semiannual
Coupon Payments	Fixed rate	Fixed rate
Day Count Calculation	ACT/360	ACT/360
Amortization Schedule	Bullet	Bullet
Amount outstanding	PEN93bn	PEN8bn
Secondary Market		
Trading	Datatec	Datatec
Quotation Convention	Yield	Yield
Settlement Period	T+3	T+3
Average Daily Turnover	PEN75mn	PEN1mn
Bid/offer spread	10bp	30bp
Average trade size	PEN3mn	PEN1mn
Clearing Mechanism	Local CAVALI, or offshore, Euroclear	Local CAVALI, or offshore
Major players	Nonresidents, local funds, banks	Local banks, pension funds and insurance companies
Trading hours	9:30am-2:30pm NY	9:30am-2:30pm NY
Regulations		
Restrictions on Foreign Investment	No restrictions	No restrictions
Custodian	CAVALI	CAVALI
Withholding Tax	ITF tax (0.05% of transacted amount)	ITF tax (0.05% of transacted amount)
Capital gains Tax	Foreigners exempt, locals 30%	Foreigners exempt, locals 30%
Entry/Exit	None	None
Primary Auctions		
Auction Style	Hybrid auction	Hybrid auction
Average Issue Size	PEN20mn	PEN20mn

Source: Bloomberg, various local authorities

Local/external debt ratings

	Local	External
2018	A3/A-/A-	A3/BBB+/BBB+
2017	A3/A-/A-	A3/BBB+/BBB+
2016	A3/A-/A-	A3/BBB+/BBB+
2015	A3/A-/A-	A3/BBB+/BBB+
2014	A3/A-/A-	A3/BBB+/BBB+
2013	Baa2/A-/A-	Baa2/BBB+/BBB+
2012	Baa2/BBB+/BBB+	Baa2/BBB/BBB
2011	Baa3/BBB+/BBB+	Baa3/BBB/BBB
2010	Baa3/BBB+/BBB	Baa3/BBB-/BBB-
2009	Baa3/BBB+/BBB	Baa3/BBB-/BBB-
2008	Baa3/BBB+/BBB	Ba1,/BBB-/BBB-
2007	Baa3/BBB-/BBB-	Ba2/BB+/BB+
2006	Baa3/BBB-/BBB-	Ba3/BB+/BB+
2005	-/BB+/BB+	Ba3/BB/BB
2004	-/BB+/BB+	Ba3/BB/BB
2003	-/BB+/BB+	Ba3/BB-/
2002	-/BB+/BB+	Ba3/BB-/
2001	-/BB+/BB+	Ba3/BB-/
2000	-/BB+/BBB-	Ba3/BB-/
1999	-/BBB-/BBB-	Ba3/BB/
1998	-/BBB-/-	Ba3/BB/
1997	-/BBB-/-	B2/BB/

Source: Bloomberg. Note: Moody's/S&P/Fitch

Bloomberg pages

OTC PEN <GO> Market monitor
PERUGB Govt <GO> Soberanos

Reuters pages

<PEN=>

Useful official websites

Central bank
http://www.bcrp.gob.pe/

Finance Ministry
http://www.mef.gob.pe/

Statistics agency
http://www.inei.gob.pe/

Pension regulator
http://www.sbs.gob.pe/

Bond auctions
http://www.mef.gob.pe/ESPEC/mercado/mercado_secundario.php

Useful market websites

Lima Stock Exchange
http://www.bvl.com.pe/

*Links are to third-party websites, and do not contain BofAML Global Research.

Uruguay

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MLPF&S

Gabriel Tenorio
MLPF&S

Overview

The local debt market in Uruguay mostly consists of Treasury notes and bonds and central bank monetary regulation bills, including peso-denominated instruments and inflation-linked securities. In 2015, the central bank eliminated a marginal reserve requirement for foreign investors to buy local currency denominated instruments. The government has developed a curve of global linkers (CPI indexed) not subject to reserve requirements or other barriers. The government has also issued global peso bond (5y and 10y benchmarks). The currency is convertible and there is a free FX spot market, but the FX derivatives markets are relatively illiquid.

Uruguay is a relatively open economy where exports are concentrated in natural resources. The most important export products are grains, beef, pulp and tourism services. While it maintains important ties with its traditional trading partners, Brazil and Argentina, Uruguay has managed to diversify its export markets in recent years, reducing external vulnerabilities. The economy had grown at a relatively high average of since 2003 somewhat decoupling from Brazil and Argentina cycles. Large-scale foreign direct investment projects in pulp mill plants have helped spur economic growth. A new pulp mill may help maintain high aggregate investment levels, if confirmed.

Monetary policy

Background

The Central Bank of Uruguay (BCU) established that the main purpose of monetary policy is price stability and preserving the value of the currency, which will contribute to economic growth and protect the value of savings. In 2002, the exchange rate band mechanism was abandoned and a managed floating FX regime was adopted. The BCU has used an inflation-targeting regime based on monetary aggregates as the intermediate objective of monetary policy since 2013 (previously the central bank set interest rates).

Policy framework

The BCU has targeted inflation at a band between 3% and 7% since 2014. The inflation target and policy horizon are defined by the COPOM (monetary policy committee) with members from the BCU and the Finance Ministry. Inflation is at around 8.3% currently, within the target band. The BCU targets the consumer price index (CPI), released by INE.[24]

Monetary aggregates

The BCU adopts broad money M1 (currency, checking and savings accounts) as the intermediate objective of monetary policy to achieve its inflation objective. The COPOM typically sets a three-month M1 growth objective consistent with potential growth and the inflation target. The COPOM meets every three months and publishes a statement after each meeting, including an inflation target and monetary objectives, and it explains the monetary policy stance. The BCU also publishes a quarterly monetary policy report that analyzes economic developments and the performance of monetary policy, monetary aggregates and credit statistics and a monthly inflation expectation survey.

Open market operation

The central bank conducts its open market operations through purchases and sales of securities issued by the BCU (Letras de Regulacion Moneataria, LRM), and provides deposits and lending facilities. Recently, BCU bought back $500mn of UYU LRM

[24] Statistics Agency (Instituto Nacional de Estadística).

providing USD to satisfy the portfolio switching from pesos to USD amid weaker currencies in the region.

Reserve requirements

Reserve requirements are used infrequently as a monetary instrument to modify liquidity conditions. Reserve requirements are higher for foreign currency than for peso-denominated deposits, to promote the de-dollarization of financial intermediation. In 2012, the government introduced a 40% marginal reserve requirement for foreign investors to buy central bank bills, which was then increased to 50% and extended to Treasury bills in 2013, to reduce the volatility and to gain degrees of freedom to achieve monetary policy targets. However, the marginal reserve requirement for foreign investors was eliminated in October 2014 for Treasury bills and in May 2015 for central bank bills.

FX policy

Uruguay adopted a managed-floating FX regime in 2002, when it abandoned a crawling peg within a band. The BCU intervenes in the spot FX market to reduce volatility when it considers it necessary. The exchange rate has depreciated 15% this year after weaker currencies in Argentina and Brazil. Better credit ratings, large reserves and balanced current account made Uruguay more resilient to shocks than Argentina. Fear of floating is relatively high in Uruguay given high pass-through to prices and that is a semi-dollarized economy, with large fraction of USD deposits and FX plays big role in pricing in certain markets.

Fiscal policy

Fiscal policy

Fiscal policy generally follows the guidelines established in five-year budgetary plans with annual revisions, and there is a debt ceiling (measured in UI inflation units) voted by Parliament. The fiscal deficit remains at manageable levels, between 3 and 4% of GDP (consolidated public sector). Uruguay obtained an investment grade rating in 2012 from the main rating agencies. The government wants to reduce the deficit to 2.5% of GDP.

Debt issuance

In March 2018, gross and net public sector debt represented 57% of GDP and 24% of GDP, respectively. The government has undertaken active liability management aimed at improving the debt profile, extending maturities and reducing rollover risks. As a result, Uruguay’s debt profile is among the best in Latin America, with an average time to maturity of 15 years. The government is in the process of de-dollarizing the public debt and the amount of foreign currency-denominated debt declined to around 55% from 90% in 2004, reducing currency mismatches.

Macro drivers

In terms of market impact, the most important macro data releases are monthly CPI, industrial production and employment figures, and quarterly GDP numbers. Also, consolidated fiscal numbers are released monthly with a one-month lag. The BCU publishes an economist’s expectations survey on inflation, exchange rates and GDP growth for the next year on a monthly basis.

Bond market

The Treasury periodically issues nominal peso bonds and inflation-linked bonds in the domestic market. The Republic of Uruguay has also launched bonds in global markets denominated in US dollars, Japanese yen, euros, and Uruguayan pesos and plans to continue tapping these markets.

Treasury notes in pesos

There is one bond denominated in pesos, which matures July 2020. The bond pays a 13.9% coupon with semiannual frequency and the outstanding amount is US$600mn.

Treasury notes linked to CPI

There are 11 bonds denominated in UI units, with maturities ranging from 2019 to 2030. The majority of these bonds are bullets and the total outstanding amount is US$5.9bn.

Treasury notes linked to minimum wage

The government issued a note linked to minimum wage (unidad provisional) in August 2018, maturing August 2033. The bond pays a 1.8% coupon with semiannual frequency and the outstanding amount is US$1bn.

Global Bonds

Global financial markets have been the main source of funding in recent years. Global Bonds are instruments offered by the Republic to investors in the US registered with the Securities and Exchange Commission (SEC) and in other jurisdictions in compliance with applicable legislation.

Global Bonds represent the majority of the central government's portfolio. Most of these bonds are denominated in US dollars, but some are CPI-indexed bonds. In both cases, regular presence in the global markets ensured the proper functioning of a USD and CPI-linked bonds yield curve.

Auction mechanism

The country issues Treasury notes linked to CPI and in nominal pesos on a monthly basis. All investors (residents and non-residents) can participate in all local auctions. Non-residents can invest through a local bank or broker, given they have an open account in these institutions. Bids must indicate the nominal amount and the price offered (dirty price). Minimum amount bid by institution is UI (or UYU pesos) 100,000 and multiples of UI (or UYU pesos) 10,000 thereof. The allocation system is the Dutch method (single price).

FX market

The Uruguayan peso (UYU) is a managed floating currency with the central bank intervening to reduce undue pressure. The peso is mainly traded in an electronic exchange (Bevsa) by local banks, pension funds and brokers. Liquidity is very thin with average daily turnover of around $20mn. The spot market settles T+0 onshore and T+2 offshore. Trading hours are from 10am to 4pm local time.

The FX derivatives market is poorly developed. Most forwards are negotiated as private contracts and have maturities up to one year. Offshore forwards are non-deliverable, while onshore forwards are deliverable. Daily trading volumes for FX forwards average $2mn. No futures or options market is available.

Investor base

Uruguay's local investor base is dominated by banks, pension funds, insurance companies and broker/dealers. Private pension funds are the largest holders of public debt and the key players in the local markets.

Rules, regulations, capital control and taxation

Foreign investors in local fixed income instruments issued by the central bank, and the

Table 187: Global bonds in Uruguayan pesos linked to CPI

ISIN CODE	Name	Currency	Outstanding amount in original currency (1)	Outstanding amount (in USD)	Maturity	Type of Rate	Coupon	Amortizations
US760942AU61	URUGUA UI 4.25% 2027	Uruguayan Pesos Linked to CPI	12.1bn	1.5bn	04/05/2027	Fixed	4.250	33,3% 05/04/2025 to 2027
US917288BD36	URUGUA UI 4.375% 2028	Uruguayan Pesos Linked to CPI	39.8bn	4.9bn	12/15/2028	Fixed	4.375	33,3% 15/12/2026 to 2028
USP80557AD64	URUGUA UI 4% 2030	Uruguayan Pesos Linked to CPI	14.7bn	1.8bn	07/10/2030	Fixed	4.000	33,3% 26/06/2028 to 2030
US760942AV45	URUGUA UI 3.7% 2037	Uruguayan Pesos Linked to CPI	11.9bn	1.5bn	06/26/2037	Fixed	3.700	33,3% 26/06/2035 to 2037

Notes: The original outstanding amount of the Global Bonds in Uruguayan pesos linked to CPI is expressed in Unidades Indexadas (UI) at the issuance date.
Source: Debt Management Unit of Ministry of Finance

general government do not have to keep a marginal reserve requirement. They were subject to a 50% marginal reserve requirement in the past, but the requirement was eliminated. There are no tax requirements attached to investments on public debt securities. Corporate debt interest is subject to a 12% income tax. There are no constraints on FX transactions or limitations to capital mobility.

Clearing and settlement

Local securities are registered only at the Central Bank of Uruguay. Settlement is T+1. Notes denominated in UI are converted into UYU at the corresponding index UI/UYU at the settlement date (Bloomberg URUIURUI Index). Coupon payments and principal amortization will take place at the equivalent in UYU using the corresponding index UI/UYU as of settlement date. Bloomberg ticker UNT Govt.

Local/external debt ratings

	Local	External
2018	Baa2/BBB/BBB-	Baa2/BBB/BBB-
2017	Baa2/BBB/BBB-	Baa2/BBB/BBB-
2016	Baa2/BBB/BBB-	Baa2/BBB/BBB-
2015	Baa2/BBB-/BBB-	Baa2/BBB/BBB-
2014	Baa2/BBB-/BBB	Baa2/BBB/BBB-
2013	Baa3/BBB-/BBB	Baa3/BBB-/BBB-
2012	Baa3/BBB-/BBB	Baa3/BBB/BB+
2011	Ba1/BB+/BBB-	Ba1/BBB/BB+
2010	Ba1/BB/BB+	Ba1/BB+/BB,
2009	Ba3/BB-/BB	Ba3/BB/BB-
2008	B1/BB-/BB	B1/BB/BB-
2007	B1/B+/BB	B1/B+/BB-
2006	B1/B+/BB-	B1/B+/B+
2005	B3/B/BB-	B3/B/B+
2004	B3/B/B+	B3/B/B
2003	B3/B-/-	B3/B-/
2002	-/B-/-	B3/B-/
2001	-/BBB+/-	Baa3/BBB-/

Note: Moody's/S&P/Fitch.
Source: Bloomberg, BofA Merrill Lynch Global Research

Bloomberg pages

BMLT <GO> - LatAm local markets
BTMM UY <GO> - Treasury market

Useful official websites

Central bank
http://www.bcu.gub.uy/

Finance Ministry
http://www.mef.gub.uy/

Statistics agency
http://www.ine.gub.uy/

Useful market websites
Bolsa de Valores
http://www.bvm.com.uy/

Electronic Exchange
http://www.bevsa.com.uy/

*Links are to third-party websites, and do not contain BofAML Global Research.

Appendix: bond index rules

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Sovereign indices – nominal

The ICE BofAML All Maturity Emerging Markets Sovereign Bond Index (WALE)

The ICE BofAML All Maturity Emerging Markets Sovereign Bond Index (WALE) is designed to track the performance of emerging markets sovereign debt publicly issued and denominated in the issuer's domestic currency. In order to be considered for inclusion in the Index a country:

- must have at least $10 billion (USD equivalent) outstanding face value of Index qualifying debt (ie, after imposing constituent level filters on amount outstanding, remaining term to maturity, etc);
- must have at least one readily available, transparent price source for its securities;
- must not be a member of the FX-G10, Western Europe, or a territory of the US or Western Europe. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden.

Qualification with respect to country size criteria is determined annually based on information as of 30 June, but does not take effect until 30 September. Conversion of local currency outstanding face value into USD terms is based on the average of the previous 12 month-end exchange rates up to and including the 30 June evaluation date.

Currently qualifying countries and their respective minimum local currency requirements for bond amounts outstanding can be found in the table below.

Table 188: Qualifying countries and bond minimum amounts outstanding

Country	Minimum	Country	Minimum
Brazil	BRL 1bn	Nigeria	NGN 1bn
Chile	CLP 100bn	Peru	PEN 1bn
China	CNY 20bn	Philippines	PHP 5bn
Colombia	COP 500bn	Poland	PLZ 2bn
Czech Republic	CZK 20bn	Romania	RON 1bn
Egypt	EGP 2bn	Russia	RUB 10bn
Hong Kong	HKD 500mn	Singapore	SGD 1bn
Hungary	HUF 50bn	South Africa	ZAR 5bn
India	INR 30bn	South Korea	KRW 1tn
Indonesia	IDR 5tn	Sri Lanka	LKR 40bn
Israel	ILS 1bn	Taiwan	TWD 10bn
Malaysia	MYR 1bn	Thailand	THB 10bn
Mexico	MXN 5bn	Turkey	TRY 2bn
Morocco	MAD 2.5bn	Vietnam	VND 2bn

Source: ICE Data Indices, LLC

In addition, qualifying securities must have at least one month remaining term to final maturity, at least 18 months to final maturity at time of issuance and a fixed coupon schedule. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating rate securities also qualify provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Brazil Treasury Bills are included provided they have at least one month to maturity at point of issue and meet all other size and maturity requirements. All other Treasury Bills are excluded along with inflation-linked debt and strips.

Original issue zero coupon bonds are included in the index and the amounts outstanding of qualifying coupon securities are not reduced by any portions that have been stripped. Global securities issued in the US and international markets qualify for inclusion in the index. Securities issued or marketed primarily to retail investors do not qualify for inclusion in the index.

Index constituents are capitalization-weighted based on their current amount outstanding times the market price plus accrued interest. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the Index. The Index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. Issues that meet the qualifying criteria are included in the Index for the following month. Issues that no longer meet the criteria during the course of the month remain in the Index until the next month-end rebalancing at which point they are removed from the Index.

The ICE BofAML Diversified Emerging Markets Sovereign Bond Index (WALD)

The ICE BofAML Diversified Emerging Markets Sovereign Bond Index (WALD) is based on the broad universe defined by The ICE BofAML All Maturity Emerging Markets Sovereign Bond Index (WALE), but applies subjective criteria for liquidity and foreign investability. In addition, concentration limits are imposed to better align with typical investor diversification guidelines.

The ICE BofAML Diversified Emerging Markets Sovereign Bond Index (WALD) is designed to track the performance of emerging markets sovereign debt publicly issued and denominated in the issuer's own domestic currency and available to foreign investors. In order to be considered for inclusion in the Index a country:

- must have at least $10 billion (USD equivalent) outstanding face value of Index qualifying debt (ie, after imposing constituent level filters on amount outstanding, remaining term to maturity, etc);
- must have at least one readily available, transparent price source for its securities;
- must have debt available to foreign investors;
- must have a reasonable level of liquidity;
- must not be a member of the FX-G10, Western Europe, or a territory of the US or Western Europe. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden.

Qualification with respect to country size criteria is determined annually based on information as of 30 June, but does not take effect until 30 September. Conversion of local currency outstanding face value into USD terms is based on the average of the previous 12 month-end exchange rates up to and including the 30 June evaluation date. The accessibility and liquidity criteria will be evaluated by ICE once a year as part of the annual country review.

Table 189: Qualifying countries and bond minimum amounts outstanding

Country	Minimum	Country	Minimum
Brazil	BRL 1bn	Peru	PEN 1bn
Chile	CLP 100bn	Philippines	PHP 5bn
Colombia	COP 500bn	Poland	PLZ 2bn
Czech Republic	CZK 20bn	Romania	RON 1bn
Hong Kong	HKD 500mn	Russia	RUB 10bn
Hungary	HUF 50bn	Singapore	SGD 1bn
Indonesia	IDR 5tn	South Africa	ZAR 5bn
Israel	ILS 1bn	South Korea	KRW 1tn
Malaysia	MYR 1bn	Taiwan	TWD 10bn
Mexico	MXN 5bn	Thailand	THB 10bn
Nigeria	NGN 1bn	Turkey	TRY 2bn

Source: ICE Data Indices, LLC

In addition, qualifying securities must have at least one month remaining term to final maturity, at least 18 months to final maturity at time of issuance and a fixed coupon schedule. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating rate securities also qualify provided they are callable within the fixed rate period and are at least one month from the last call prior to the date the bond transitions from a fixed to a floating rate security. Brazil Treasury Bills are included provided they have at least one year to maturity at point of issue and meet all other size and maturity requirements.

All other Treasury Bills are excluded along with inflation-linked debt and strips. Original issue zero coupon bonds are included in the index and the amounts outstanding of qualifying coupon securities are not reduced by any portions that have been stripped. Global securities issued in the US and international markets qualify for inclusion in the index. Securities issued or marketed primarily to retail investors do not qualify for inclusion in the index.

Index constituents are capitalization-weighted, based on their current amount outstanding, provided the total allocation to an individual country does not exceed 10%. Countries that exceed the limit are reduced to 10% and the face value of each of their bonds is adjusted on a pro rata basis. Similarly, the face values of bonds of all other countries that fall below the 10% cap are increased on a pro rata basis. In the event there are fewer than 10 countries in the Index, each is equally weighted and the face values of their respective bonds are increased or decreased on a pro rata basis.

Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the Index. The Index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. Issues that meet the qualifying criteria are included in the Index for the following month. Issues that no longer meet the criteria during the course of the month remain in the Index until the next month-end rebalancing at which point they are removed from the Index.

ICE BofAML Local Debt Markets Plus Index (LDMP)

The ICE BofAML Local Debt Markets Plus Index is based on the broad universe defined by The ICE BofAML All Maturity Emerging Markets Sovereign Bond Index (WALE), but includes only securities with at least one year remaining term to final maturity, excludes AAA-AA rated countries and applies subjective criteria for liquidity and foreign investability. In addition, concentration limits are imposed to better align with typical investor diversification guidelines.

The ICE BofAML Local Debt Markets Plus Index (LDMP) is designed to track the performance of emerging markets sovereign debt publicly issued and denominated in the issuer's own domestic currency and available to foreign investors. In order to be considered for inclusion in the Index a country:

- must have at least $10 billion (USD equivalent) outstanding face value of Index qualifying debt (ie, after imposing constituent level filters on amount outstanding, remaining term to maturity, etc);
- must have at least one readily available, transparent price source for its securities;
- must be rated A1 or lower based on the average of Moody's, S&P and Fitch foreign currency long term debt ratings;
- must have debt available to foreign investors;
- must have a reasonable level of liquidity;

- must not be a member of the FX-G10, Western Europe, or a territory of the US or Western Europe. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden.

Qualification with respect to country size criteria is determined annually based on information as of 30 June, but does not take effect until 30 September. Conversion of local currency outstanding face value into USD terms is based on the average of the previous 12 month-end exchange rates up to and including the 30 June evaluation date. The accessibility and liquidity criteria will be evaluated by ICE once a year as part of the annual country review.

Table 190: Qualifying countries and bond minimum amounts outstanding

Country	Minimum	Country	Minimum
Brazil	BRL 1bn	Pakistan	PKR 20bn
Chile	CLP 100bn	Peru	PEN 1bn
Colombia	COP 500bn	Philippines	PHP 5bn
Czech Republic	CZK 20bn	Poland	PLZ 2bn
Hungary	HUF 50bn	Romania	RON 1bn
Indonesia	IDR 5tn	Russia	RUB 10bn
Israel	ILS 1bn	South Africa	ZAR 5bn
Malaysia	MYR 1bn	Thailand	THB 10bn
Mexico	MXN 5bn	Turkey	TRY 2bn
Nigeria	NGN 1bn	Vietnam	VND 4tn

Source: ICE Data Indices, LLC

In addition, qualifying securities must have at least one year remaining term to final maturity, at least 18 months to final maturity at time of issuance and a fixed coupon schedule. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating rate securities also qualify provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Brazil Treasury Bills are included provided they have at least one year to maturity at point of issue and meet all other size and maturity requirements.

All other Treasury Bills are excluded along with inflation-linked debt and strips. Original issue zero coupon bonds are included in the index and the amounts outstanding of qualifying coupon securities are not reduced by any portions that have been stripped. Global securities issued in the US and international markets qualify for inclusion in the index. Securities issued or marketed primarily to retail investors do not qualify for inclusion in the index.

Index constituents are capitalization-weighted, based on their current amount outstanding, provided the total allocation to an individual country does not exceed 10%. Countries that exceed the limit are reduced to 10% and the face value of each of their bonds is adjusted on a pro rata basis. Similarly, the face values of bonds of all other countries that fall below the 10% cap are increased on a pro rata basis. In the event there are fewer than 10 countries in the Index, each is equally weighted and the face values of their respective bonds are increased or decreased on a pro rata basis.

Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the Index. The Index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. Issues that meet the qualifying criteria are included in the Index for the following month. Issues that no longer meet the criteria during the course of the month remain in the Index until the next month-end rebalancing at which point they are removed from the Index.

Sovereign indices – inflation-linked

The ICE BofAML All Maturity Emerging Markets Inflation-Linked Sovereign Bond Index (WILE)

The ICE BofAML All Maturity Emerging Markets Inflation-Linked Sovereign Bond Index is designed to track the performance of inflation-linked emerging markets sovereign debt publicly issued and denominated in the issuer's own domestic currency. In order to be considered for inclusion in the Index a country:

- must have at least $2 billion (USD equivalent) outstanding face value of Index qualifying debt (ie, after imposing constituent level filters on amount outstanding, remaining term to maturity, etc);
- must have at least one readily available, transparent price source for its securities;
- must not be a member of the FX-G10, Western Europe, or a territory of the US or Western Europe. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden.

Qualification with respect to country size criteria is determined annually based on information as of 30 June, but does not take effect until 30 September. Conversion of local currency outstanding face value into USD terms is based on the average of the previous 12 month-end exchange rates up to and including the 30 June evaluation date.

Currently qualifying countries and their respective minimum local currency requirements can be found in the table below.

Table 191: Qualifying countries and bond minimum amounts outstanding

Country	Minimum	Country	Minimum
Brazil	BRL 1bn	South Africa	ZAR 5bn
Chile	CLP 100bn	South Korea	KRW 1tn
Colombia	COP 500bn	Thailand	THB 10bn
Israel	ILS 1bn	Turkey	TRY 2bn
Mexico	MXN 5bn	Uruguay	UYU 3bn
Poland	PLZ 2bn		

Source: ICE Data Indices, LLC

In addition, qualifying securities must have at least one month remaining term to final maturity, at least 18 months to final maturity at issuance and interest and principal payments tied to inflation. Bills and strips are excluded from the Index; however, original issue zero coupon bonds are included in the index and the amounts outstanding of qualifying coupon securities are not reduced by any portions that have been stripped. Securities issued or marketed primarily to retail investors do not qualify for inclusion in the index.

Index constituents are capitalization-weighted based on their current amount outstanding times the market price plus accrued interest. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the Index. The Index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. Issues that meet the qualifying criteria are included in the Index for the following month. Issues that no longer meet the criteria during the course of the month remain in the Index until the next month-end rebalancing at which point they are removed from the Index.

The ICE BofAML Diversified Emerging Markets Inflation-Linked Sovereign Bond Index (WILD)

The ICE BofAML Diversified Emerging Markets Inflation-Linked Sovereign Bond Index (WILD) is based on the broad universe defined by The ICE BofAML All Maturity Emerging Markets Inflation-Linked Sovereign Bond Index (WILE), but applies subjective criteria for liquidity and foreign investability. In addition, concentration limits are imposed to better align with typical investor diversification guidelines.

The ICE BofAML Diversified Emerging Markets Inflation-Linked Sovereign Bond Index (WILD) is designed to track the performance of inflation-linked emerging markets sovereign debt publicly issued and denominated in the issuer's own domestic currency and available to foreign investors. In order to be considered for inclusion in the Index a country must have:

- must have at least $2 billion (USD equivalent) outstanding face value of Index qualifying debt (ie, after imposing constituent level filters on amount outstanding, remaining term to maturity, etc);
- must have at least one readily available, transparent price source for its securities;
- must have debt available to foreign investors;
- must have a reasonable level of liquidity;
- must not be a member of the FX-G10, Western Europe, or a territory of the US or Western Europe. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden.

Qualification with respect to country size criteria is determined annually based on information as of 30 June, but does not take effect until 30 September. Conversion of local currency outstanding face value into USD terms is based on the average of the previous 12 month-end exchange rates up to and including the 30 June evaluation date. The accessibility and liquidity criteria will be evaluated by ICE once a year as part of the annual country review.

Currently qualifying countries and their respective minimum local currency bond amount outstanding requirements can be found in the table below.

Table 192: Qualifying countries and bond minimum amounts outstanding

Country	Minimum	Country	Minimum
Brazil	BRL 1bn	Poland	PLZ 2bn
Chile	CLP 100bn	South Africa	ZAR 5bn
Colombia	COP 500bn	South Korea	KRW 1tn
Israel	ILS 1bn	Thailand	THB 10bn
Mex ico	MXN 5bn	Turkey	TRY 2bn

Source: ICE Data Indices, LLC

In addition, qualifying securities must have at least one month remaining term to final maturity, at least 18 months to final maturity at issuance and interest and principal payments tied to inflation. Bills and strips are excluded from the Index; however, original issue zero coupon bonds are included in the index and the amounts outstanding of qualifying coupon securities are not reduced by any portions that have been stripped. Securities issued or marketed primarily to retail investors do not qualify for inclusion in the index.

Index constituents are capitalization-weighted, based on their current amount outstanding, provided the total allocation to an individual country does not exceed 20%. Countries that exceed the limit are reduced to 20% and the face value of each of their bonds is adjusted on a pro rata basis. Similarly, the face values of bonds of all other countries that fall below the 20% cap are increased on a pro rata basis. In the event there are fewer than 5 countries in the Index, each is equally weighted and the face values of their respective bonds are increased or decreased on a pro rata basis.

Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the Index. The Index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. Issues that meet the qualifying criteria are included in the Index for the following month. Issues that no longer meet the criteria during the course of the month remain in the Index until the next month-end rebalancing at which point they are removed from the Index.

Non-sovereign indices

The ICE BofAML Broad Local Emerging Markets Non-Sovereign Index (LCCB)

The ICE BofAML Broad Local Emerging Markets Non-Sovereign Index (LCCB) tracks the performance of local currency emerging markets non-sovereign debt publicly issued in the international markets. In order to qualify for inclusion an issuer must have its primary risk exposure to a country other than an FX G10 member, a Western European country or territory, or a territory of the US. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden.

The index includes corporate and quasi-government debt, but excludes sovereign, central bank and supranational debt. Individual securities of qualifying issuers must be denominated in a qualifying emerging market currency, must settle on Euroclear, must have at least 18 months to maturity at the time of issuance and at least one month remaining term to final maturity as of the rebalancing date, a fixed coupon and a readily available, transparent price source. Callable perpetual securities are included provided they are at least one month from the first call date. Fixed-to-floating rate securities are included provided they are callable within the fixed rate period and are at least one month from the last call prior to the date the bond transitions from a fixed to a floating rate security. In addition, bonds must meet the minimum outstanding face value requirements set forth below in local currency terms. Investment grade, below investment grade and non-rated bonds are included in the index but securities in legal default are excluded.

Qualifying currencies are selected annually each 30 June with any resultant changes implemented at the 30 September rebalancing. To be included in the index a currency

- must be other than an FX G10 or Western European currency;
- must have at least $10bn USD equivalent in outstanding nominal local currency sovereign debt that meets the criteria for inclusion in the local currency sovereign index;
- must have at least one readily available transparent price source for those securities.
- Conversion of local currency outstanding face value into USD terms is based on the average of the previous 12 month-end exchange rates up to and including the 30 June evaluation date. “Dual currency” bonds (bonds denominated in an EM currency but that settle in a hard currency, such as USD) are included in the index.

Qualifying currencies and bond size filters can be found in the table below.

Table 193: Qualifying currencies and minimum amount outstanding

Currency	Face amt (mm)	Currency	Face amt (mm)
BRL	150	MXN	1,250
CLP	50,000	MYR	300
CNH	500	NGN	15,000
CNY	500	PEN	250
COP	200,000	PHP	4,000
CZK	2,000	PLN	300
EGP	500	RON	300
HKD	750	RUB	3,000
HUF	20,000	SGD	100
IDR	1,000,000	THB	3,000
ILS	300	TRY	150
INR	5,000	TWD	3,000
KRW	100,000	VND	2,000
LKR	40,000	ZAR	750

Source: ICE Data Indices, LLC

Index constituents are capitalization-weighted based on their current amount outstanding times the market price plus accrued interest. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the Index.

The Index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. Issues that meet the qualifying criteria are included in the Index for the following month. No changes are made to constituent holdings other than on month-end rebalancing dates.

The ICE BofAML Diversified Local Emerging Markets Non-Sovereign Index (LOCL)

The ICE BofAML Diversified Local Emerging Markets Non-Sovereign Index (LOCL) is based on the broad universe defined by The ICE BofAML Broad Local Emerging Markets Non-Sovereign Index (LCCB), but has a higher minimum size threshold for securities and excludes sukuks. In addition, concentration limits are imposed to better align with typical investor diversification guidelines.

The ICE BofAML Diversified Local Emerging Markets Non-Sovereign Index (LOCL) tracks the performance of local currency emerging markets non-sovereign debt publicly issued in the international markets. In order to qualify for inclusion an issuer must have its primary risk exposure to a country other than an FX G10 member, a Western European country or territory, or a territory of the US. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden. The index includes corporate and quasi-government debt, but excludes sovereign, central bank and supranational debt. Individual securities of qualifying issuers must be denominated in a qualifying emerging market currency, must settle on Euroclear, must have at least 18 months to maturity at the time of issuance and at least one month remaining term to final maturity as of the rebalancing date, a fixed coupon and a readily available, transparent price source.

Callable perpetual securities are included provided they are at least one month from the first call date. Fixed-to-floating rate securities are included provided they are callable within the fixed rate period and are at least one month from the last call prior to the date the bond transitions from a fixed to a floating rate security. In addition, bonds must meet the minimum outstanding face value requirements set forth below in local currency terms. Investment grade, below investment grade and non-rated bonds are included in the index but securities in legal default are excluded. Sukuk certificates are also excluded from the index.

Qualifying currencies are selected annually each 30 June with any resultant changes implemented at the 30 September rebalancing. To be included in the index a currency:

- must be other than an FX G10 or Western European currency;
- must have at least $10bn USD equivalent in outstanding nominal local currency sovereign debt that meets the criteria for inclusion in the local currency sovereign index;
- must have at least one readily available transparent price source for those securities.

Conversion of local currency outstanding face value into USD terms is based on the average of the previous 12 month-end exchange rates up to and including the 30 June evaluation date. "Dual currency" bonds (bonds denominated in an EM currency but that settle in a hard currency, such as USD) are included in the index.

Qualifying currencies and bond size filters can be found in the table below.

Table 194: Qualifying currencies and minimum amount outstanding

Currency	Face amt (mm)	Currency	Face amt (mm)
BRL	300	MXN	2,500
CLP	100,000	MYR	600
CNH	1,000	NGN	30,000
CNY	1,000	PEN	500
COP	400,000	PHP	8,000
CZK	4,000	PLN	600
EGP	1,000	RON	600
HKD	1,500	RUB	6,000
HUF	40,000	SGD	200
IDR	2,000,000	THB	6,000
ILS	600	TRY	300
INR	10,000	TWD	6,000
KRW	200,000	VND	4,000
LKR	80,000	ZAR	1,500

Source: ICE Data Indices, LLC

Index constituents are capitalization-weighted based on their current amount outstanding times the market price plus accrued interest, subject to currency and issuer caps. Currencies are limited to the greater of 10% or 100% divided by the number of currencies in the index. (Note: CNH and CNY denominated bonds are treated as a single currency for cap purposes.) Issuers are limited to the greater of 2% or 100% divided by the number of issuers in the index. In the event that both the currency and issuer caps cannot be met, the issuer cap is given priority. Currencies and issuers that exceed the limits are reduced to their respective caps and the face value of each of their bonds is adjusted on a pro rata basis. Similarly, the face values of bonds of all other currencies and issuers that fall below their respective caps are increased on a pro rata basis.

Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the Index.

The Index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. Issues that meet the qualifying criteria are included in the Index for the following month. No changes are made to constituent holdings other than on month-end rebalancing dates.

Table 195: ICE BofAML local currency indices

	Nominal indices		
WALE	All Maturity Emerging Markets Sovereign Bond Index		
WALD	Diversified Emerging Markets Sovereign Bond Index		
WSBV	Emerging Markets Sovereign Bond Index		
WSVL	Latin America Local Currency Sovereign Bond Index		
WLCI	Investment Grade Local Currency Index		
LDMP	Local Debt Markets Plus Index		
LDMA	Asia Local Debt Markets Plus Index		
LDML	Latin America Local Debt Markets Plus Index		
LDME	EMEA Local Debt Markets Plus Index		
GLLD	Local Debt Market Plus Constrained Index		
EMAD	PIMCO Emerging Markets Advantage Local Currency Bond Index		
	Inflation-linked indices		
WILE	All Maturity Emerging Markets Inflation-Linked Sovereign Bond Index		
WILD	Diversified Emerging Markets Inflation-Linked Sovereign Bond Index		
WBDI	Global Diversified Emerging Markets Inflation-Linked Government Index		
GEMI	Global Emerging Markets Inflation-Linked Government Index		
WBDI	Global Diversified Emerging Markets Inflation-Linked Government Index		
	Non-sovereign indices		
LCCB	Broad Local Emerging Markets Non-Sovereign Index		
LCCD	Diversified Broad Local Emerging Markets Non-Sovereign Index		
LOCM	Local Emerging Markets Non-Sovereign Index		
LOCL	Diversified Local Emerging Markets Non-Sovereign Index		
	Non-sovereign sector sub-indices (LCCB)		
LACM	Asia	LOHR	AAA-AA Rated
LLCM	Latin America	LO3R	A Rated
LECM	EMEA	LO4R	BBB Rated
LOPU	Public Sector	LOIG	AAA-BBB Rated
LOPR	Private Sector	LOXO	BBB-BB Rated
LOFN	Financials	LOHY	BB-C Rated
LONF	Non-Financials	LO5R	BB Rated
LOEN	Energy	LO6R	B Rated
LOAB	Automotive & Basic Industry	LONR	Non-rated
LOMT	Media & Telecom	LOSG	SGD
LOUT	Utility	LOMY	MYR
LORE	Real Estate	LOCN	CNY/CNH
LOCG	Capital Goods	LOHK	HKD
LOCS	Consumer	LOZA	ZAR
LOTR	Transportation	LOBR	BRL
		LORU	RUB
		LOMX	MXN

Source: ICE Data Indices, LLC

Country	Nominal country indices (all maturities)	Nominal country indices (1+ year maturities)	Inflation-linked country indices (all maturities)	Inflation-linked country indices (1+ year maturities)
Brazil	GJBR	G0BR	GJBI	GBRI
Chile	GJCL	G0CL	GJEI	GCLI
China	GJCN	G0CN		
China Dim Sum	CJHG	CNHG		
Colombia	GJCO	G0CO	GCJI	GCOI
Czech Rep	GJCZ	G0CZ		
Egypt	GJEG	G0EG		
Hong Kong	GJHK	G0HK		
Hungary	GJHU	G0HU		
Indonesia	GJID	G0ID		
India	GJIN	G0IN		
Israel	GJIS	G0IS	GJSI	GISI
Malaysia	GJMY	G0MY		
Mexico	GJMX	G0MX	GJXI	GMXI
Morocco	GJMA	G0MA		
Nigeria	GJNG	G0NG		
Peru	GJPE	G0PE		
Philippines	GJPH	G0PH		
Poland	GJPL	G0PL	GJPI	G0PI
Romania	GJRO	G0RO		
Russia	GJRU	G0RU		
South Africa	GJSA	G0SA	GJAI	GSAI
South Korea	GJSK	G0SK	GJKI	GSKI
Singapore	GJSP	G0SP		
Sri Lanka	GJLK	G0LK		
Thailand	GJTH	G0TH	GJHI	GTHI
Taiwan	GJTW	G0TW		
Turkey	GJTR	G0TR	GJRI	GTRI
Uruguay			GJUI	GUYI
Vietnam	GJVN	G0VN		

Source: ICE Data Indices, LLC

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