



Managing the Permanence of Spillovers

Alejandro Díaz de León Carrillo, Governor, Banco de México*

September, 2019



*/ The opinions/points of view herein stated are the author's responsibility and do not necessarily represent the institutional view of Banco de México or its Governing Board.

Outline

1 Greater Integration of EMs with Global Financial Markets

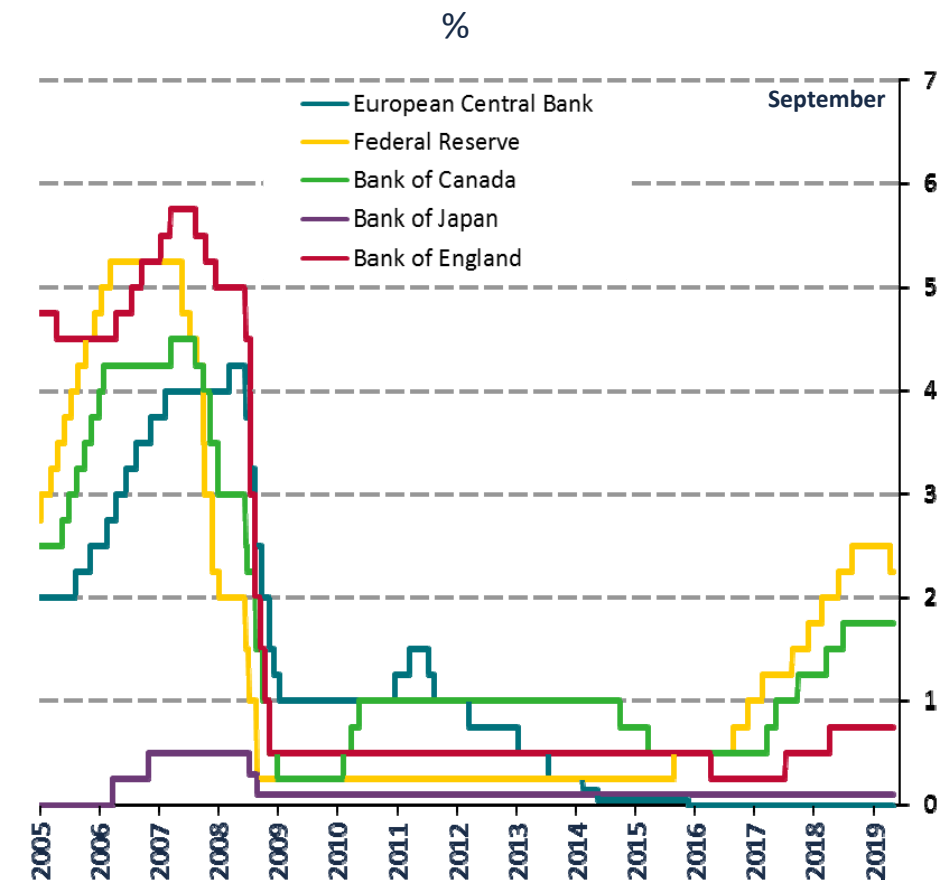
2 Recent Trends in Global Financial Markets and Spillovers to EMs

3 Managing Global Spillovers: The Case of Mexico

1 Stronger integration of EMs with Global Financial Markets

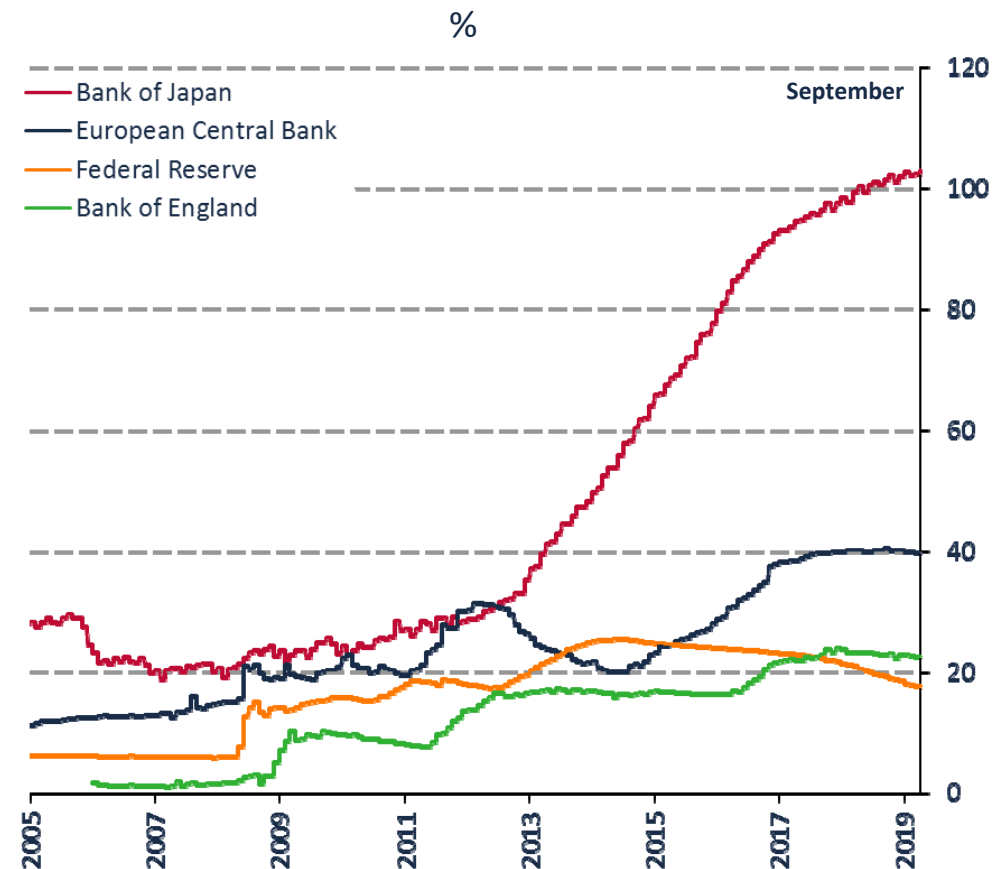
In response to the 2008 financial crisis, central banks in AEs adopted an accommodative monetary policy, leading investors to a search for higher returns.

Advanced Economies: Reference Rates



Source: Bloomberg.

Balance of Selected Central Banks as a Percentage of GDP

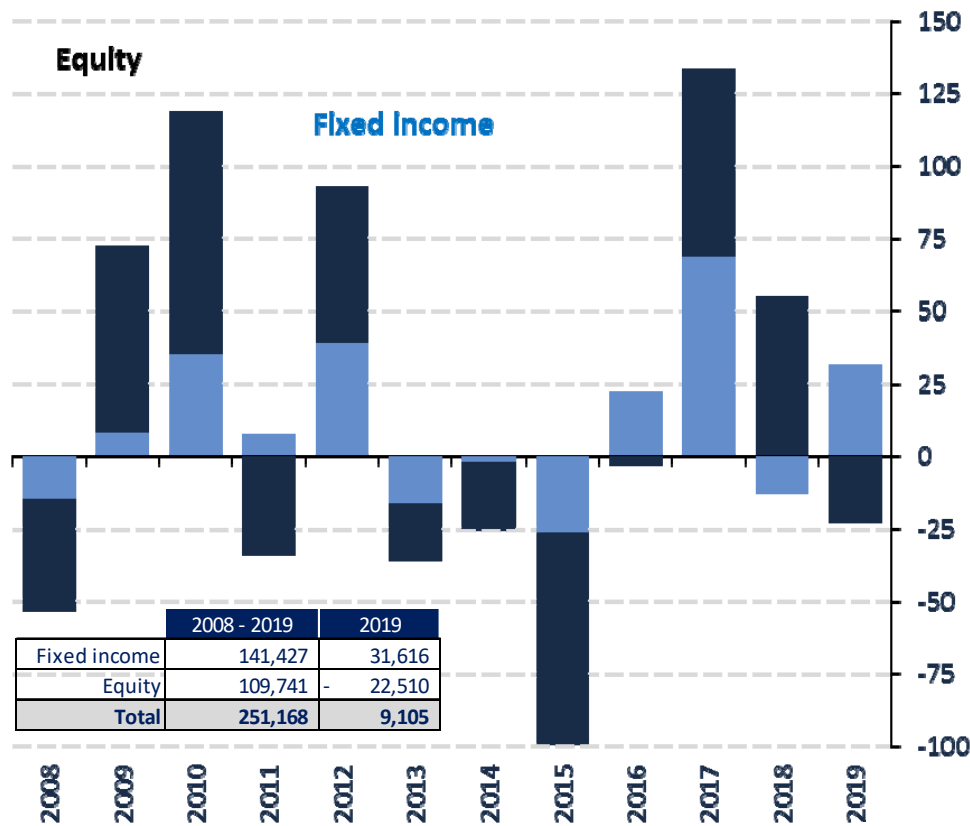


Source: Bloomberg.

2 Significant portfolio recomposition

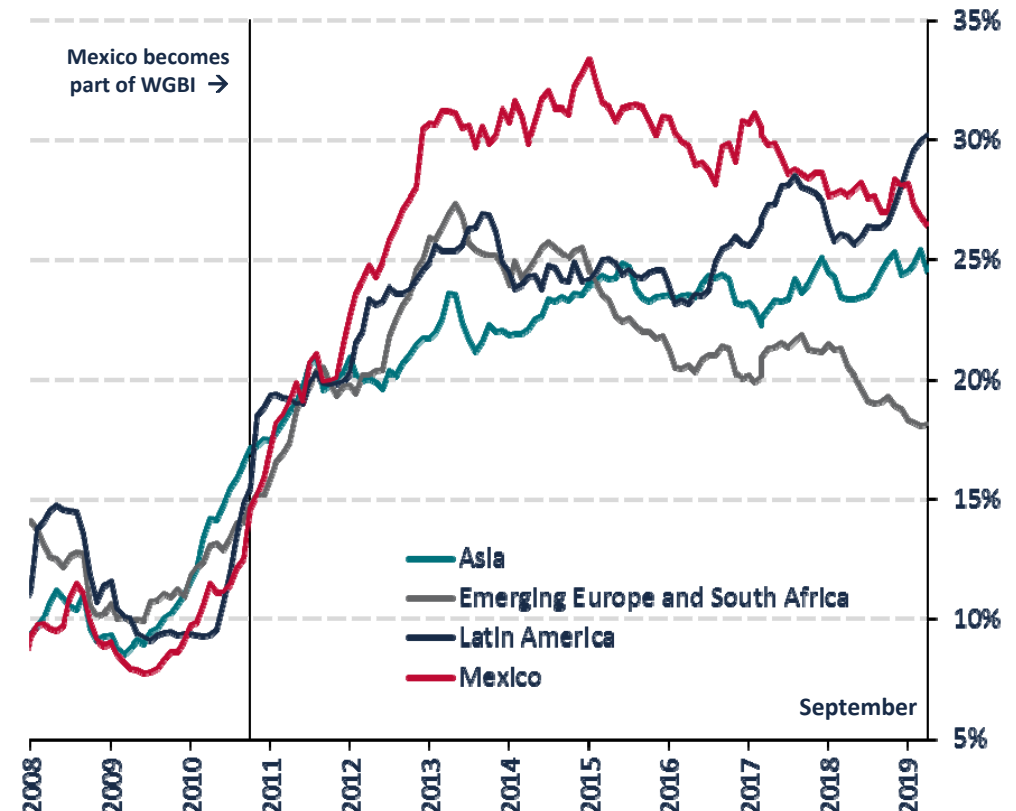
As a result of the search for higher returns, the participation of non-resident investors in EMs assets increased.

Equity and Fixed Income Flows
Dedicated to Emerging Economies
Billions of dollars



Source: Banco de Mexico with EPFR data.

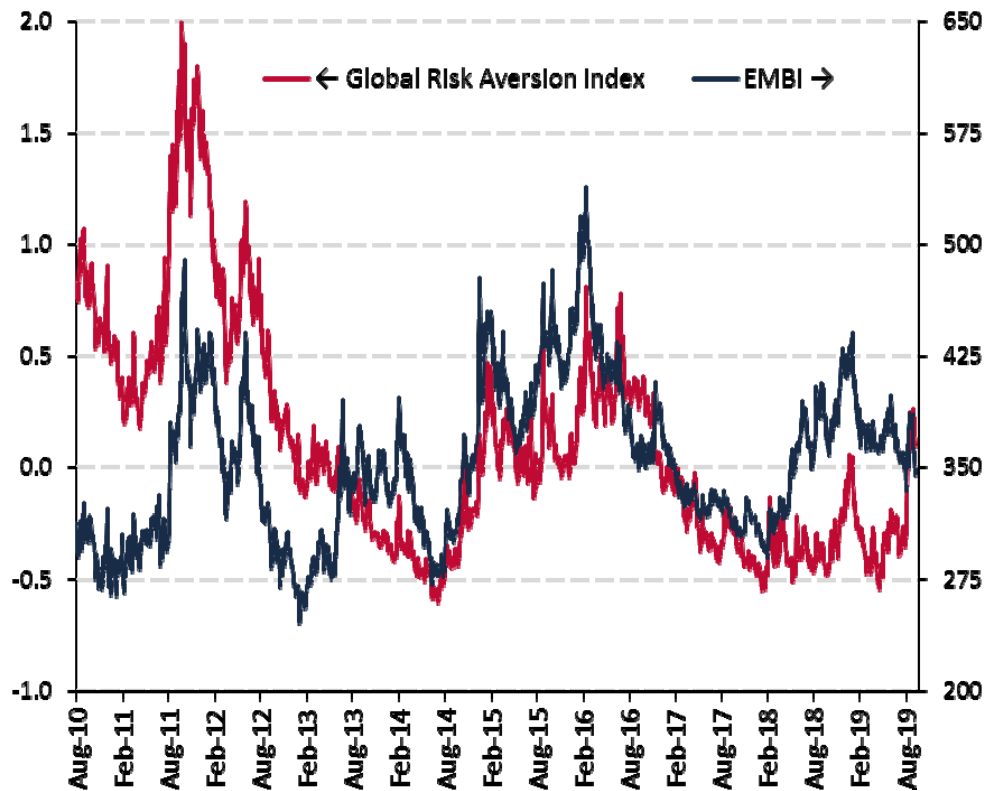
Non-residents' Holdings of Government
Bonds in Local Currency
As % of total outstanding debt



Note: Average by region of the percentage of ownership of local bonds denominated in local currency by foreigners from the following countries: Mexico, Peru, Colombia, Brazil, Indonesia, Malaysia, Thailand, Poland, Turkey, Israel, Russia, Hungary, South Africa and South Korea (enters since December 2009).
Source: Finance ministries, central banks and other national authorities.

- 3** *EMs have been strongly influenced by changes in global risk appetite and US interest rates*
 The higher participation of international investors in emerging countries' assets has increased their correlation, in particular, in episodes of high volatility.

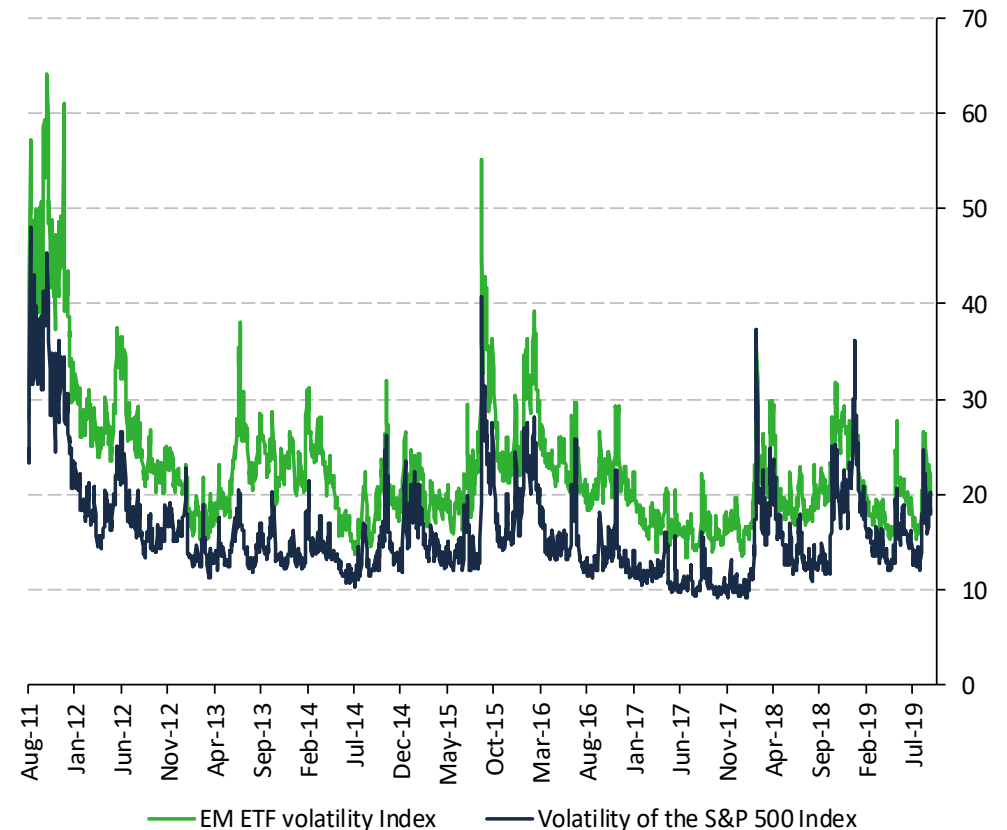
Global Risk Aversion Index and EMBI
 Index and basis points



The Citigroup Global Risk Aversion Index measures risk aversion across asset classes. It is an equally weighted index of developed and emerging market sovereign spreads, US credit spreads, TED spread and implied FX, equity and swap volatility. The index is shown as standard deviations from the mean.

Source: Central Bank of Mexico with Citi and Bloomberg data.

Emerging Markets Volatility and VIX Index
 Index



Note: The EM ETF volatility is the implied volatility of the EM ETF, the iShares MSCI Emerging Markets Index.
 Source: Central Bank of Mexico with Citi and Bloomberg data.

Outline

1 Greater Integration of EMs with Global Financial Markets

2 Recent Trends in Global Financial Markets and Spillovers to EMs

3 Managing Global Spillovers: The Case of Mexico

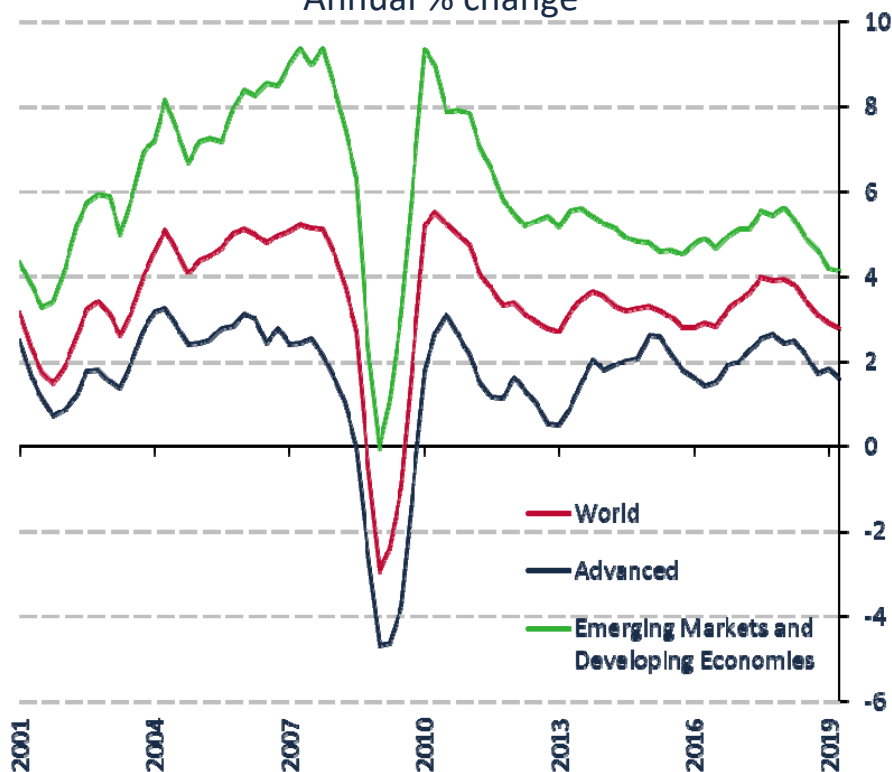
1

Lower global growth

Trade tensions have become a significant obstacle to global economic growth, with significant effects on manufacturing production, investment and business confidence.

World GDP growth

Annual % change

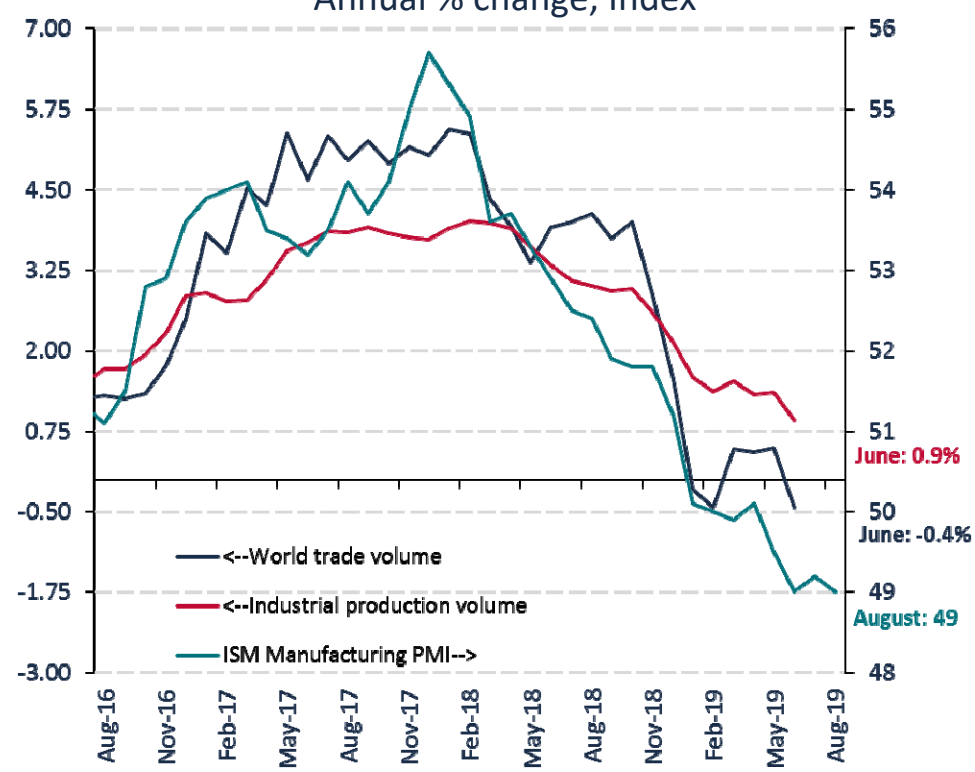


Note: The calculations were used for the calculation of the second quarter. The sample of countries calculated for the calculation represents 85.6% of the world GDP measured by purchasing power parity.

Source: Central Bank of Mexico with Haver Analytics, JP Morgan and International Monetary Fund.

Global activity indicators

Annual % change, Index



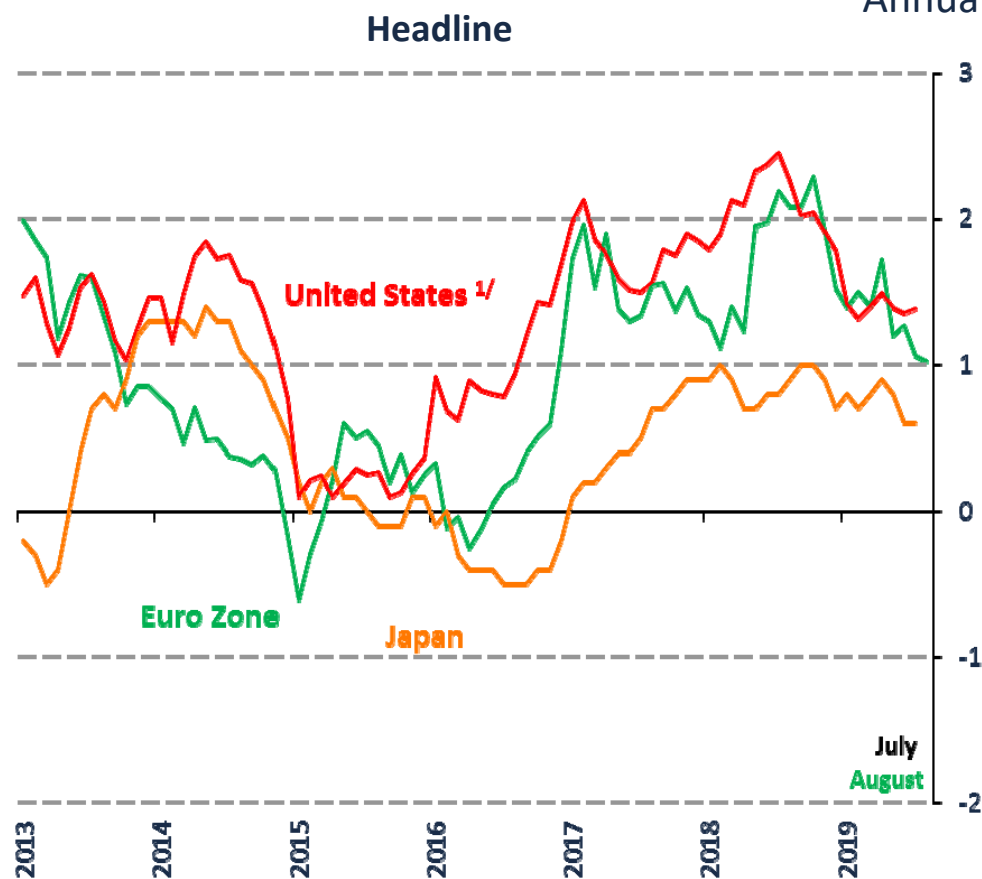
Note: Annual change is calculated to the 3 month moving average of the world trade volume index and the industrial production volume index, both base 2010. ISM Manufacturing PMI is based on the report on business new orders SA.

Source: CPB Netherlands, Bloomberg.

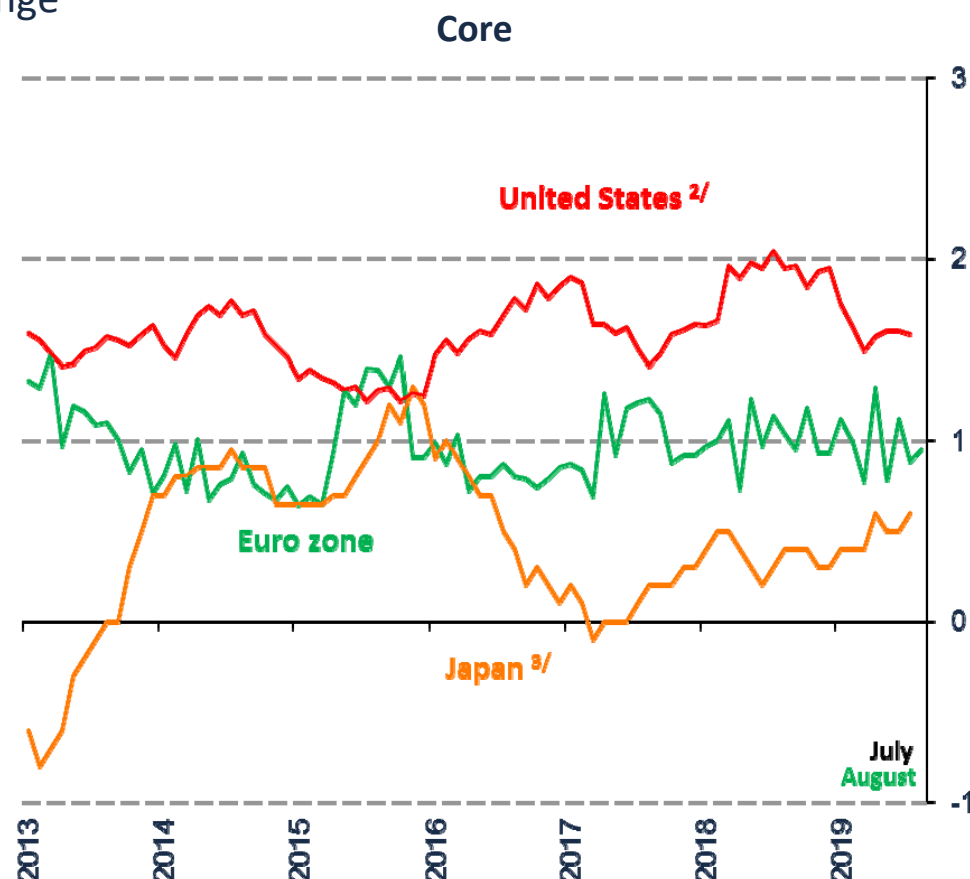
2 Lower inflationary pressures

With a softer outlook for growth, pressures have diminished for both headline CPI and core inflation.

Consumer Price Index
Annual % change



1/ Refers to Personal Consumption Expenditure Deflator (PCE).
Source: Haver Analytics, BEA, Eurostat and Statistics Bureau.

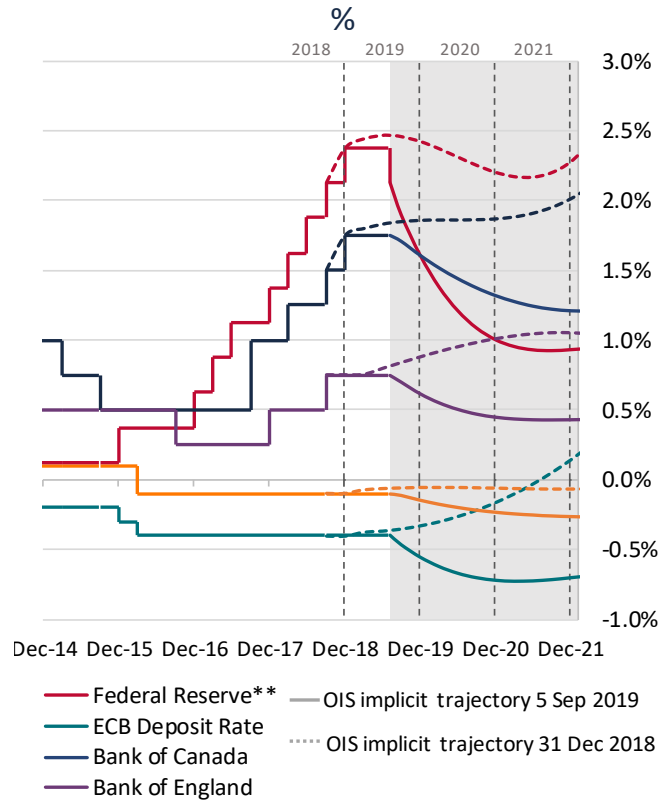


2/ Refers to Personal Consumption Expenditure Deflator, excluding food and energy (PCE).
3/ Excluding fresh food, energy and the direct effect of an increase in consumption tax.
Source: Haver Analytics.

3 *Trend towards lower interest rates in AEs*

With a weaker global economy and in the absence of inflationary pressures, markets have anticipated lower interest rates across the yield curve.

Reference Rate and OIS Implied Trajectory



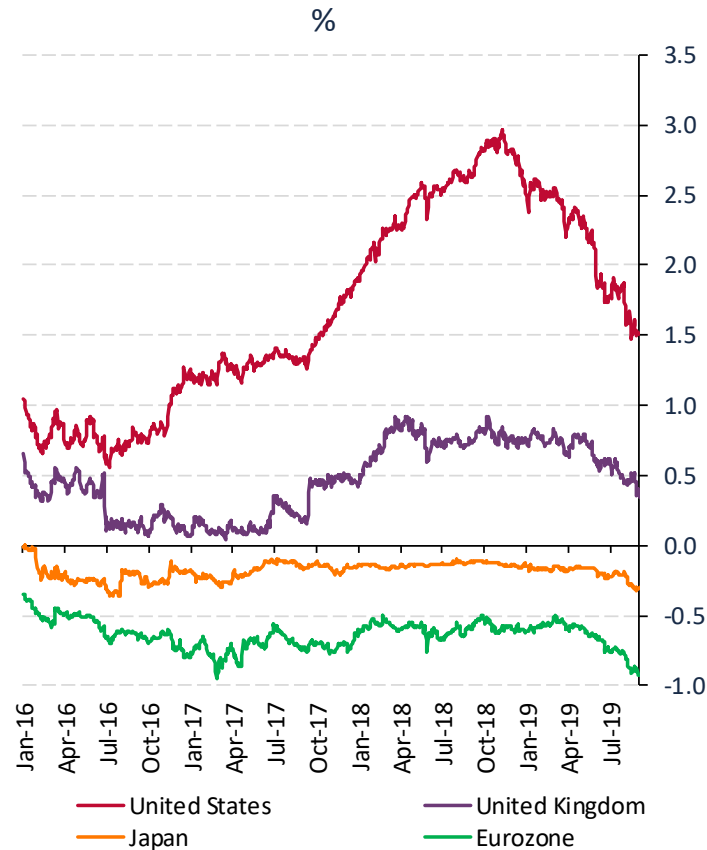
Note: OIS is defined as the interest rate swap where the fixed rate is the effective one day rate.

**/ For the Federal Reserve, we use the federal funds rate midpoint of range (2.00%-2.25%)

Source: Banco de Mexico with Bloomberg data.

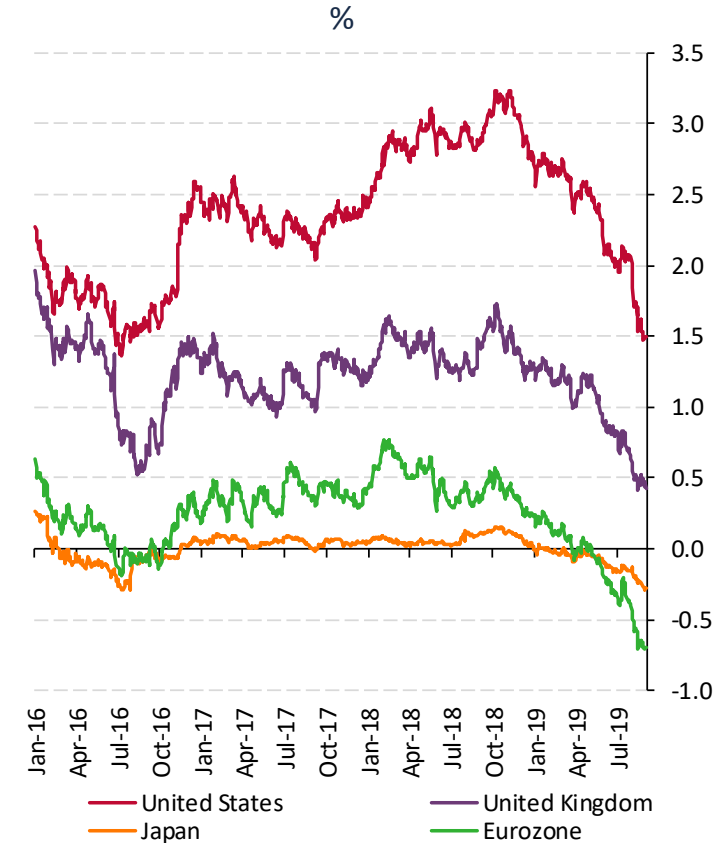
Advanced Economies

2-year Sovereign Bond Yields



Source: Bloomberg

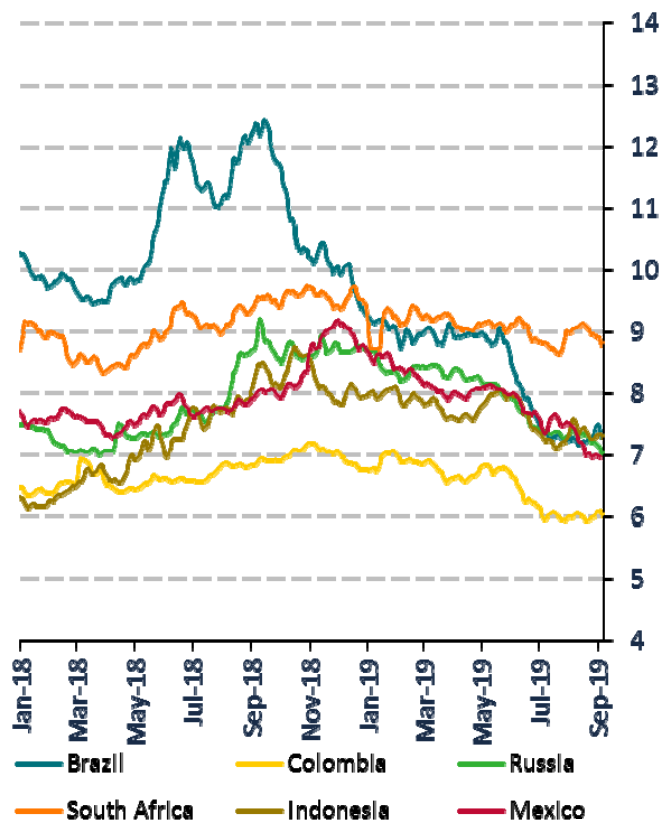
10-year Sovereign Bond Yields



Source: Bloomberg

4 *Short and long-term interest rates in EMs have decreased, following the trend in AEs*
 EMs fixed income markets have attracted capital inflows leading to a reduction in interest rates.

10-year Sovereign Bond Yields of Selected Economies
 %, 5-day moving average



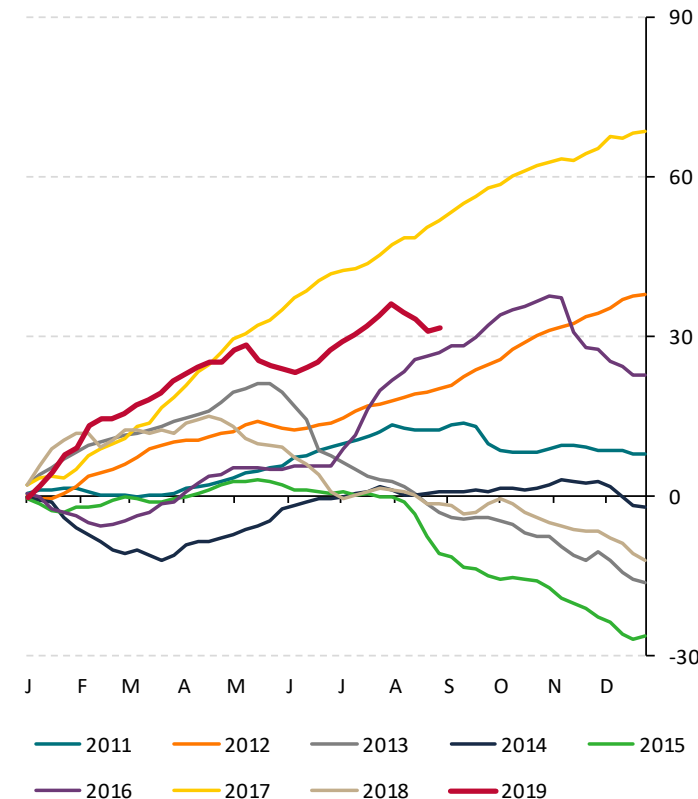
Source: Bloomberg.

World Government Bond Index (WGBI) and 10 Year US Treasury
 Index value in US dollars, %



Source: Citivelocity and Bloomberg.

Accumulated Fixed Income Flows to Emerging Markets
 Billions of US dollars

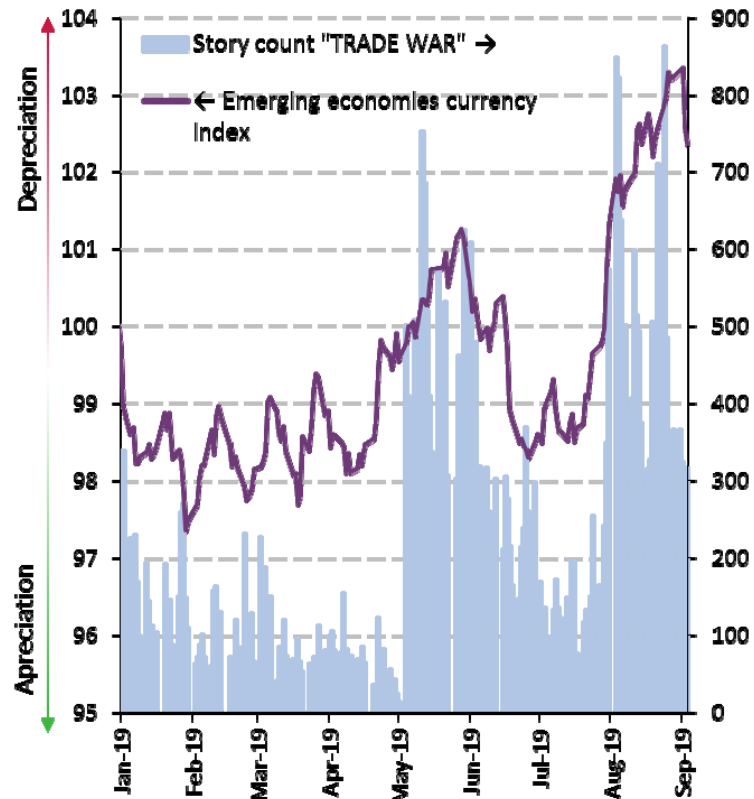


Source: EPFR.

5 *Uncertainty and volatility in global financial markets have had spillover effects on EMs*

Periods of acute uncertainty and trade tensions have induced flight to quality episodes.

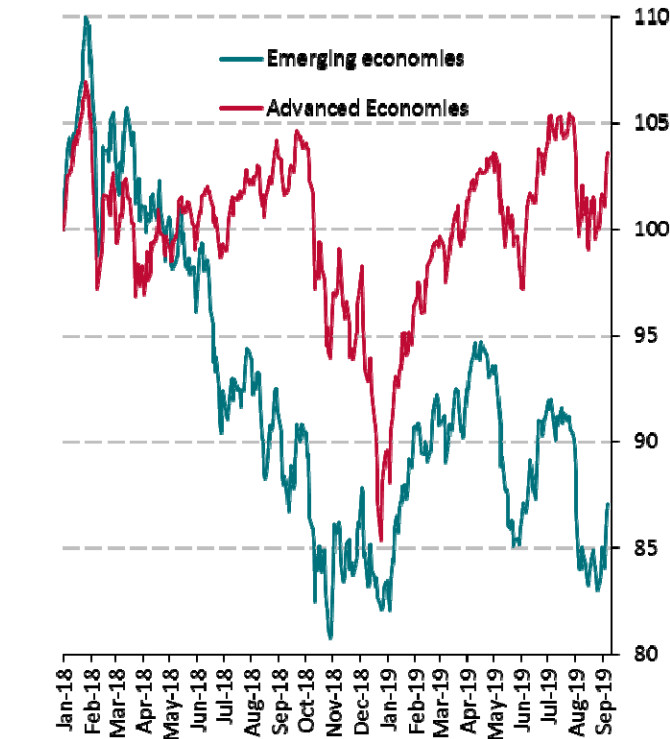
Story Count for “TRADE WAR” and
Emerging Economies Currency Index
Index, Number of news



Note: The emerging economies currency index includes Peru, Philippines, Poland, Hungary, South Korea, South Africa, Russia, Brazil, Colombia, Chile, Malaysia, Czech Republic, India and Mexico.

Source: Central Bank of Mexico with Bloomberg data.

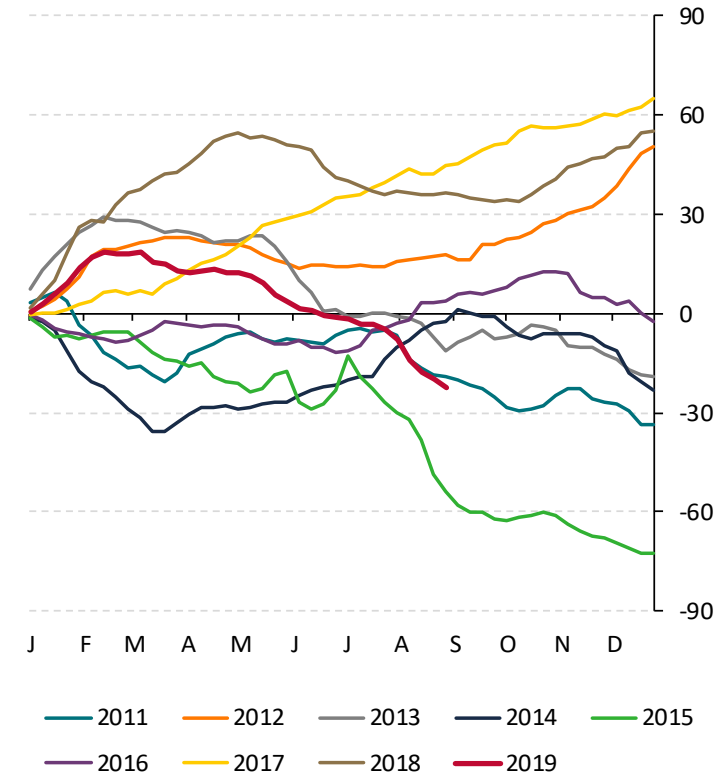
Equity Markets in Advanced and
Emerging Economies
Index Jan 2, 2018=100



Note: The graph presents the MSCI indices of developed and emerging economies (MSCI World Index and MSCI Emerging Market Index). The MSCI of emerging economies includes Mexico, Brazil, Chile, China, Colombia, Peru, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, South Korea, Malaysia, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates. The MSCI of developed economies includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Holland, New Zealand, Norway, Portugal, Singapore, Sweden, Switzerland, United Kingdom United and United States.

Source: Bloomberg

Accumulated Equity Flows to
Emerging Markets
Billions of US dollars

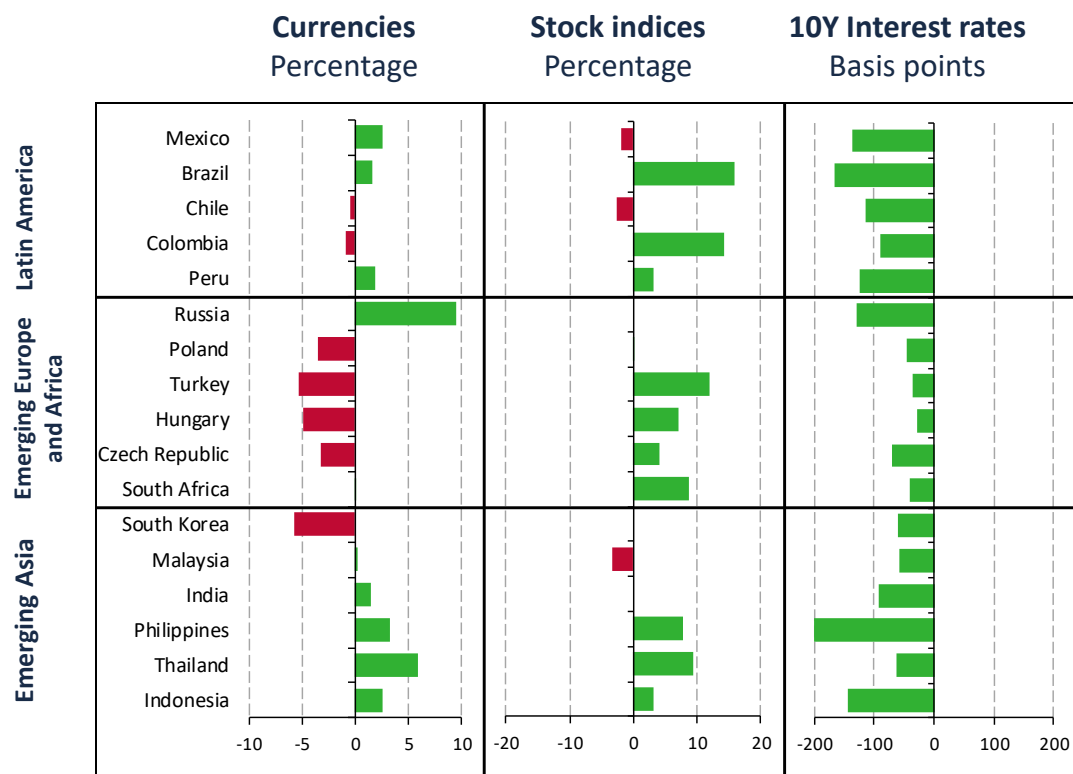


Source: EPFR.

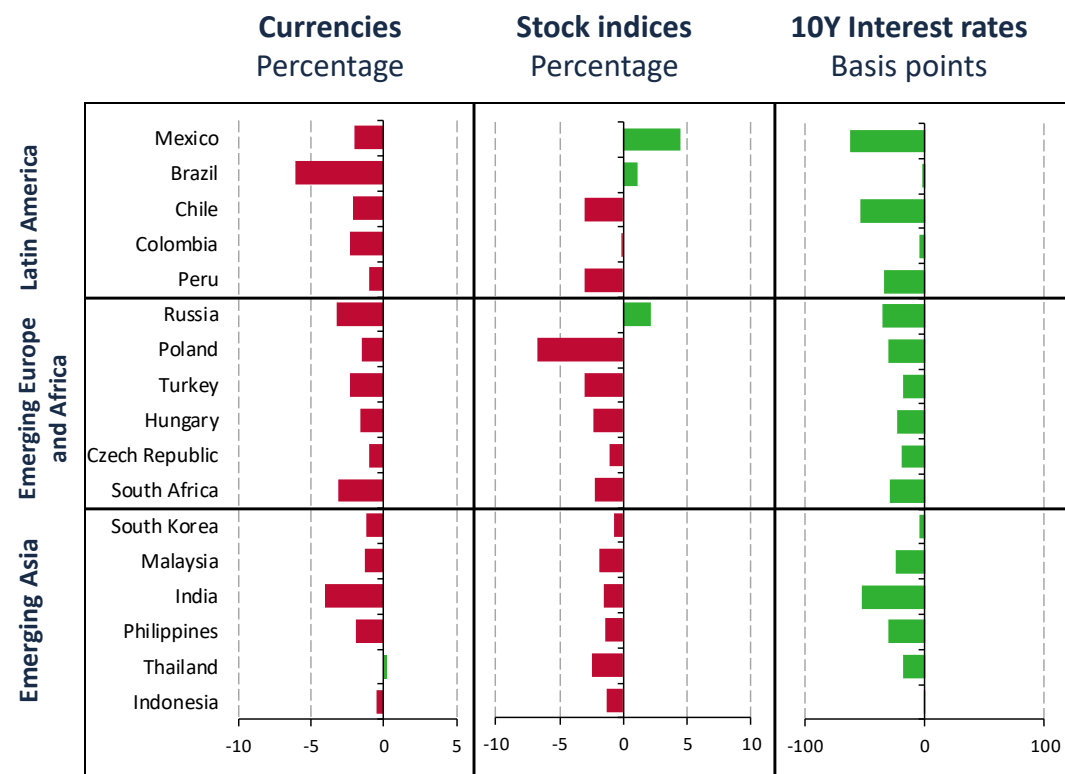
6 Global risk appetite has had a strong influence on EMs financial markets

Even though an underlying trend of lower global interest rates has been present, trade tensions and volatility episodes have affected EMs.

Performance from Jan 1st, 2019 to Jul 31th, 2019



Performance from Aug 1st, 2019 to Sep 6th, 2019



Note: Interest rates correspond to swap rates for a term of 2 and 10 years, respectively. Only the cases of Argentina and Peru use the rates of government bonds of 3 and 10 years.

Source: Bloomberg.

Outline

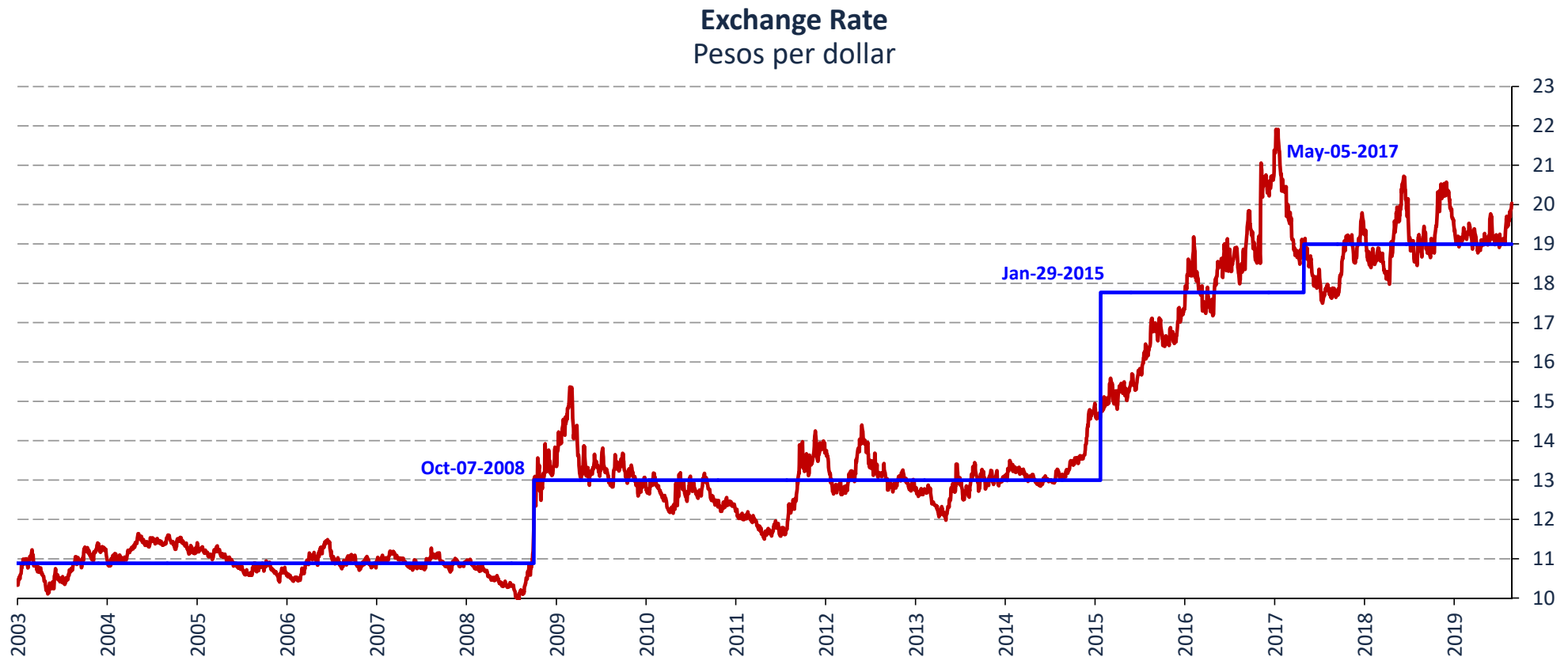
1 Greater Integration of EMs with Global Financial Markets

2 Recent Trends in Global Financial Markets and Spillovers to EMs

3 Managing Global Spillovers: The Case of Mexico

1 *The Mexican economy has faced a sequence of adverse shocks since mid-2014 that required a real exchange rate adjustment*

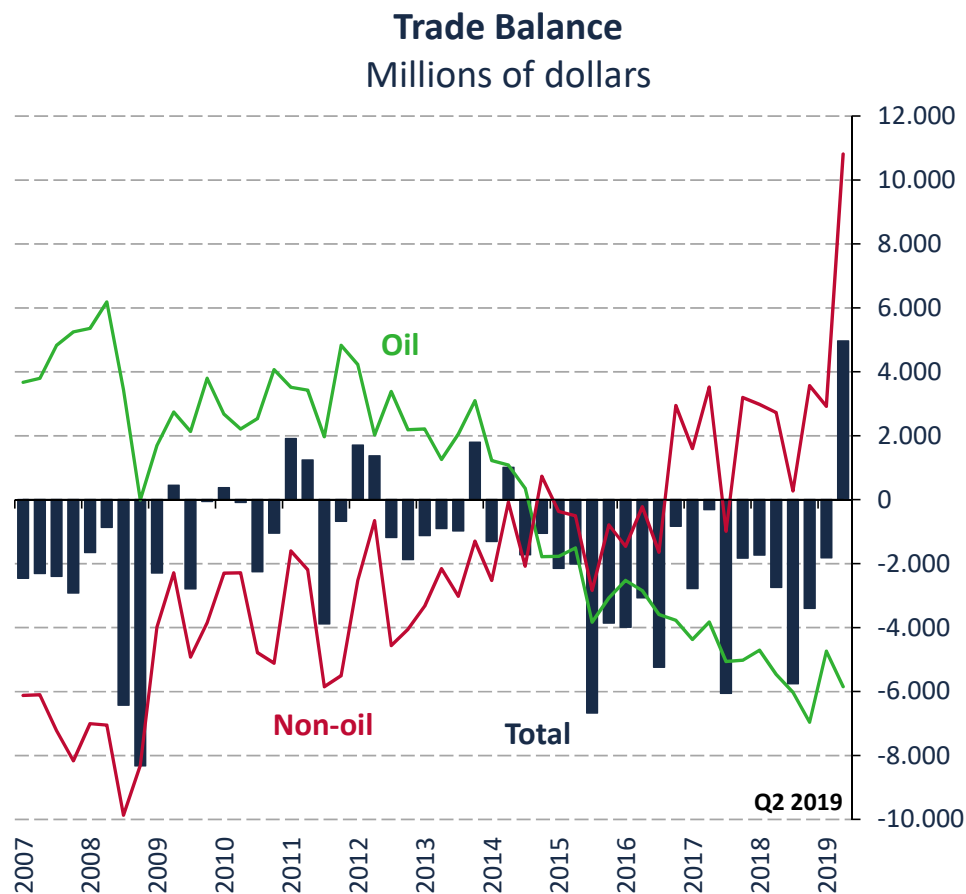
A reduction of external sources of finance has required a lower current account deficit. This process has also faced a recomposition of the external accounts.



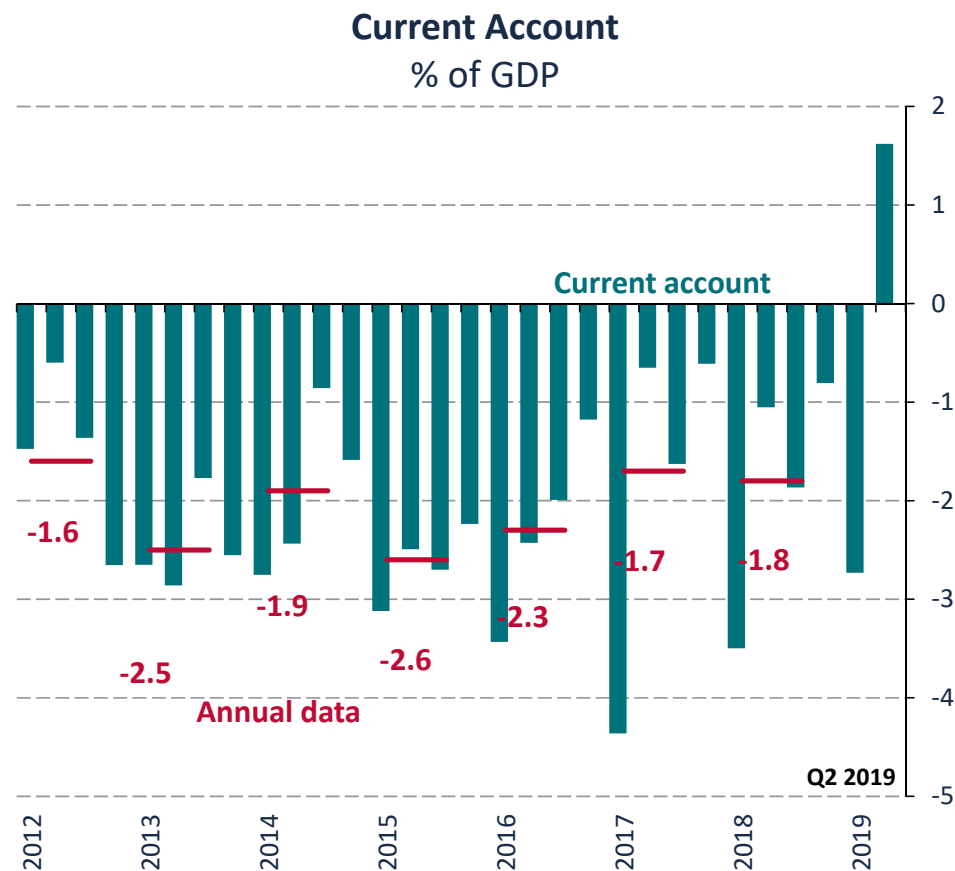
Note: The null hypothesis for the structural change test is that the average exchange rate is the same before and after the structural change. The test concludes that there are five structural breaks on the dates indicated in the figure at the 5% significance level. The associated F statistic is 307.78 with a critical value of 12.97. The model is estimated with information from January 1, 1997 to August 28, 2019. Prepared with information from Banco de México.

2 *Recomposition of external accounts*

The trade balance has reversed its medium-term trends, with a recent oil-trade deficit and a non-oil trade surplus.



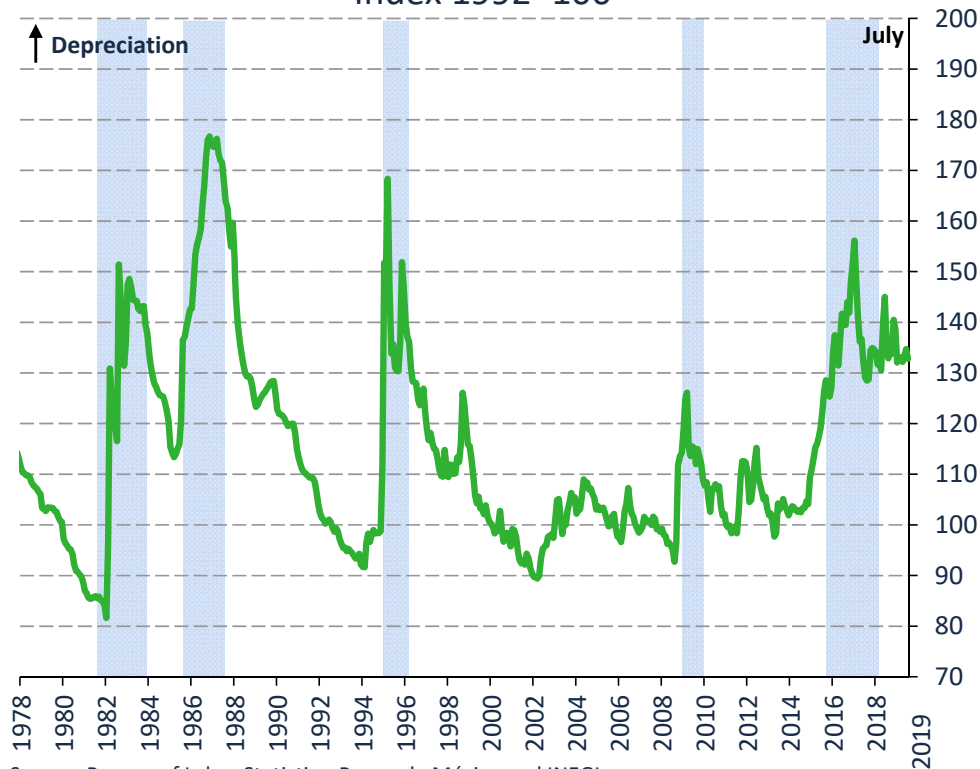
Source: SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.



Source: Banco de México and INEGI.

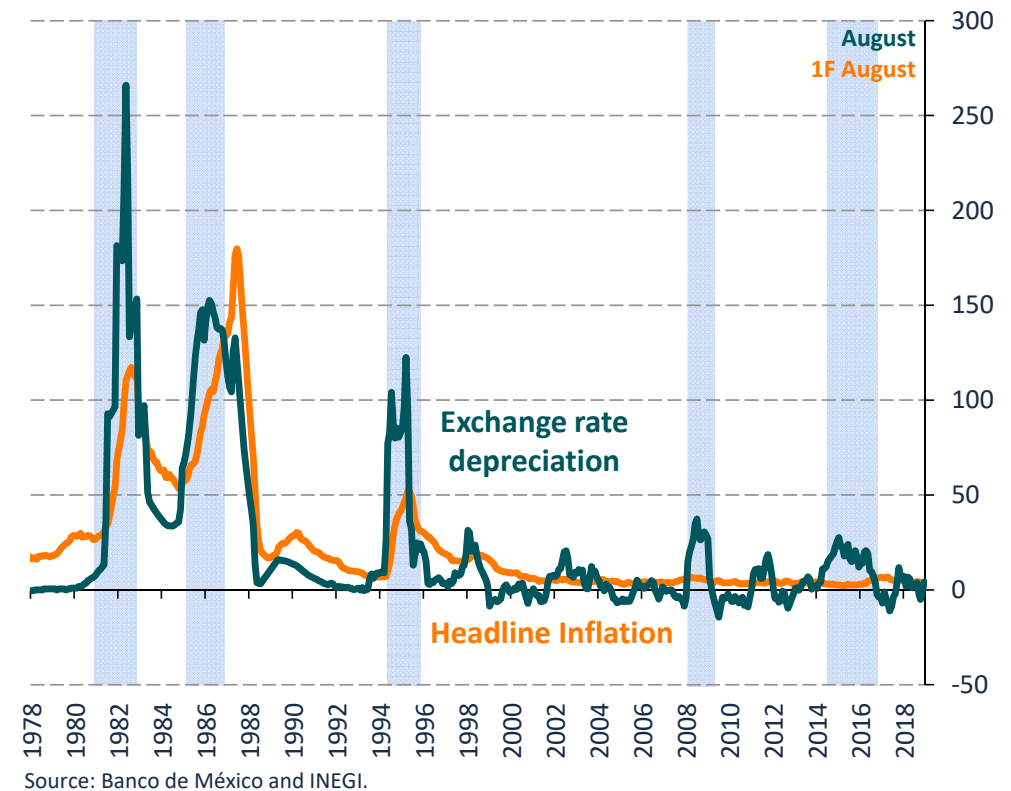
- 3 *An orderly adjustment of the real exchange rate has taken place*
In spite of the significant real exchange-rate depreciation of the last years, the pass-through of the exchange rate to prices remains at reduced levels, reflecting an improved functioning of the economy's nominal system.

Bilateral Real Exchange Rate between Mexico
and the United States
Index 1992=100



Source: Bureau of Labor Statistics, Banco de México and INEGI.

General Inflation and Nominal Depreciation Rate
Annual % change



Source: Banco de México and INEGI.

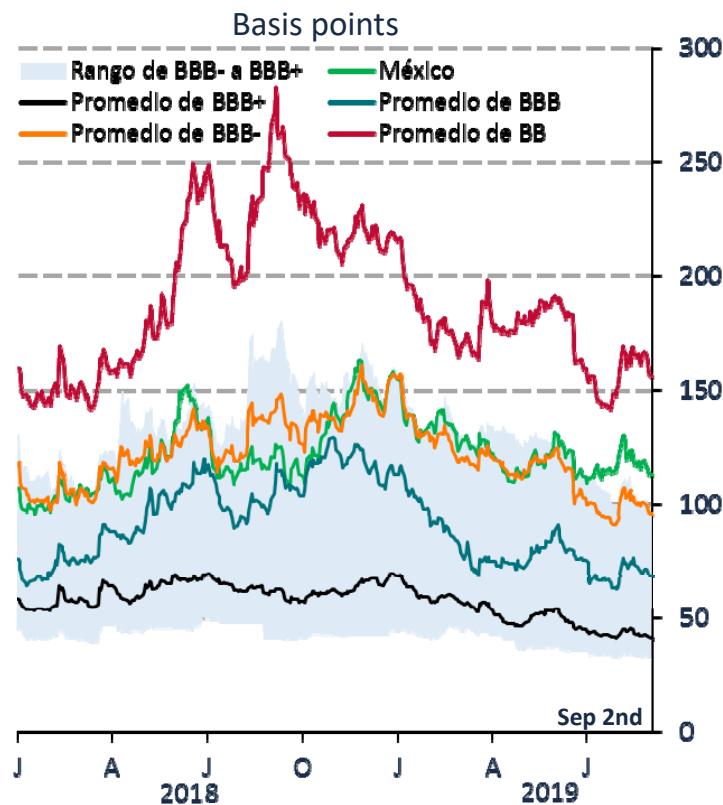
4 Mexican financial markets have been affected by external and domestic risk factors

The exchange rate and the credit default swap (CDS) have traded with a premium.

Dollar-Peso Exchange Rate
and Synthetic Peso
Pesos per dollar

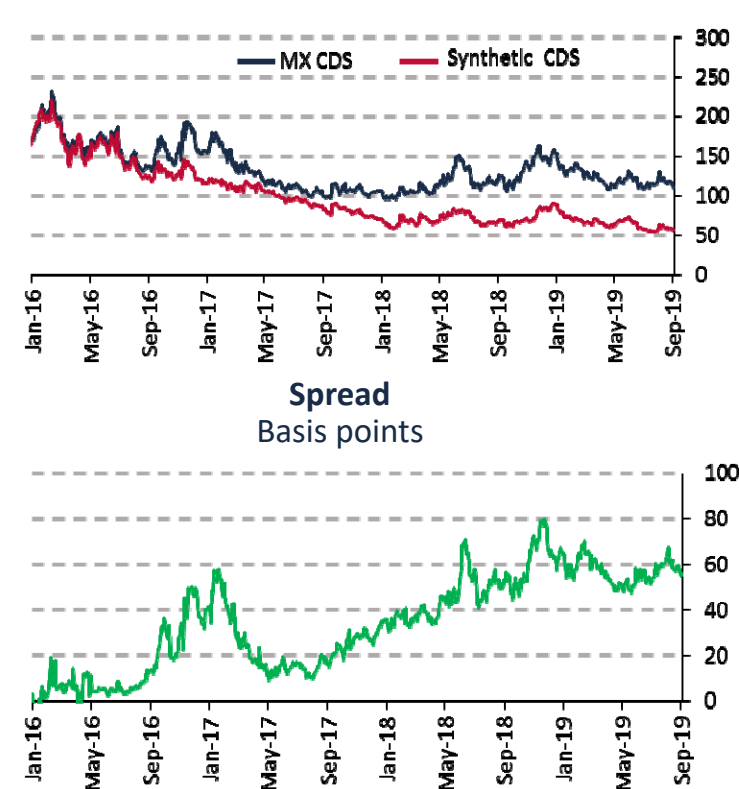


Cost of Hedging Sovereign Credit Risk Measured
by the CDS of Debt Issued in USD by Mexico and
Other Countries Rated BB and BBB^{1/}



1/ EME countries considered in the BBB+ range: Peru and Thailand. EME countries considered in the BBB range: Philippines and Indonesia. EME countries considered in the BBB- range: Russia and Colombia. Countries considered in the BB range: Brazil and South Africa. The average is equally weighted and is computed using the CDS of countries with the same sovereign credit rating. The minimum corresponds to the minimum credit rating assigned by the three major credit rating companies (S&P, Moody's and Fitch). Source: Bloomberg.

Mexico CDS vs CDS from a Basket of
Emerging Countries^{2/}
Basis points



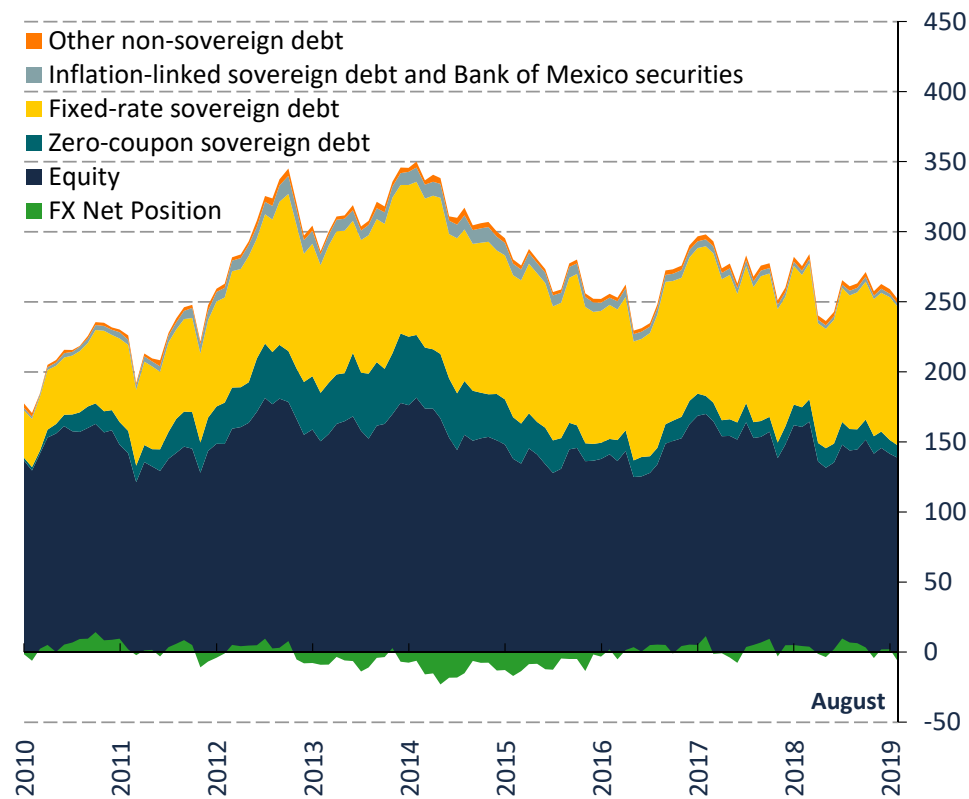
Note: 2/ The CDS basket was constructed using an average of the five-year CDS daily data from Brazil, Colombia, South Korea, Turkey, Chile, Russia and South Africa. Sources: Bank of Mexico with data from Bloomberg.

5

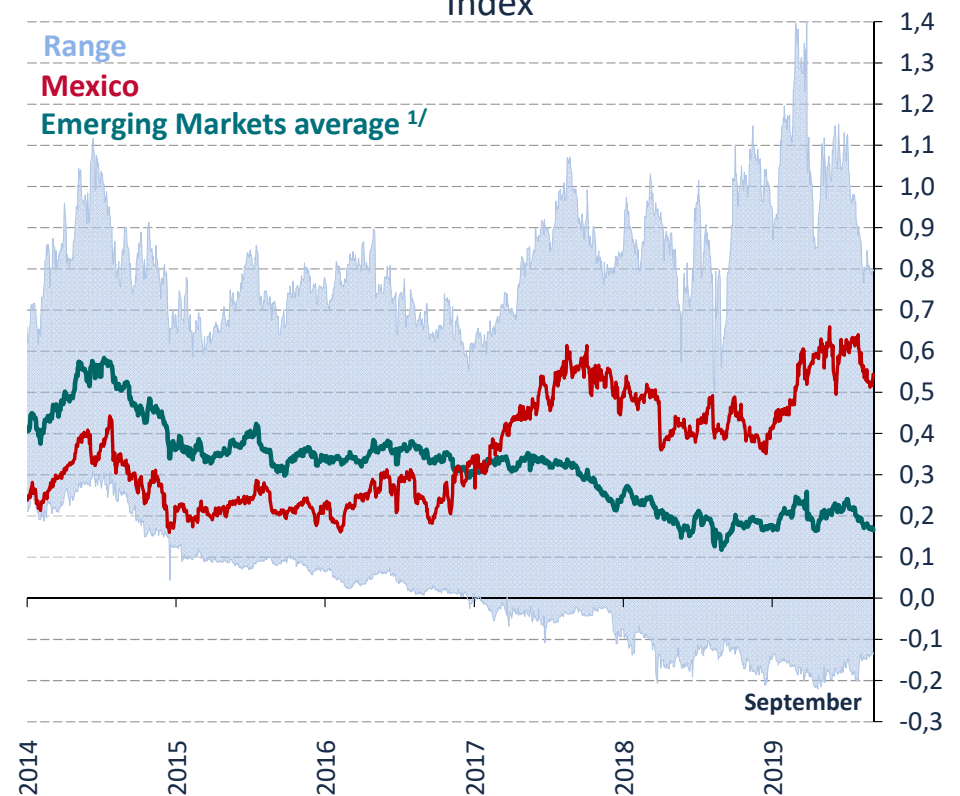
Macroeconomic policies need to consider global and local risk factors

Given the degree of openness of the capital account in Mexico, the country needs to remain an attractive investment destination.

Foreign Investors' Position in Securities
Denominated in Mexican Pesos
Billions of dollars

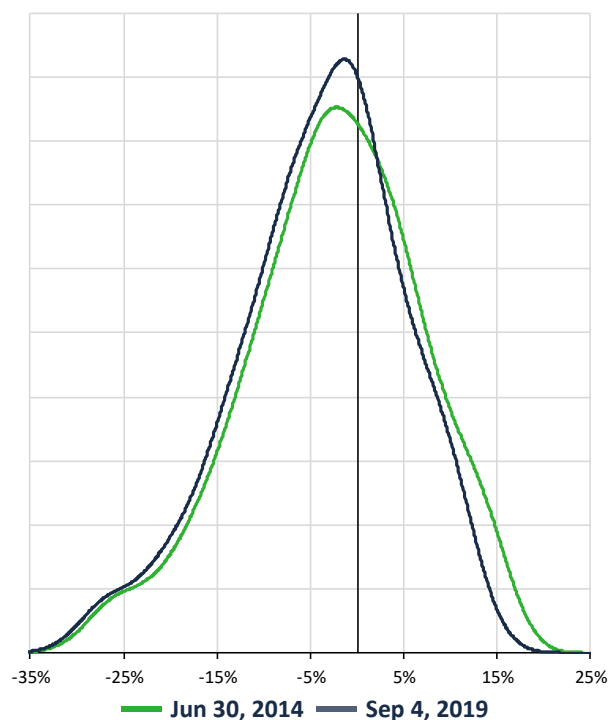


Carry to Risk
Spread between Emerging Markets Interest Rates and
United States Interest Rates Adjusted by Volatility
(3 months)
Index



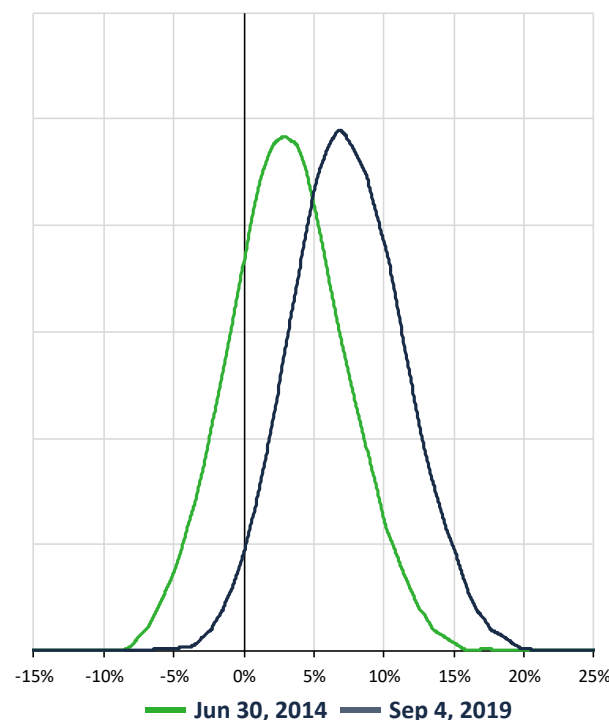
6 Distribution of Returns of Mexican Assets

One-year Ahead Implied^{1/} Distribution of Mexican Peso Annual Returns
Density



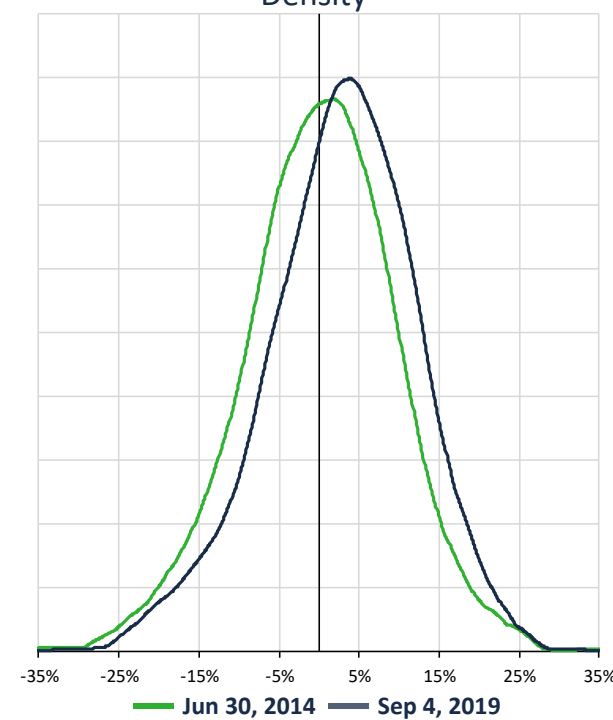
	Mean	Volatility	CVaR
Jun 30, 2014	-2.6%	9.7%	24.5%
Sep 04, 2019	-4.0%	9.2%	25.3%

One-year Ahead Implied^{1/} Distribution of Mexican Government Bonds Annual Returns
Density



	Mean	Volatility	CVaR
Jun 30, 2014	3.1%	4.3%	5.5%
Sep 04, 2019	7.4%	4.2%	1.0%

One-year Ahead Implied^{1/} Distribution of Mexican Government Bonds Annual Returns with FX Exposure
Density

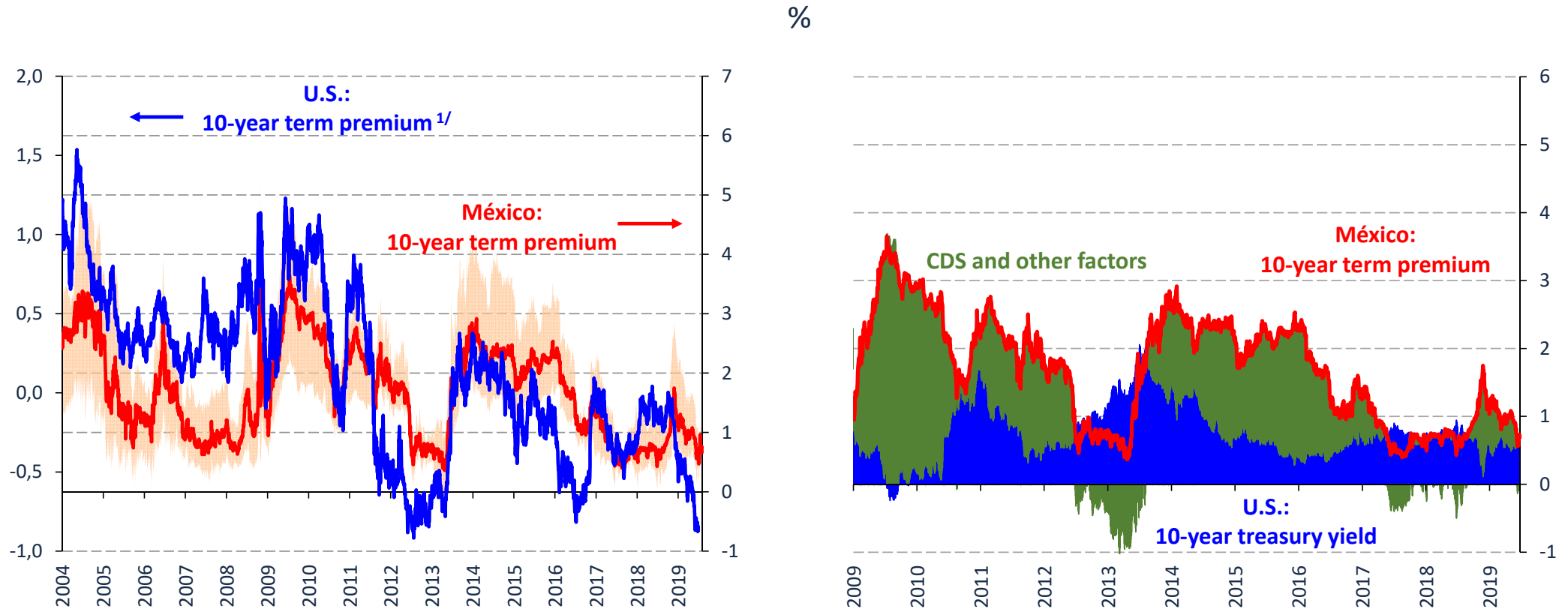


	Mean	Volatility	CVaR
Jun 30, 2014	0.0%	9.8%	21.7%
Sep 04, 2019	2.8%	9.6%	18.9%

^{1/} The implied distribution functions for FX, Fixed Income and Total Return securities are obtained using the Breeden-Litzenberger methodology, the Ho-Lee model, and a Copula model that combines the first two, respectively.
Source: Bank of Mexico with data from Bloomberg.

7 *Term premium in the 10-year peso bonds is strongly correlated with the “risk-taking” channel of US monetary policy and US interest rates.*

10-year Average Term Premium and 10-year U.S. Treasury Yield



1/ Data for U.S. term premium is estimated using Kim and Wright (2005) method with data from the FRED.

Source: Banco de México with data from Valmer, FRED and Bloomberg. See Banco de México (2019). “Evolution of the Mexican term premium”, in Box 5 of Banco de México’s Quarterly Report April - June 2019, pp. 69-73.

Conclusions, Challenges and Opportunities

- EMs are more integrated to global financial markets. This entails challenges and opportunities.
 - ✓ Open capital accounts can bring much needed resources for growth and development and promote developing financial markets.
 - ✓ Recipient economies need **strong and resilient macroeconomic fundamentals**.
 - ✓ **It is essential to bolster the resilience of the financial system to outflows**: a stable domestic financial system and sound borrower balance sheets may help reduce both the likelihood and the impact of flow reversals.
 - ✓ **Deeper financial markets** with a strong domestic investor base could help offset selling pressures from volatile global risk appetite.
 - ✓ Systemic economies' central banks have to consider spillback effects of their actions.
 - ✓ **Transparent policy processes and clearly communicated actions** can reduce the risk of market and capital flow volatility. Managing financial markets expectations has become even more critical.
 - ✓ We are facing a polarized environment in both AEs and EMs. **Short-term policies** have been adopted, putting political pressure on multilateral and domestic institutions.
 - ✓ Much needed **structural reforms and adequate long-term policies** have been absent in several of our countries, while escalating **geopolitical and trade tensions have put additional pressure on central banks' aggregate demand management responsibilities, increasing the challenges and trade-offs of monetary policy**.



BANCO DE MÉXICO

www.banxico.org.mx