Challenges and Opportunities in Recent Financial Market Developments

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International context

- Economic growth expectations remain positive and highly synchronized among countries. Recent estimates were revised upward, mainly due to the impact of US fiscal policy (Tax Reform) on developed countries…

… which means more expected inflation in coming years.

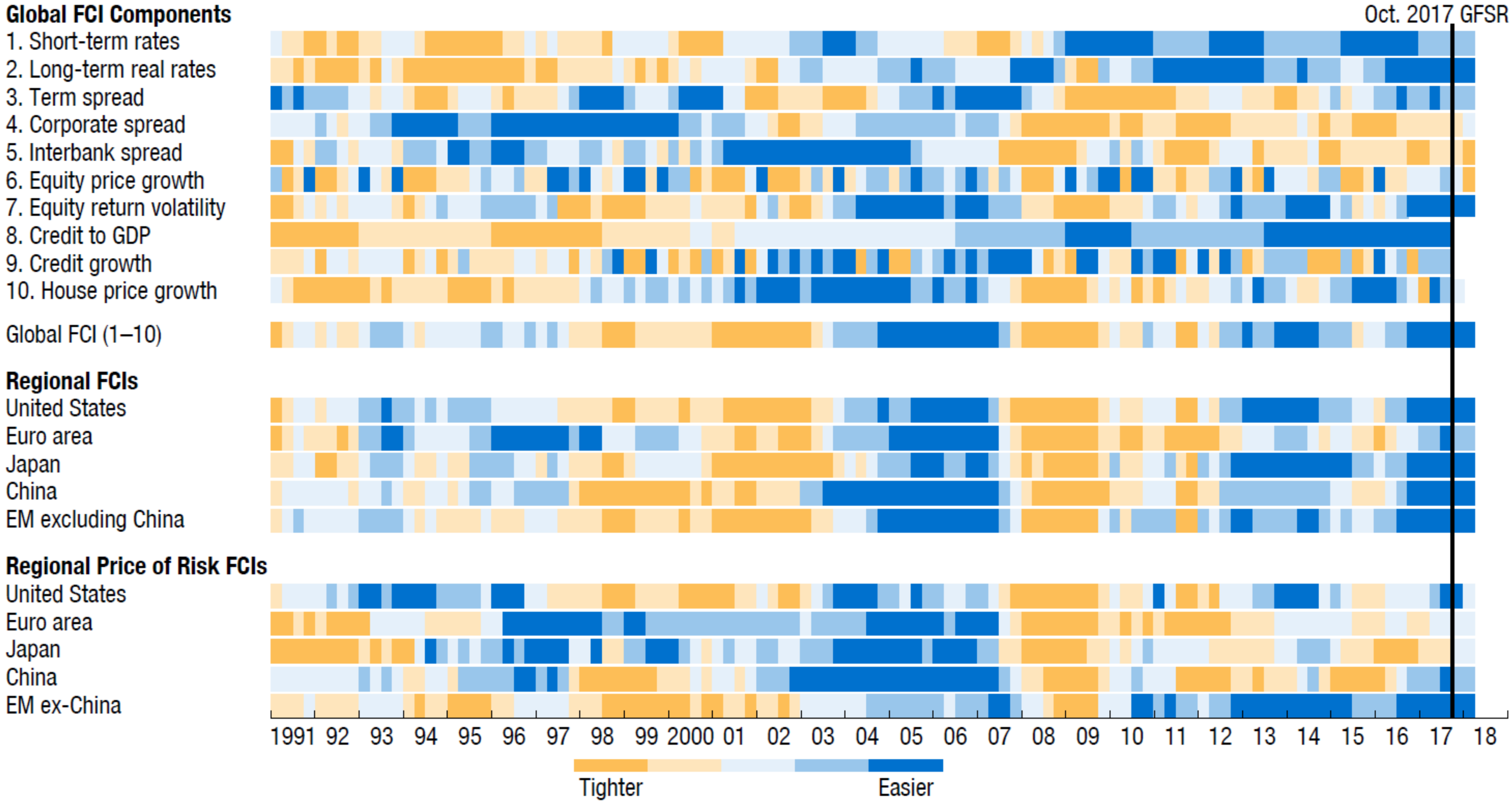
- Long-term interest rates in developed economies increased between 15 and 50 bp in the last six months…

… and the US Treasury bond yield is the one that increased the most, about 50 bp, mainly explained by its neutral rate component.

- The term premium (TP) has remained low in spite of Federal Reserve’s policy actions (*e.g*. increases of the Fed fund rate (FFR) and balance sheet reduction).
- Uncertainty about key variables such as economic growth, inflation, FFR; or changes in agents’ risk appetite for Treasury bonds, may lead to a decompression of term premia and an ensuing tightening of financial conditions in emerging economies.

Global financial conditions remain favorable

Global and regional FCIs and their components (*)



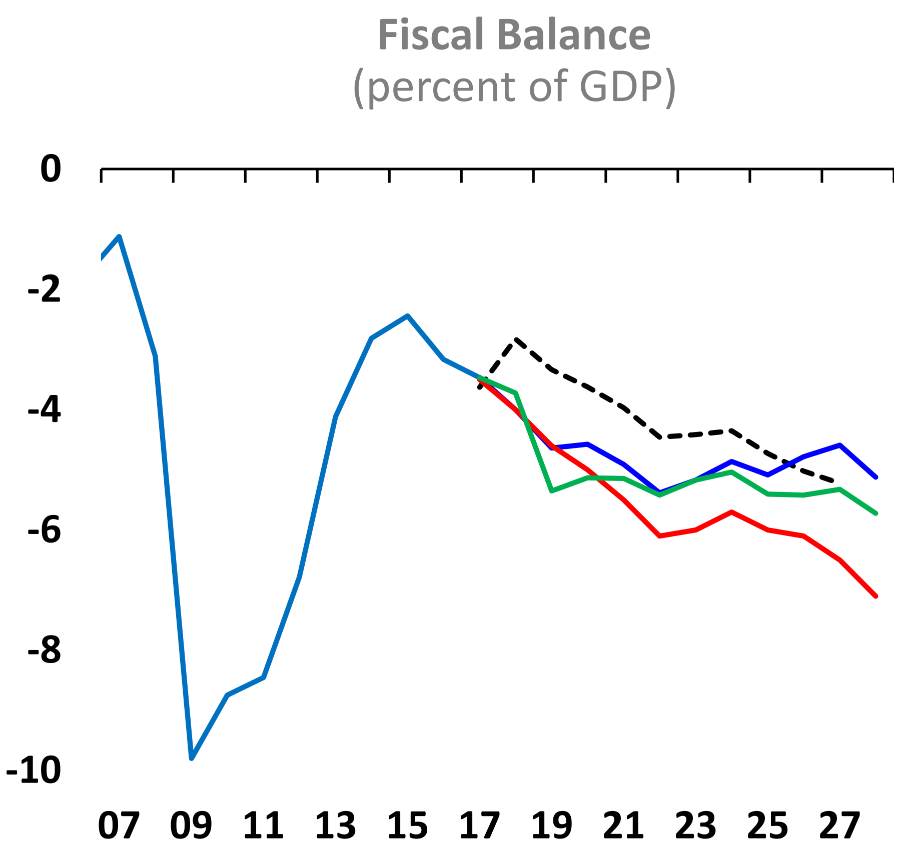
(*) Figure shows quintiles of global and regional FCI series and components relative to their own history. Results are compared with a "Price of Risk" FCI, encompassing price-based information only (components 1–7). Easing of conditions is shown in blue and tightening in yellow. For FCI components, the shading is based on their contribution to the FCI index, *e.g.*, a narrowing of credit spreads relative to historical norms would be contributing to the FCI easing, and hence, shown in blue. EM = emerging market; FCI = financial conditions index; GFSR = Global Financial Stability Report.

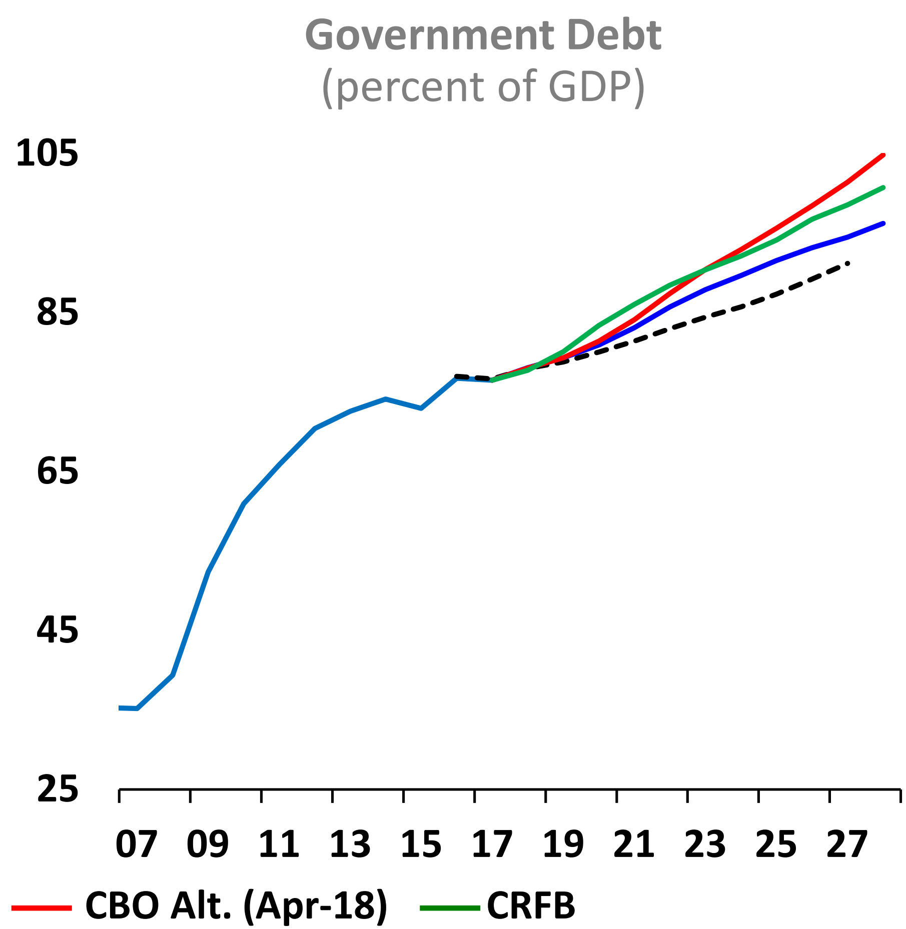
Source: IMF *Global Financial Stability Report*, April 2018.

…but new sources of risk are emerging

- Procyclical tax policy in the US and pressure on the Fed
- Renewed monetary policy divergence in advanced countries
- Exchange rate volatility
- Geopolitical risks
- Prospective tensions in the Euro Zone
- Escalation of oil prices
- Vulnerability of some emerging economies

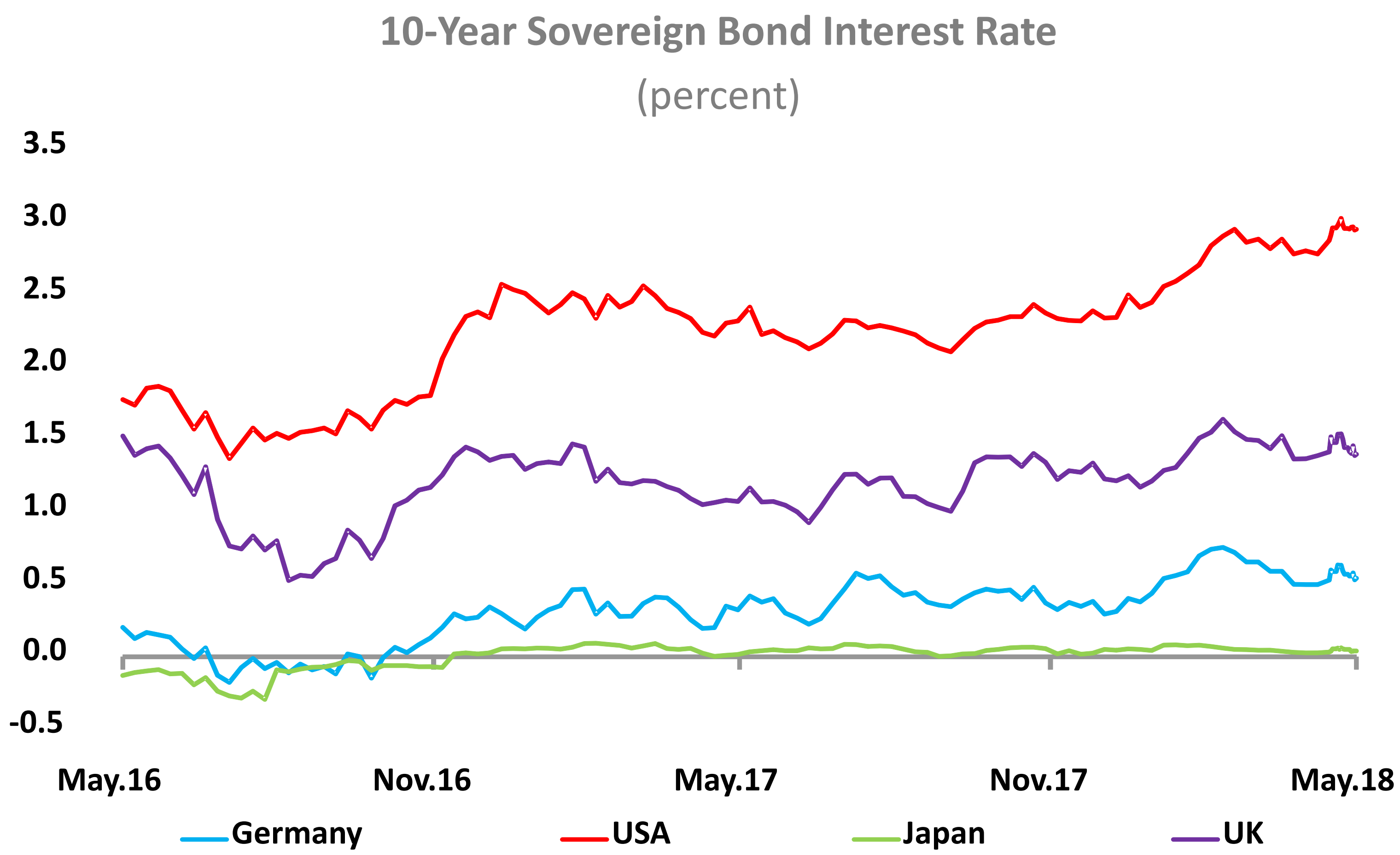
Sources of risk: US fiscal policy





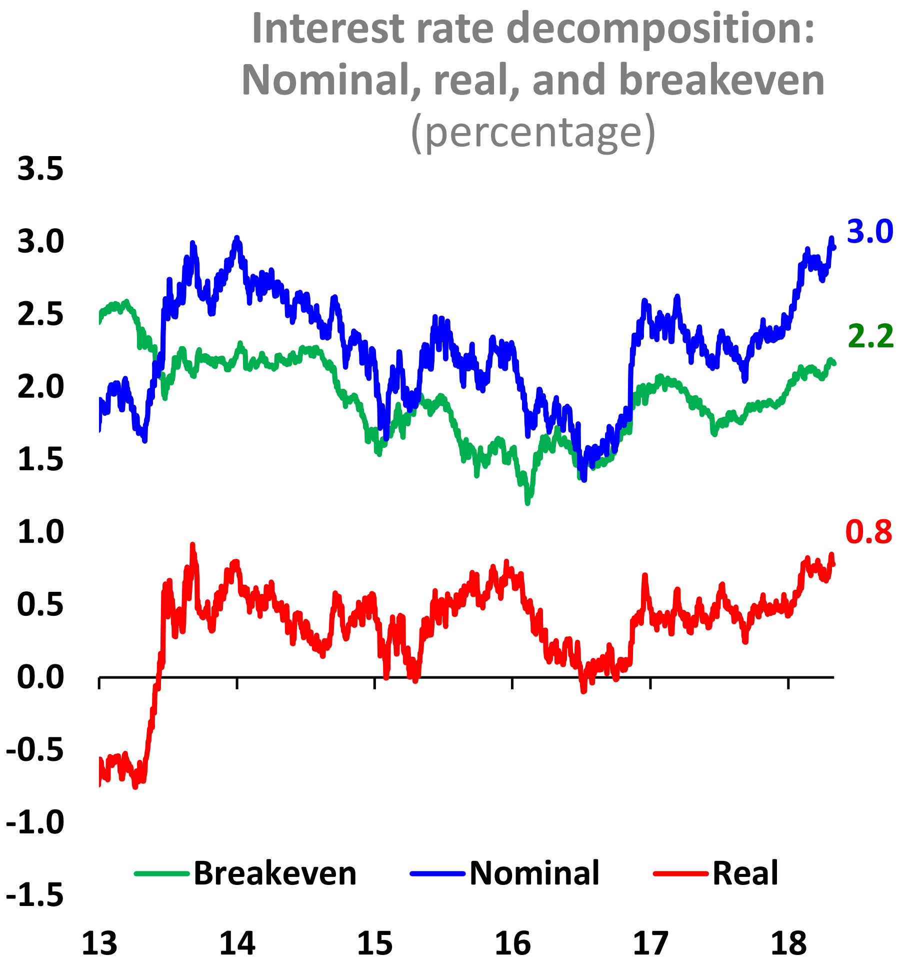
Sources: Congressional Budget Office (CBO), Committee for a Responsible Federal Budget (CRFB), and IMF.

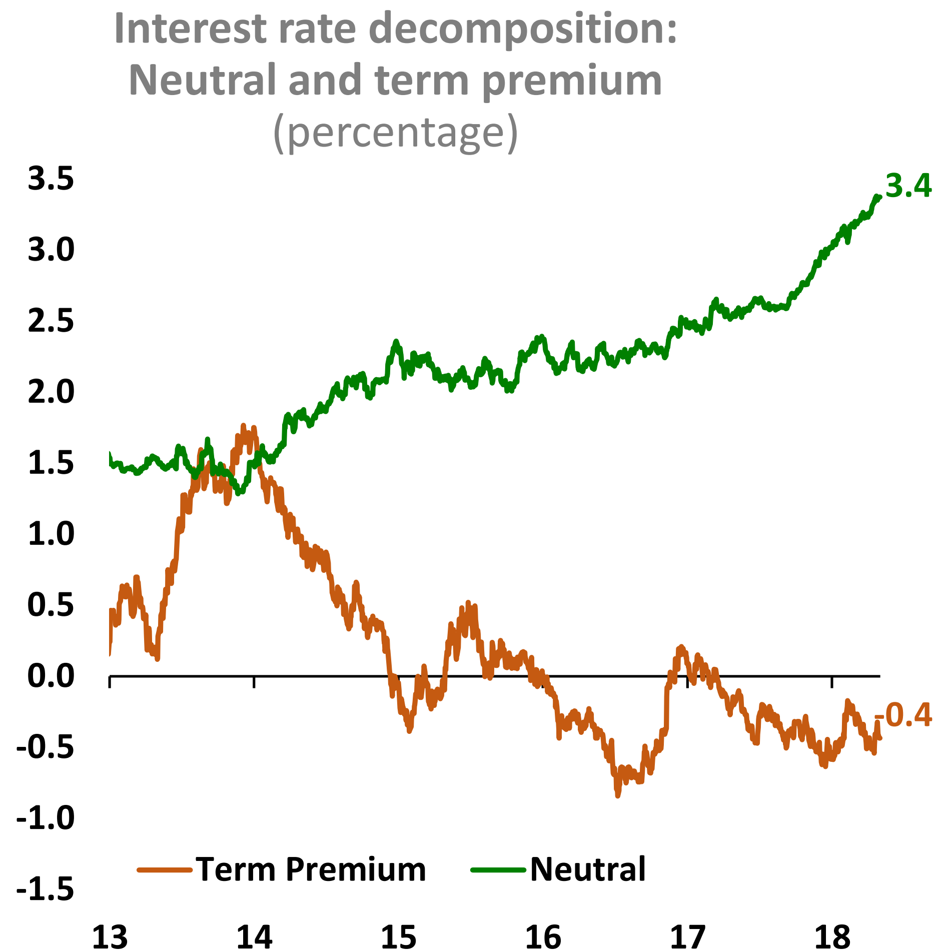
Long-term rates have been hedging up in advanced countries, especially in the US



Source: Bloomberg.

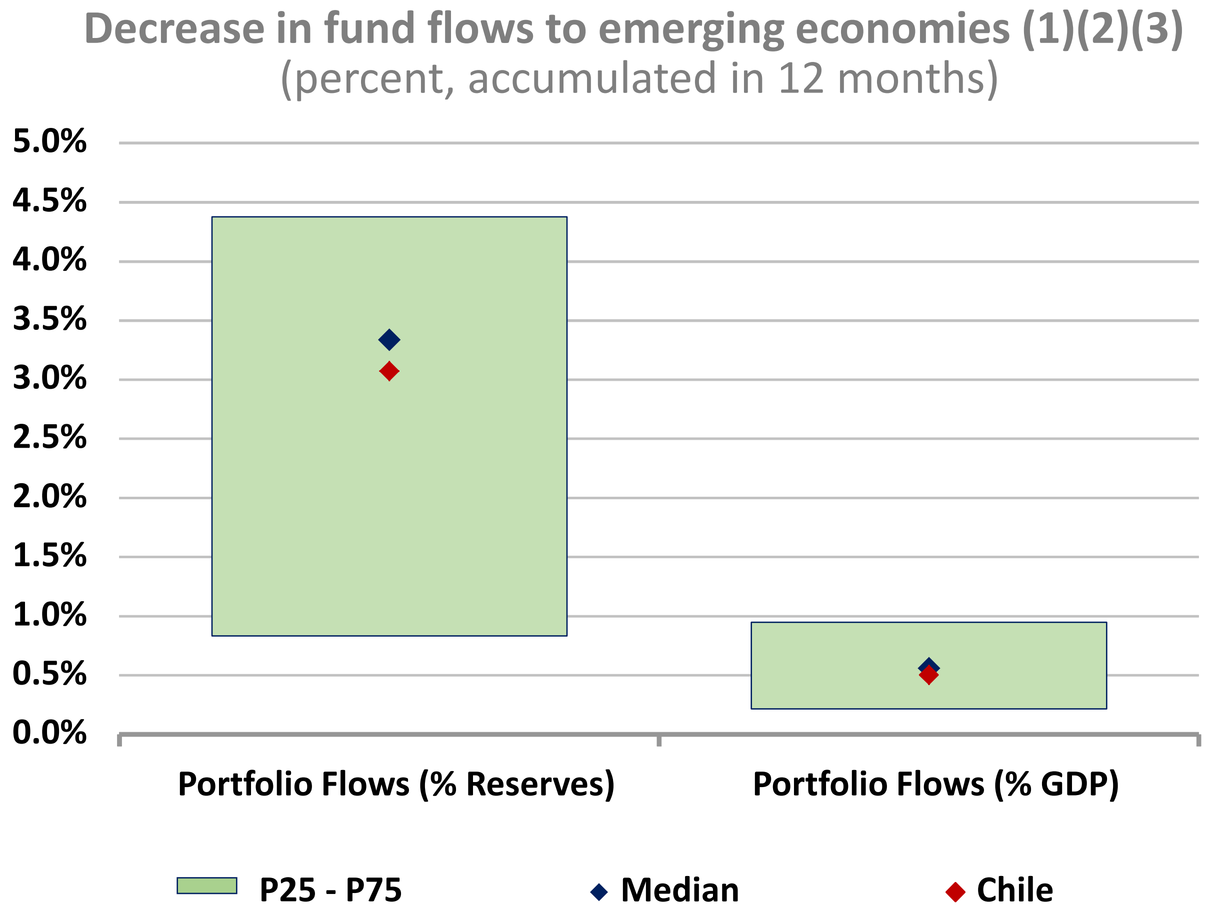
Where the upward path of monetary policy normalization has been partly balanced by compressed term premia





Source: Bloomberg.

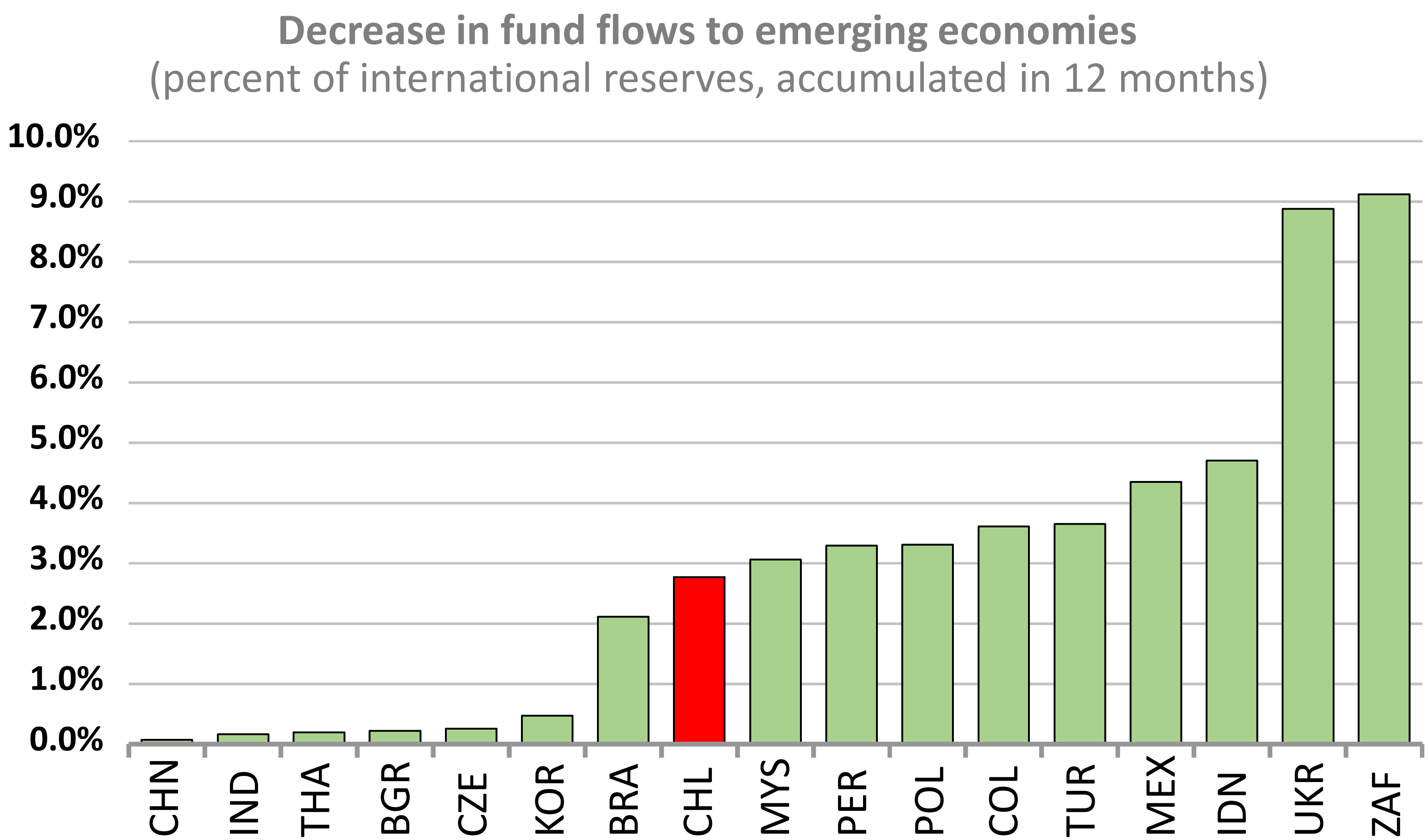
How can a decompression of term premia impact the flow of funds to emerging economies?



(1) The scenario of increasing expectations is identical to what was experienced in 2013 (+190 bp). Besides, the rise in the spread of BBB corporate bonds would be similar to what happened in 2011 (+125 bp).
(2) Emerging countries considered are Brazil, Bulgaria, Colombia, Chile, China, Czech Republic, India, Indonesia, Malaysia, Mexico, Peru, Poland, South Africa, Thailand, Turkey and Ukraine.
(3) Model based on Koepke (2015).

Source: Central Bank of Chile, Bloomberg, and EPFR database.

Measured against reserves, this outflow may change considerably across emerging economies



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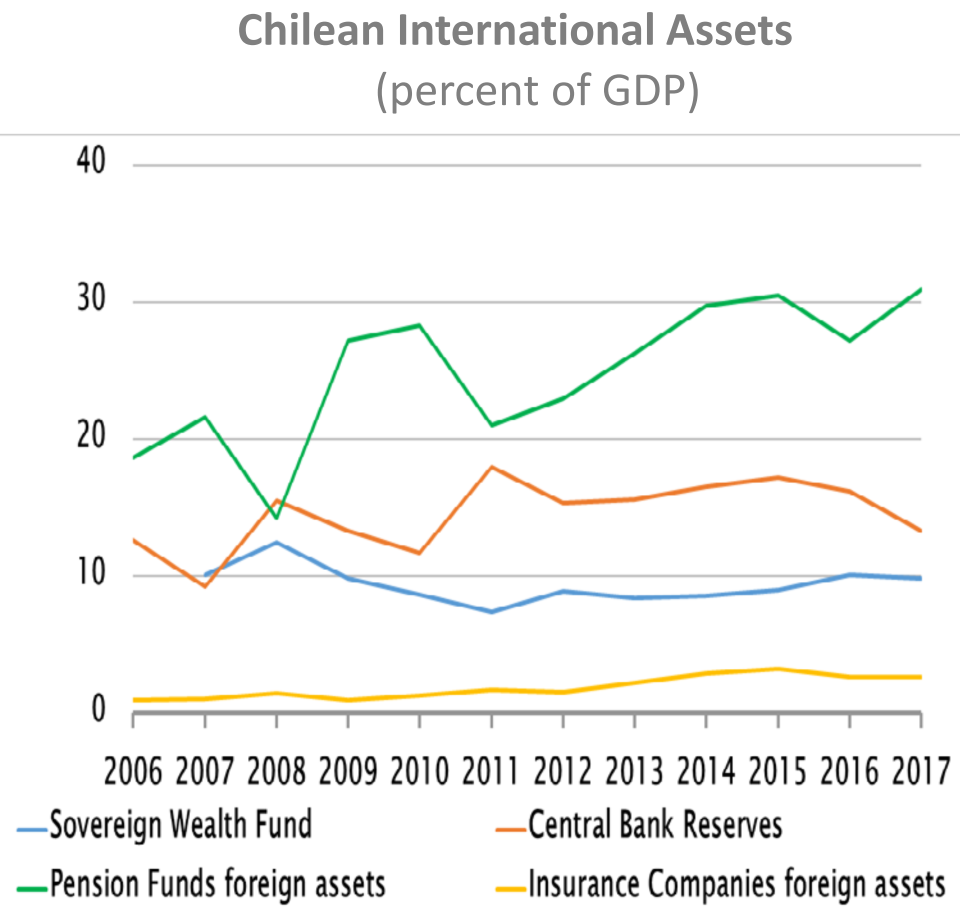
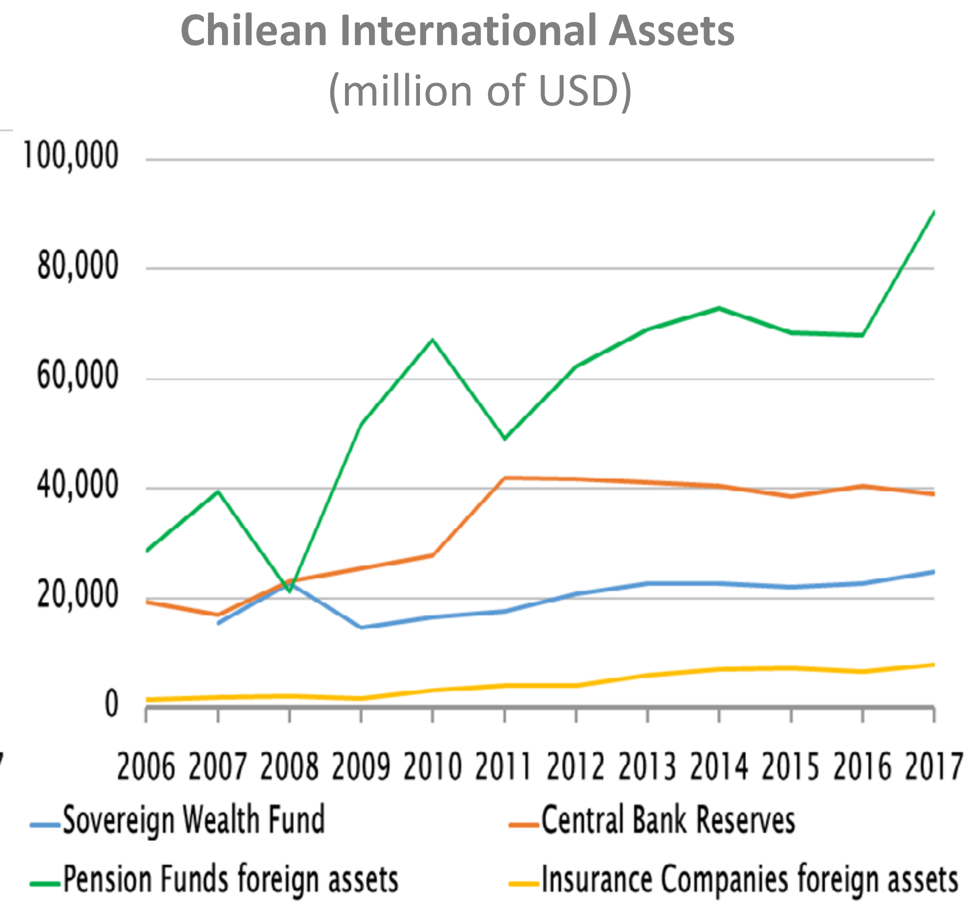
Emerging countries need to be prepared to face a more challenging environment

- Conventional indicators, like financial openness, indebtedness and Central Banks reserves may misrepresent true vulnerability to changing financial conditions and create wrong incentives
    - Enduring openness helps building up long-term resilience and trustworthiness
    - Indebtedness levels and risk profiles
    - Central Bank reserves and complementary sources of external liquidity
    - Policy definitions: exchange rate regime
    - Risk exposure by agents: banks, nonfinancial corporations, households
    - Depth and strength of domestic capital markets
- *Exchange rate as key variable*

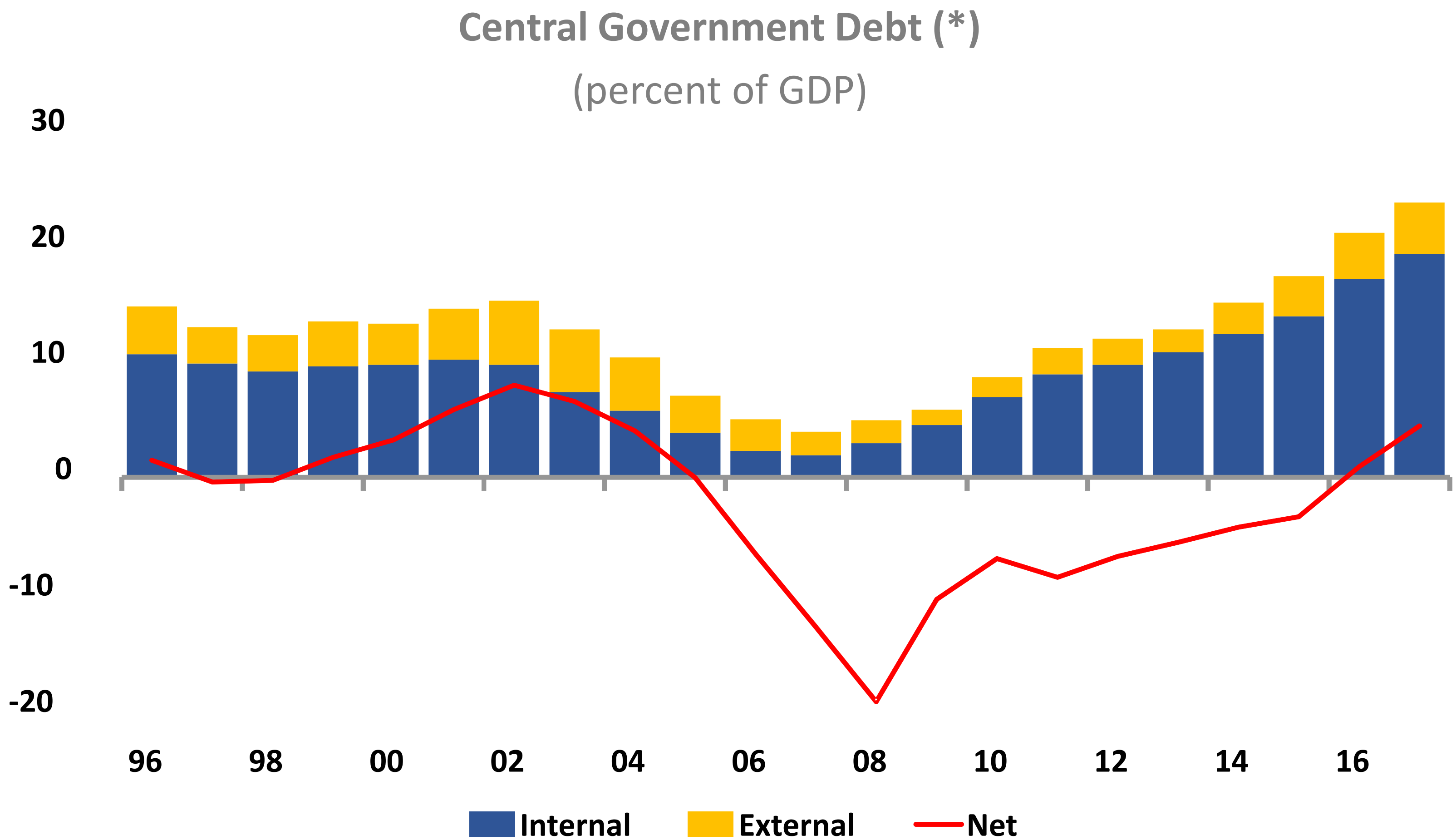
Getting the full picture of external resilience: Chile's foreign assets





Sources: Central Bank of Chile, CMF, and SP.

The role of local borrowing and Sovereign Wealth Fund in the government's balance sheet



Source: Central Bank of Chile, based on data from the Budget Office of the Finance Ministry.

What are the expected spillover effect from FFR on emerging economies long term rates?

A recent study by the Central Bank of Chile finds that a 100 bp shock in the FFR has an impact of 29 bp in long term rates of emerging economies. This impact is larger when considering the term premium component or the period after the Global Financial Crisis

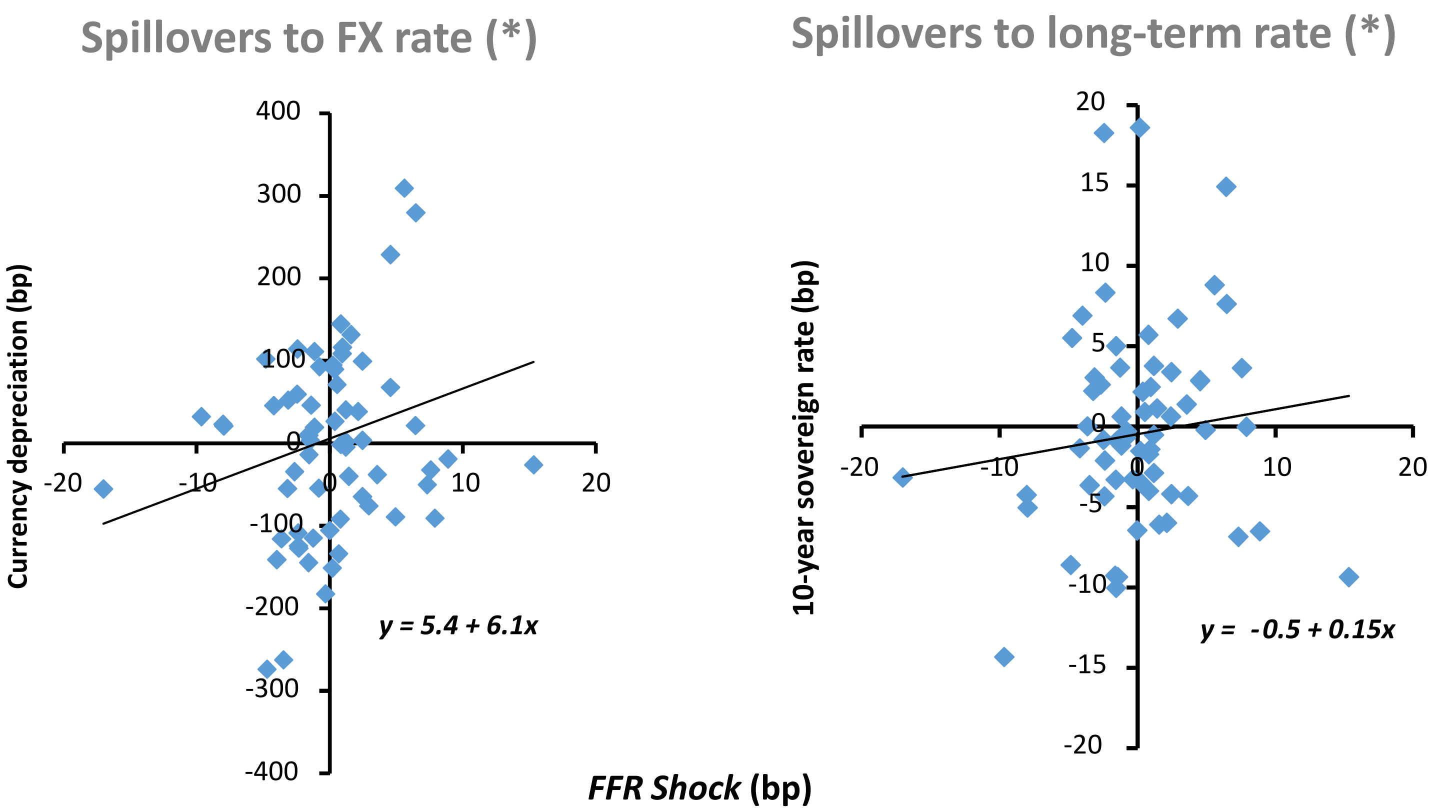
Spillovers from the FFR (*)

	Advanced economies		*Emerging economies*	
	2003-2016	Post Nov.08	2003-2016	Post Nov.08
10-Year interest rate	0.335***	0.429***	0.293***	0.557***
Expected interest rate	0.331***	0.234***	0.054	0.136**
Term premium	0.005	0.196***	0.239***	0.421***
FX depreciation	7.50***	10.920***	3.520***	6.660**

(*) Sample includes 12 emerging and 12 developed economies. Panel regression with daily data between January 2003 and December 2016. Units represent a 1 basis point (bp) effect, given a 1 bp shock in the US monetary policy rate. (***), (**), (*) imply significance at 1, 5, and 10% confidence level, respectively.

Source: Albagli *et al*. (2018).

For Chile, the sensitivity of 10-year local sovereign rates to shocks in the FFR is close to 0.15. This elasticity is higher in the case of the FX rate

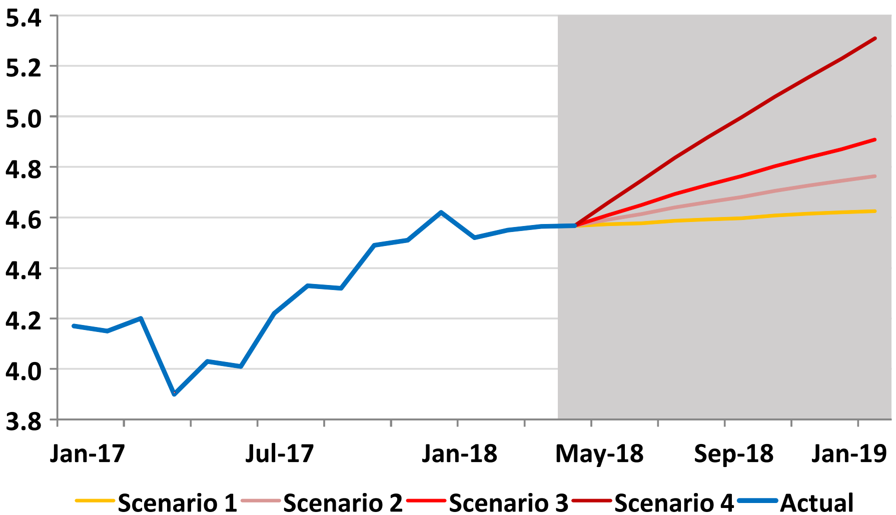


(*) An increase of the FX rate corresponds to a depreciation of the local currency relative to the US dollar. FFR shocks are defined as changes in the 2-year US bond rate within a 2-day window around the Fed meeting.

Source: Albagli *et al*. (2018).

Alternative scenarios of raises of the FFR, term premium and EMBI Chile, would affect the local long-term rate and would account for an average pass-through of 0.15 to 0.25

Impact on 10-year sovereign rate
(percent)



Scenarios and effects on 10-year sovereign rate
(basis points)

	Shocks (12-month var.)			BCP10 rate var.(1)	
	FFR(2)	TP	EMBI	Jun. 18	Dec. 18
Scenario 1	50	0	0	3	7
Scenario 2	50	50	0	6	18
Scenario 3	75	100	0	10	32
Scenario 4	75	100	100	20	68

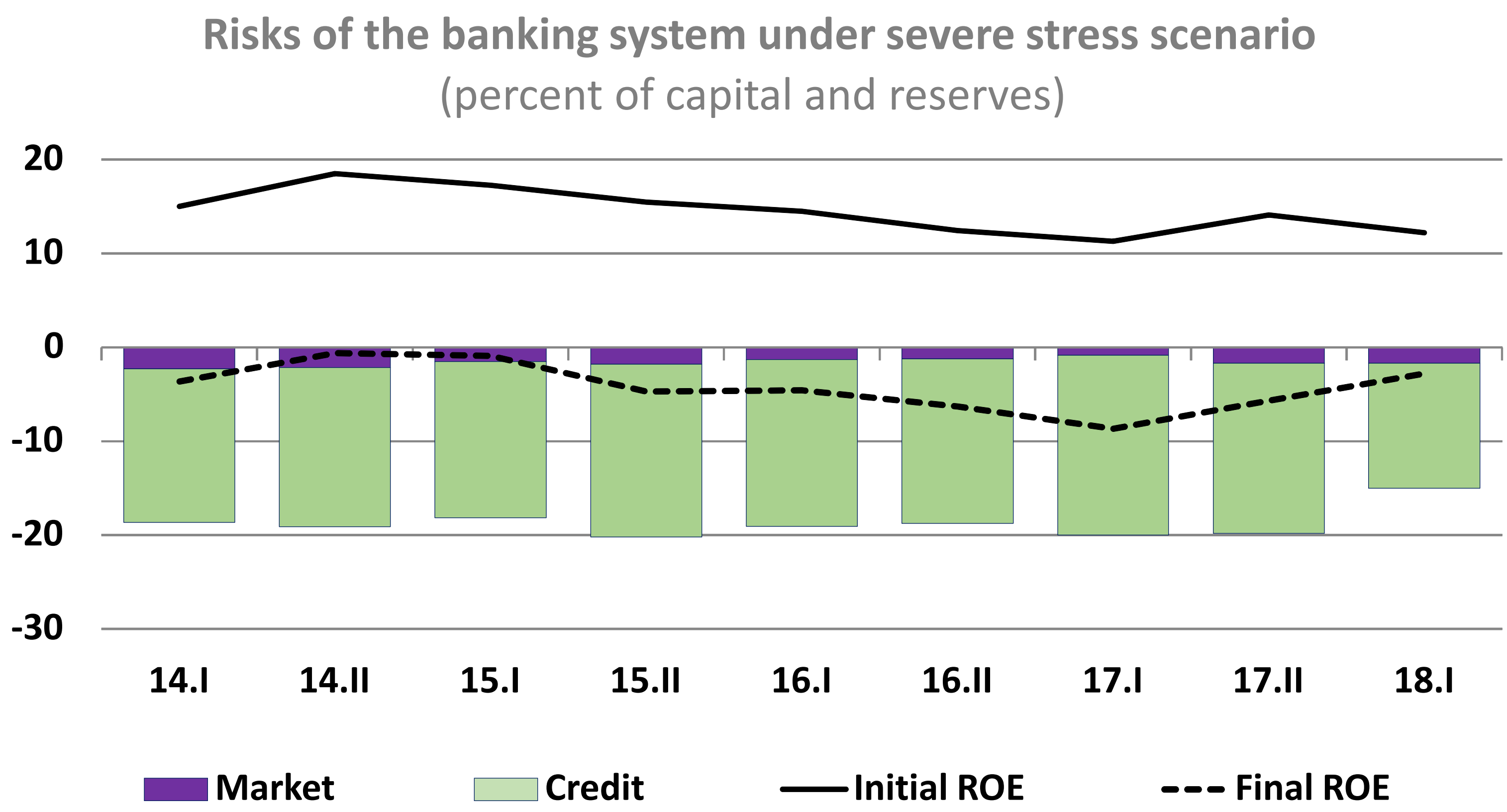
(1) Variation with respect to March 2018. (2): Hikes of 25 bp in June, September and December of 2018, where appropriate.
(2) Estimations based on a VAR(1) model using the following variables: US shadow rate, 10-year neutral rate, 10-year term premium, expected depreciation of the Chilean peso, EMBI Chile, 10-year BCP rate. Out-of-sample forecasts over the period March 2018 to January 2019.

Source: Central Bank of Chile.

Some key factors supporting the roles of the exchange rate as a shock absorber of financial and commodity price shocks

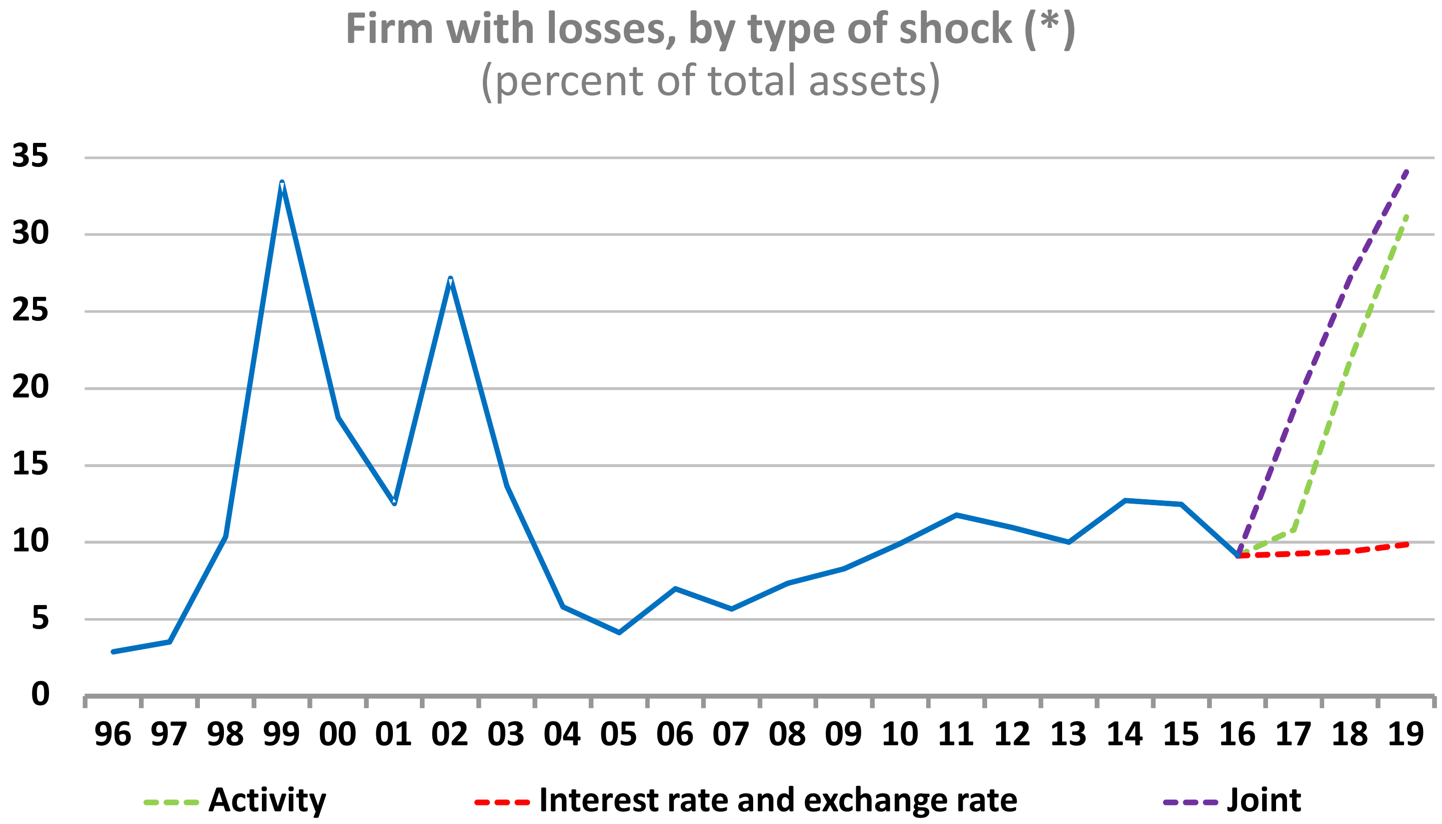
- It is important to minimize financial exposure to exchange rate risk. This involves curtailing currency mismatches in government, business, and bank balance sheets through regulation (macroprudential?) and the use of market hedging mechanisms, like FX derivatives.
- A deep and stable domestic long-term capital market is essential for containing the impact of external financial shocks on the flow of credit. Some countries resolve this through a high propensity to save of the population; others may need to force savings through pension and insurance schemes.
- A flexible exchange rate regime also requires overcoming the fear of floating of monetary authorities. This is especially important given the pass-through of exchange rate into domestic inflation.
- Finally, all of the above may need to rely on substantial financial buffers, like moderate levels of indebtedness by all major economic agents; safe financial assets (sovereign wealth funds); well capitalized banks, and so on.

Stress test applied to the banking system shows that market risk, which include interest rate risk, is low compared to credit risk…



Sources: Central Bank of Chile based on Martínez *et al*. (2017) and information from SBIF.

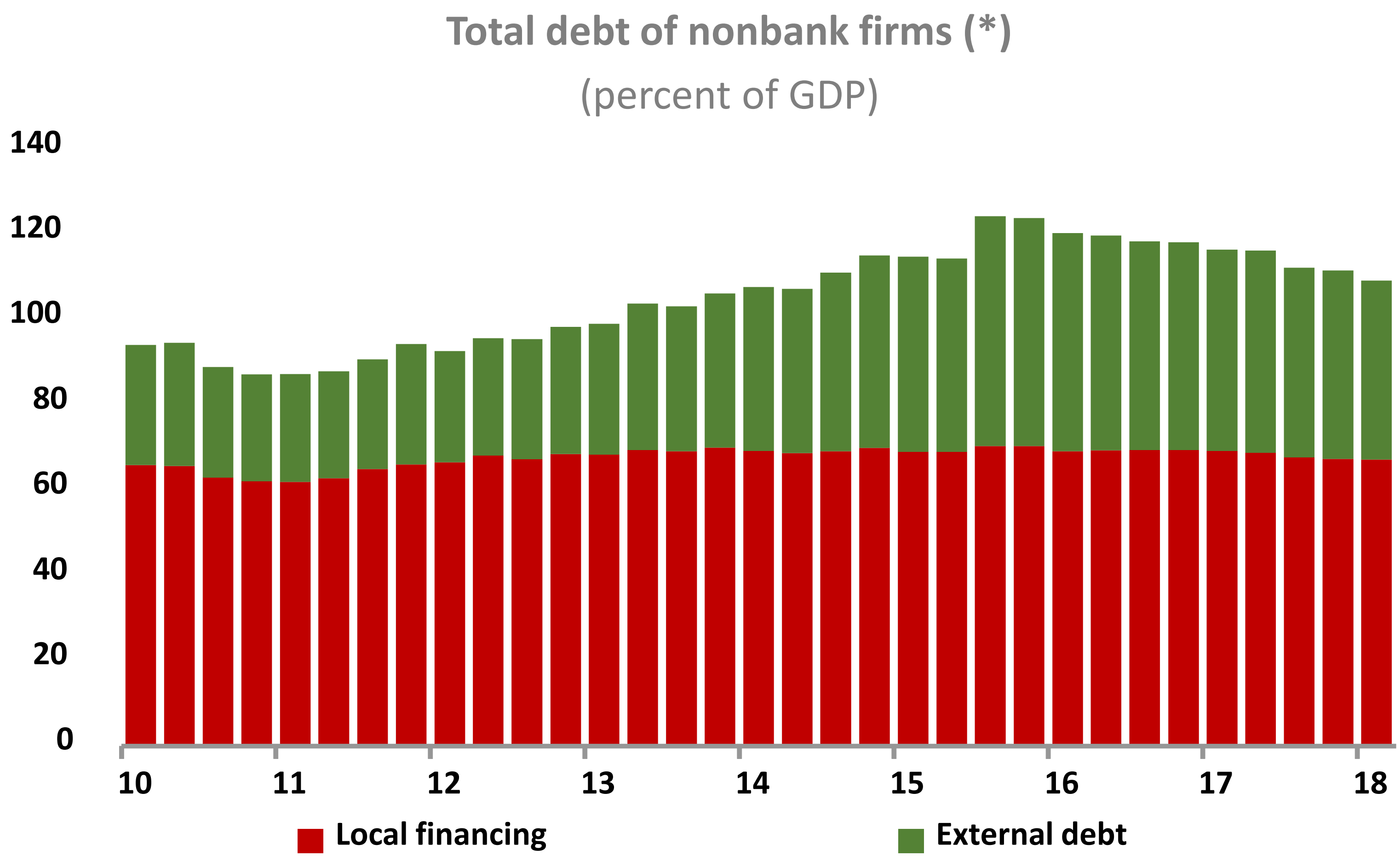
… similar results were found for the corporate sector, where a shock of interest rate has a low impact on performance



(*) Firms with losses have an interest coverage of less than one. Individual data for December each year. Dashed lines indicates the forecast horizon.

Source: Central Bank of Chile based on data from CMF.

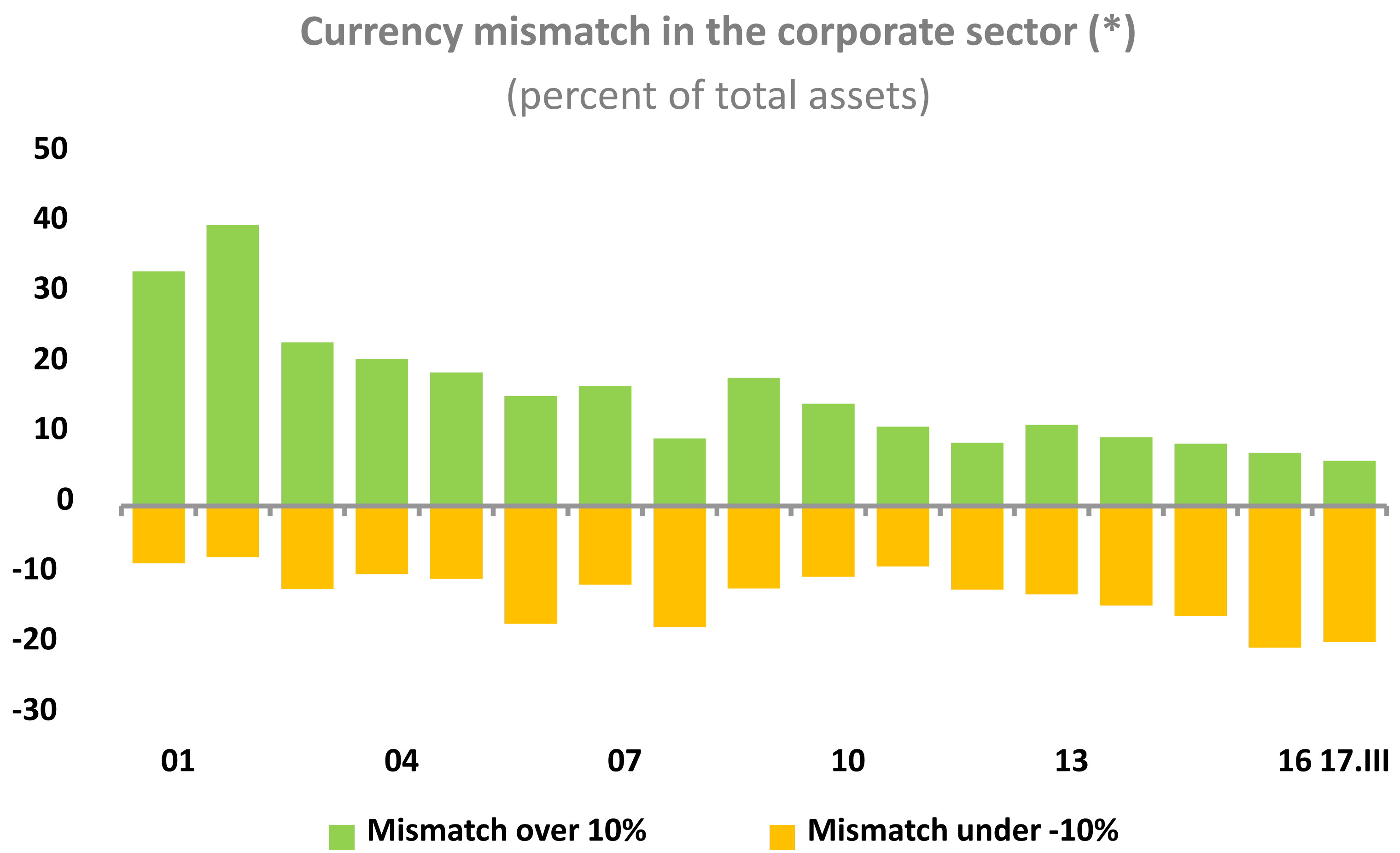
Corporate indebtedness has declined after being pushed by FDI-related loans



(*) Based on firm-level data, with the exception of factoring, leasing, and other, securitized bonds, and commercial papers.

Source: Central Bank of Chile based on data from ACHEF, SBIF, and CMF.

While currency mismatches have declined even more



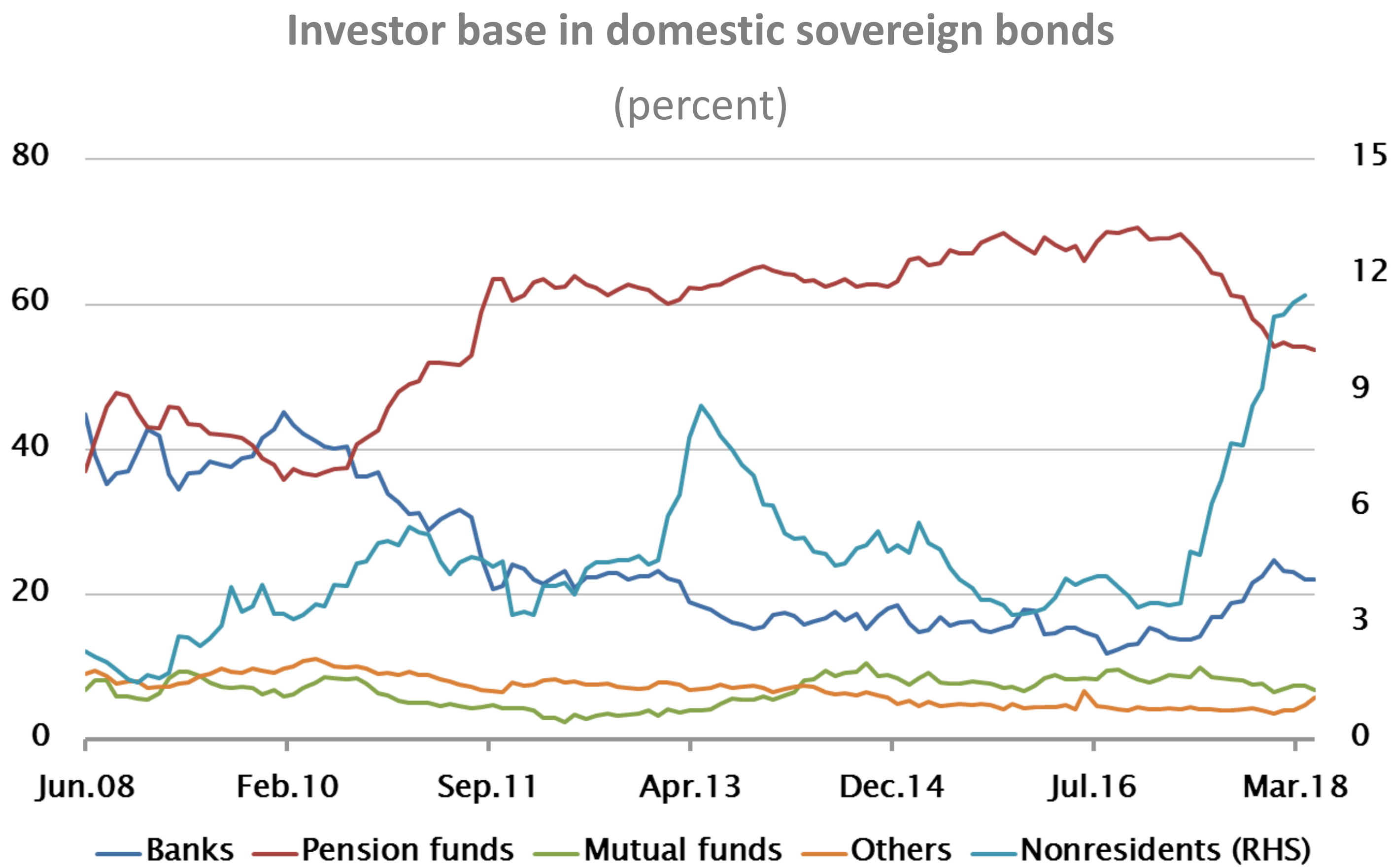
(*) Based on a sample of firms that report their balance sheet in CLP. Preliminary data for 2017.III.

Source: Central Bank of Chile, based on data from the CMF.

The impact of changing financial conditions on households depends on exposure to financial and liquidity risks, partly associated to debt composition

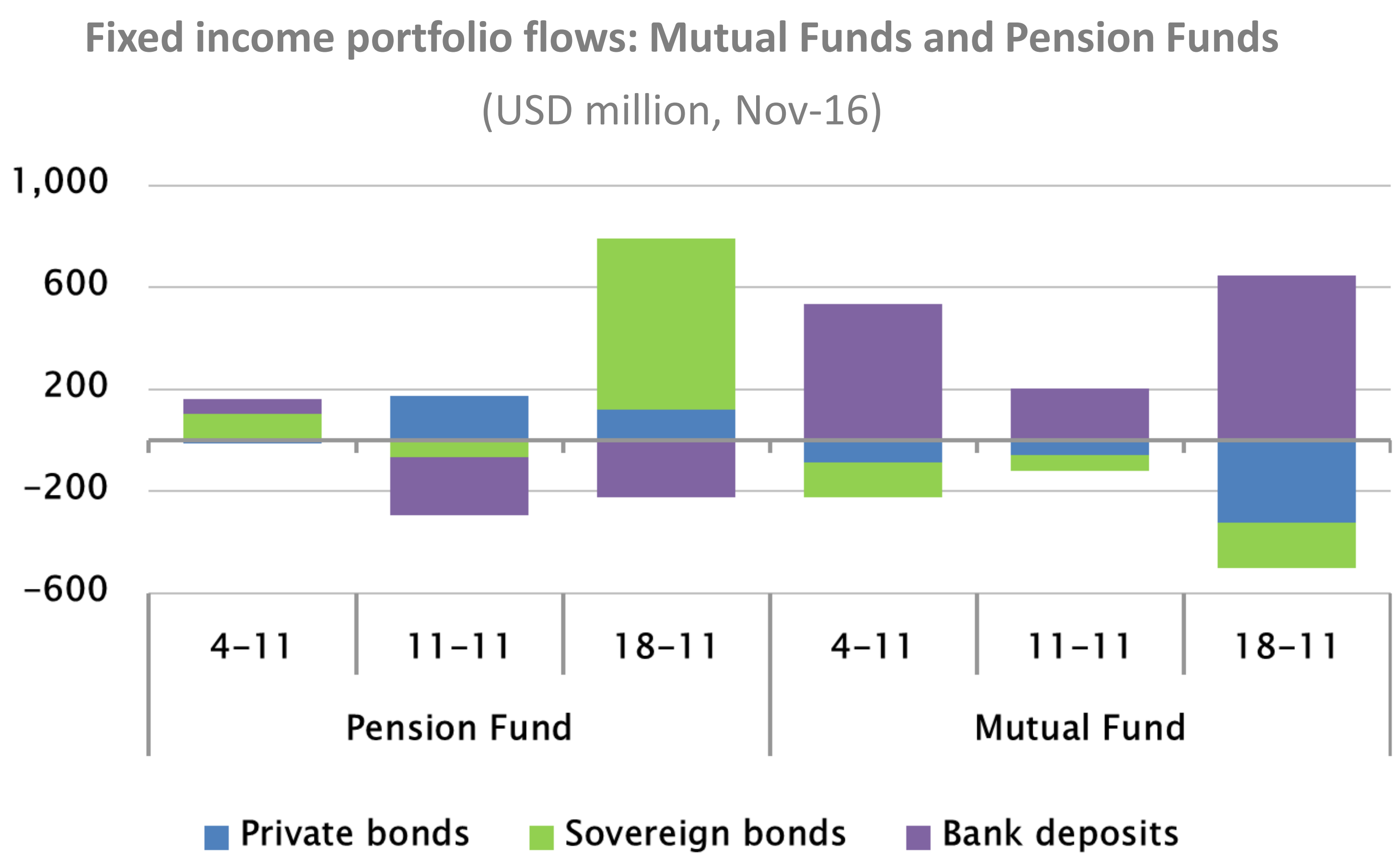
- In Chile, consumer debt consists of 75% of bank term loans, 18% credit cards and 7% credit lines.
- Virtually all consumption lending is at fixed interest rate, with average maturity between 4 and 5 years.
- Regarding the effect that an increase in the interest rate would have on the non-performance of this portfolio, Madeira (2017) finds that a rate shock of 150 bp has a limited impact on the non-payment of household consumption.
- Mortgage lending explains most of the increase in household debt in the last 6 years.
- Mortgages are issued almost entirely at fixed (inflation-adjusted) rates, long maturities and prudent LTV. 97% of the flow and 88% of the stock are at a fixed rate and on average for a term of 22 years.
- Together, these elements reduce the potential impact of an increase in interest rates on the financial burden of households.
- A key remaining issue is the extend to which broader economic conditions put a pressure on additional borrowing under more adverse terms.

Mitigation of interest rate risk depends also on the behavior of the investor base in the economy…



Sources: Central Bank of Chile and DCV .

…which makes particularly relevant how demand and supply for bonds behave in stressful times



Sources: Central Bank of Chile and DCV .

Conclusion

- Long-term interest rates in developed economies will continue to increase. Change in risk perceptions can make this process much more abrupt than planned by major central banks
- EMEs should prepare for a more challenging financial environment, especially those that are starting from a weaker economic position than by the Global Financial Crisis
- Since the current conditions are still favorable, they provide a window of opportunity to build further economic resilience
- In assessing the vulnerability/resilience of each country it is important to go beyond aggregate indebtedness. More important may be debt composition and exposure to key financial risks
- Exposure to external risks may be only part of the story. Internal exposure of major economic agents and markets matter as well. A country can build on internal strengths to mitigate external vulnerability

Conclusion

- The exchange rate regime plays a key role in the transmission of external shocks. Flexible exchange rates can provide an effective cushion …but not full protection
- With the proper incentives and the support given by policy consistency, markets can develop more efficient FX hedging products than the imperfect insurance from government through FX market intervention
- Similarly, government, companies and households can still reduce their exposure to financial and liquidity risks by deleveraging and refinancing
- So there are a number of policy alternatives at the disposal of EMEs to strengthen their resilience to changes in the current economic and financial environment

Conclusion

- Countries that have been slower at addressing structural vulnerabilities may need to (re-)build financial buffers through fiscal consolidation and FX reserves accumulation
- While countries that have made more progress at reforms should be able not only to rely on them but to communicate that to markets so that they make a material difference

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