Bank of Thailand – OMFIF High-level Seminar

"Shaping the Future of Central Banks"

Session I: "Navigating Normalization"

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Central Bank of Chile

October 9, 2018

Issues for discussion

1. The evolving path of monetary policy normalization
2. How vulnerable are EMs to global market conditions?
3. Why is the Chilean economy so resilient?
4. Exchange rate flexibility, monetary policy and financial markets
5. Concluding remarks

The evolving macro landscape

- Two years ago:
  - Recovery from GFC coming to a head. Synchronized growth around the developed world; time to start thinking how to unwind accommodative, unorthodox monetary policy in AEs
  - Meanwhile, China had set in motion a strategy to rebalance growth path, reducing pressures on capital investment, financial markets, the environment
  - Prospect of gradual, carefully crafted, coordinated normalization. Pretty unique for international business cycles
  - This was very well reflected in monetary policy communiques of major central banks, which usually referred to global financial conditions, risks
  - Substantial risks existed, but were expected to be contained through gradual adjustment and forward guidance, giving different actors the opportunity to adapt and prevent

- Brexit and the US election significantly altered this landscape through policy-induced uncertainty
  - Globalization was challenged from its core
  - Procyclical fiscal policy in the US

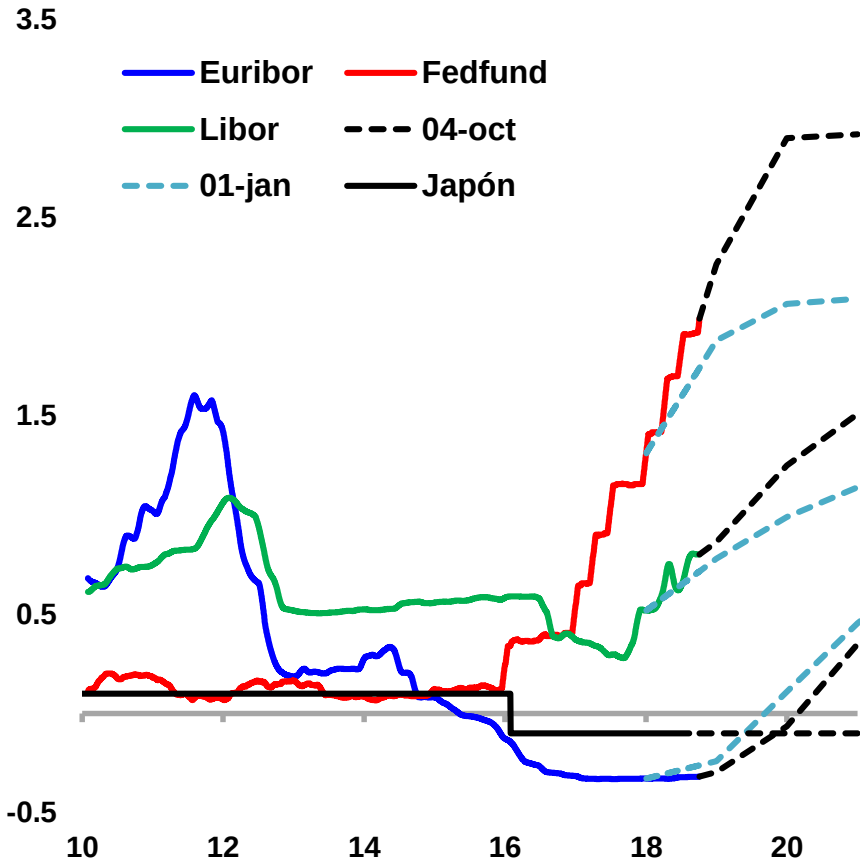
- Reinforced by structural uncertainty:
  - Low Price and wage inflation
  - Uncertain output gaps, neutral interest rate

- While world economic conditions remain broadly favorable, downside risks grow and take shape, most recently for EM

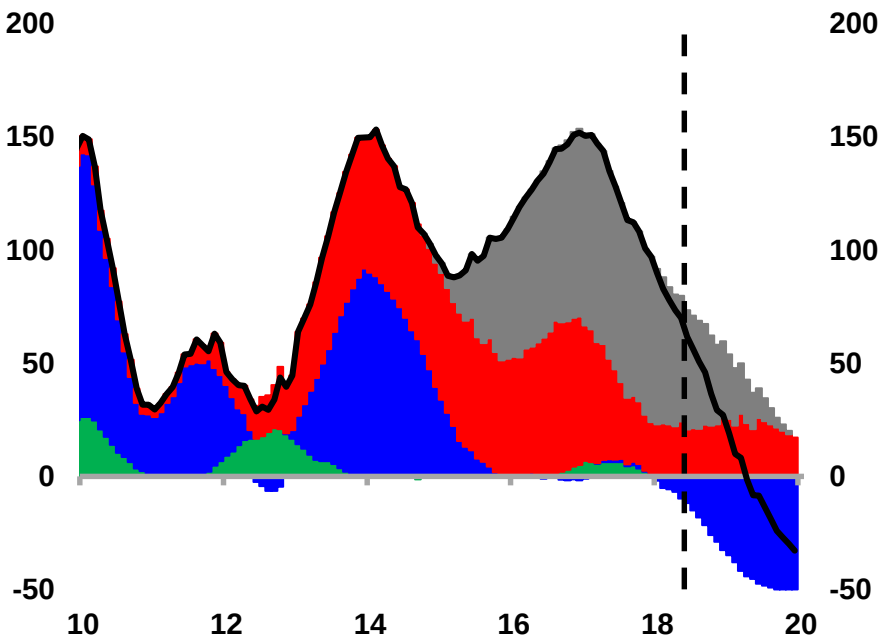
Some facts

The Fed is halfway through the process of MP normalization, while the rest of AE are just about to tapering QE

Expected rates
(percent)



Balance-sheet flows
(USD bn, 12-m moving average)



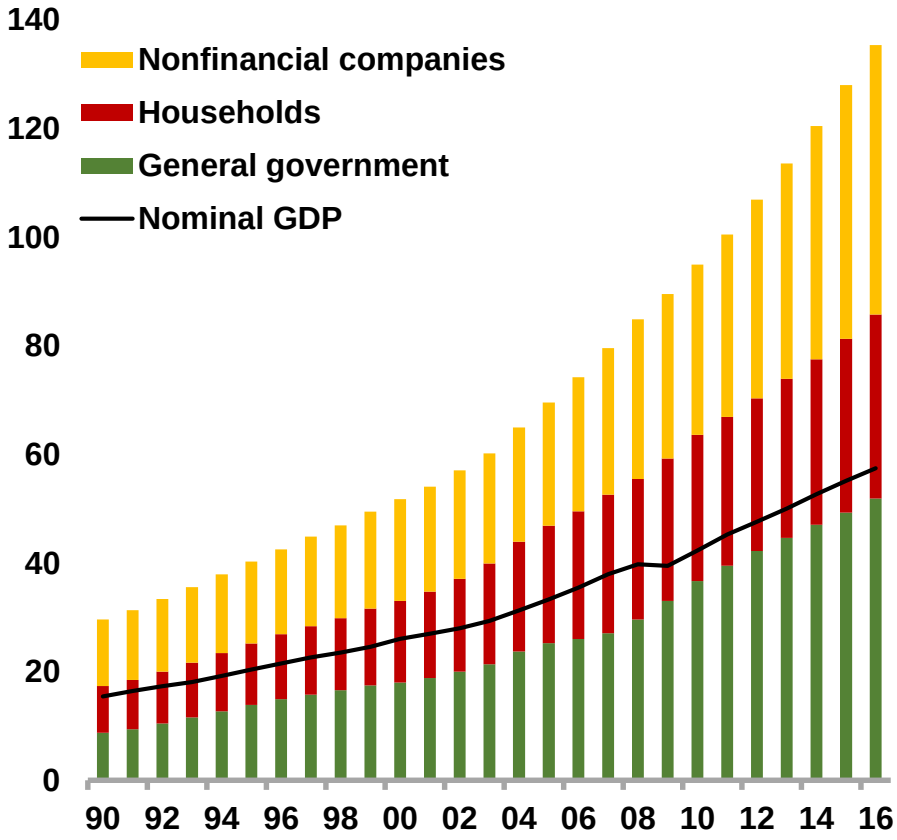
- **BoE** → no change
- **Fed** → balance-sheet reduction (Sep/17 meeting)
- **BoJ** → ¥4 tn until Dec, then to the half
- **ECB** → €15 bn between Oct-Dec, then stop buying

Source: Central Banks and Bloomberg.

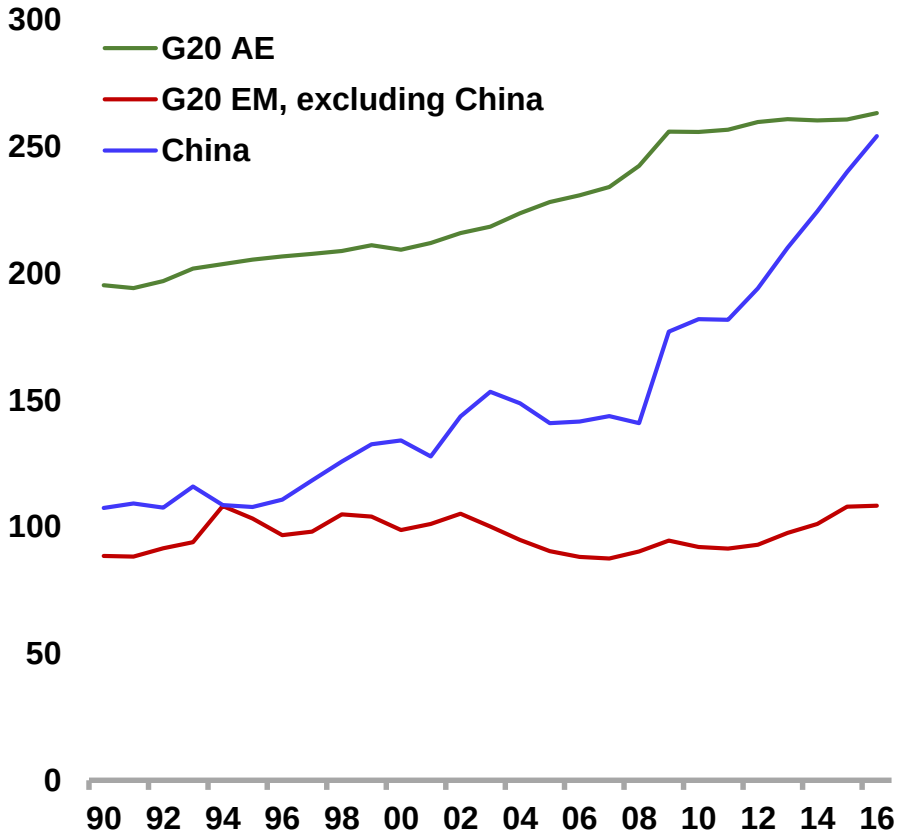
Risks to EM and AE

Aggregate Debt-to-GDP ratios are much higher than before the Global Financial Crisis in advanced economies and China

Gross debt and GDP
(trillions of US dollars)



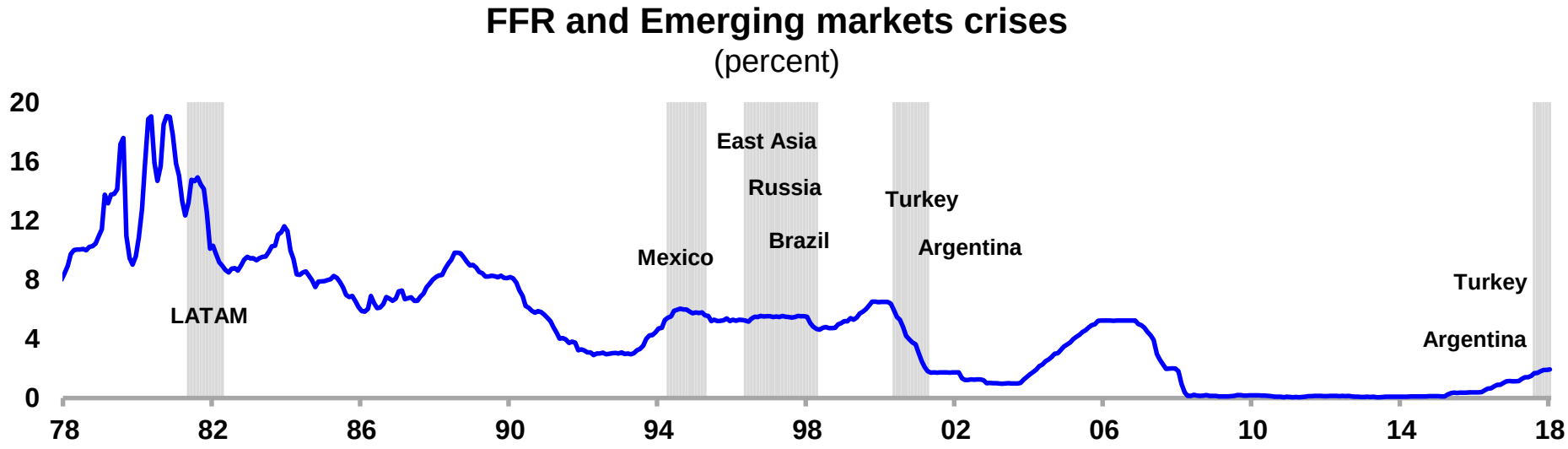
Gross Debt-to-GDP ratios by region
(percent)



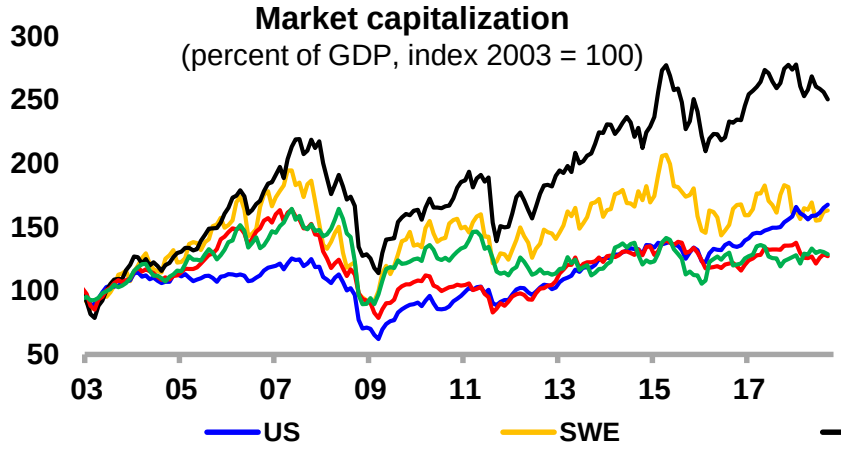
Source: IMF.

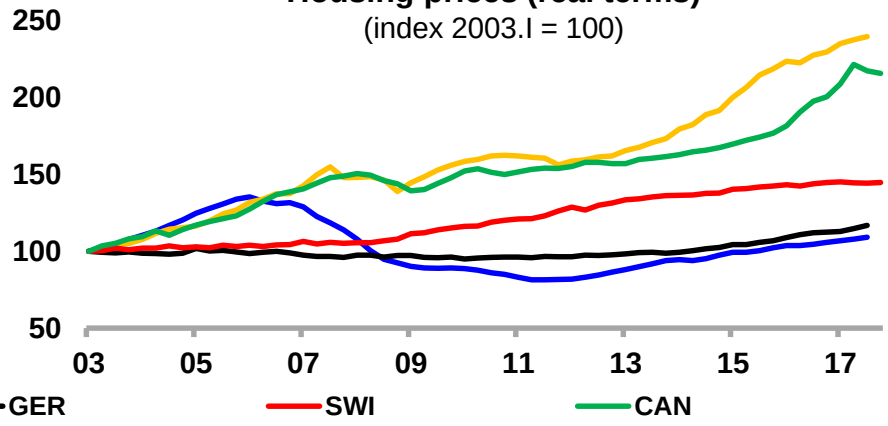
Risks to EM and AE

MP normalization has been pointed out as causing adjustments in asset prices and EM cycles



- Risks to advanced economies: some asset prices have been booming lately





Source: Bloomberg.

Emerging challenges, policy dilemmas

- Financial stability risks of delaying MP normalization in AEs—can monetary policy ignore financial stability risks?

- US protectionism as a self-fulfilling prophecy—trade disputes justified on the basis of bilateral imbalances, yet both tariff increase and fiscal expansion push appreciate the USD and broaden the current account deficit

- EMs benefited from favorable financial conditions, now appear more exposed to financial risks—a stronger USD coupled with flatter yield curve can be as threatening to EM as uniformly higher interest rates in AE with a softer USD

- Relevance of global financial cycles and the policy trilemma—can EMs manage their own monetary policy in a context of tightening monetary policy in the US?

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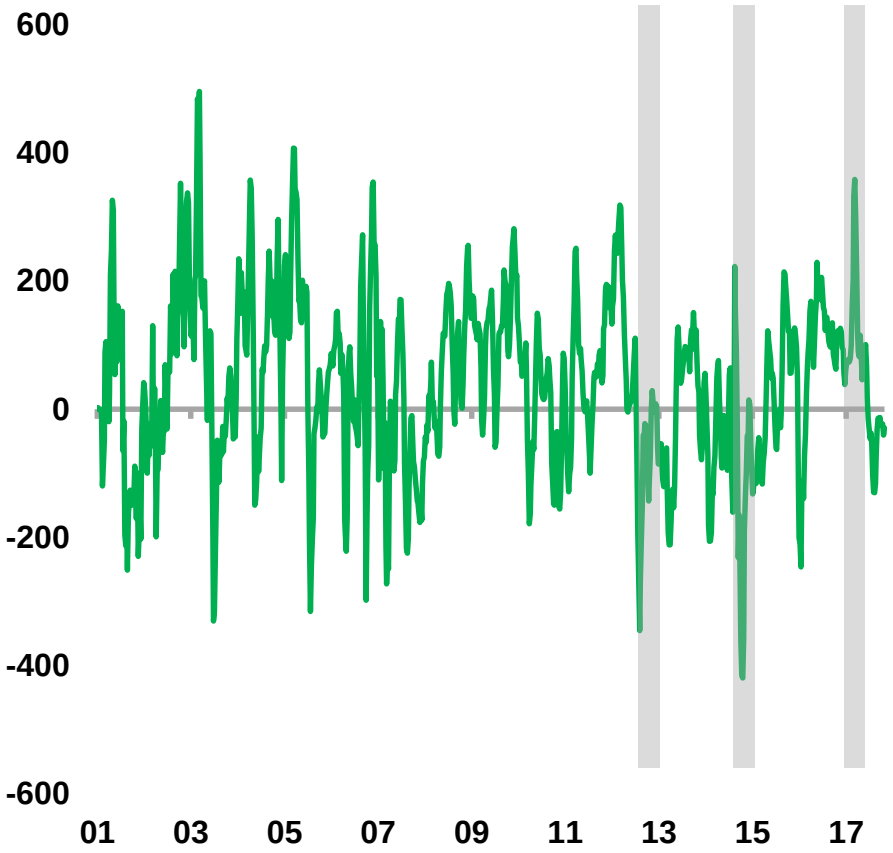
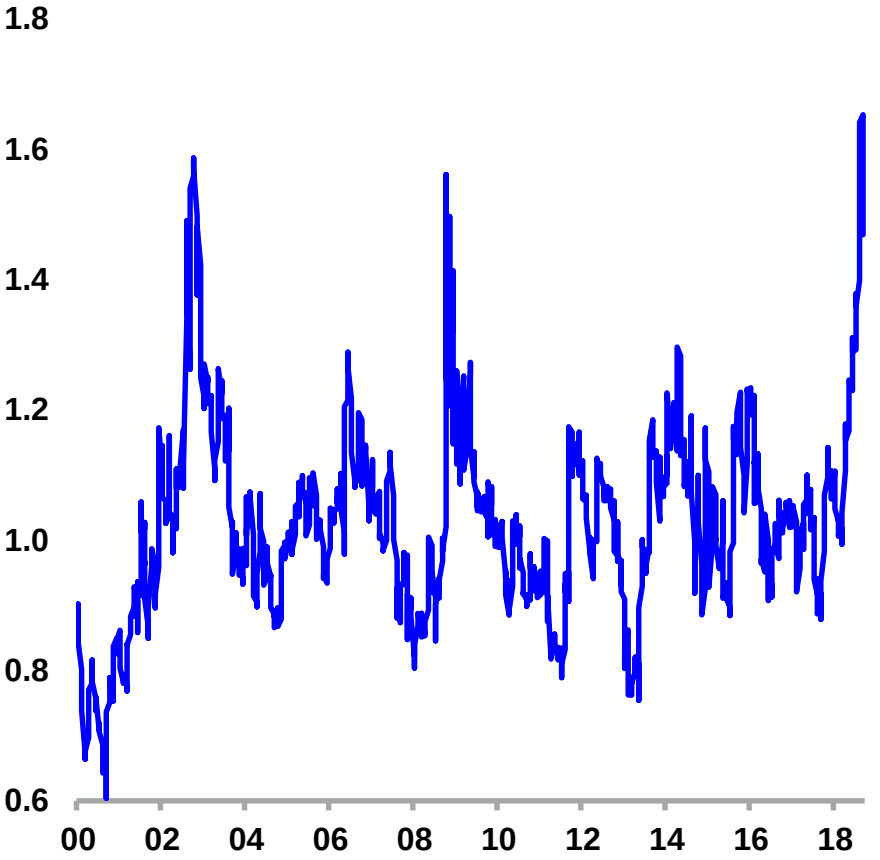
Some facts

EM have been under pressure specially regarding FX volatility. Capital flows reversals so far do not outperform previous episodes

EM capital flows: selected episodes (1)
(2-year moving average flow)



Currency volatility EM/G7
(ratio)

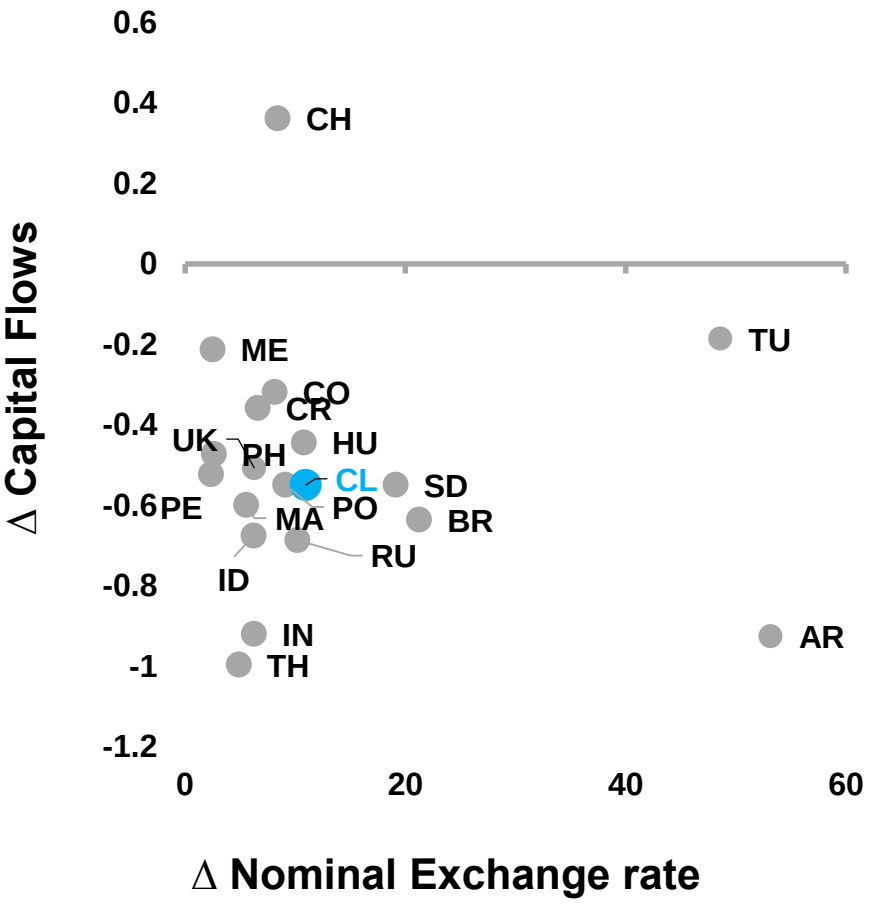


(1) Episodes: Current sell-off: Apr/19/18 to Sep/19/18. China: Jun/06/15 to Aug/12/15. Taper tantrum: May/21/13 to Jul/23/13. Source: EPFR and Bloomberg.

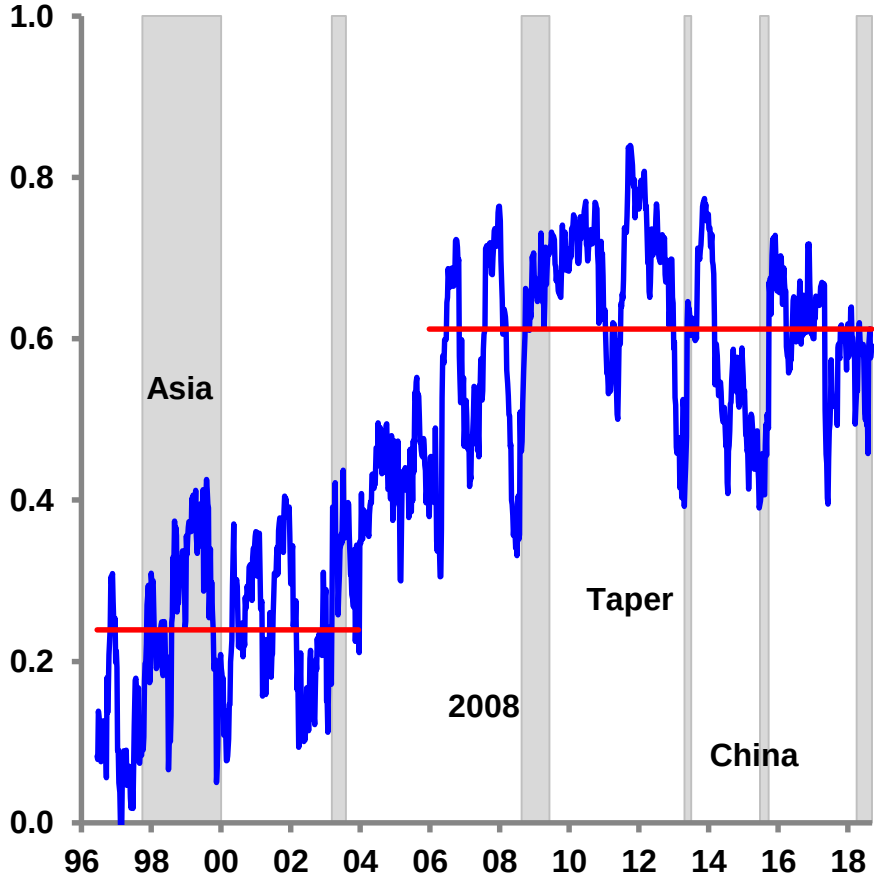
Some facts

Volatilities across EM currencies have increased recently, although is a customary response during stress episodes

Current sell-off episode (1)
(percent)



Correlation between EM currencies (2)
(1 week window)



(1) Current sell-off: Apr/19/18 to Sep/19/18. (2) Corresponds to the median of 24-weeks rolling correlation between the weekly return of a pool of emerging currencies and the average of the sample. Source: EPFR and Bloomberg.

EM vulnerabilities assessment

EM need to be prepared to face a more challenging environment

- EM are seen a high-yield, high-risk assets. They attract capital at times of search-for-yield but are exposed to risk-off scenarios
- Market response is likely to be affected by changes in the investor base towards institutional investors and global funds: herd behavior, quotas, fund managers' incentives. Ability to discriminate under stress still to be tested
- Still, once some countries suffer, analysts start search for potential new casualties. Search starts with conventional indicators:
  - Financial openness
  - Indebtedness
  - Central bank reserves
  - Exchange rate volatility
  - Capital movements
- Yet these may misrepresent true vulnerability to changing financial conditions and create wrong incentives
- It may also understate the relevance of idiosyncratic shocks

Assessing EM vulnerability

To what extent can external shocks weaken economic performance and compromise financial commitments?

External shocks	Transmission channel	Risk	Outcome
Financial Real Terms of Trade	Funding costs Capital flow reversals Trade Exchange rates	Financial risk Rollover risk Currency risk Internal spillovers, macro interactions Policy risk	Liquidity Solvency Political

Vulnerability checklist

- **Debt—beyond size**
  - Composition, structure
  - Countervailing assets and full balance sheet
  - Interest rate exposure, term structure
- **Reserves—beyond size**
  - Liquidity of reserves
  - Size of reserves relative to sources of risk
  - Complementary assets
- **Exchange rate—beyond volatility**
  - Currency mismatches and ER exposure
  - ER regime and fear of floating
  - Inflation pass-through
- **Fiscal—beyond flows**
  - Government balance sheet and risk exposures
  - Debt tolerance and fiscal space
- ***Macroeconomics: exchange rate flexibility and domestic financial markets***

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Vulnerabilities: Financial markets

Chile reacts rather mildly in sell-off episodes. Why?

Financial markets during selected sell-off episodes (1)

	Apr/19 to Oct/04 (Current Sell-off)			Jun/06/2015 to Aug/12/2015 (China)			May/21/2013 to Jul/23/2013 (Taper Tantrum)		
	NEER (%) (2)	CDS (bp)	10-year Sov. rate (bp)	NEER (%)	CDS (bp)	10-year Sov. rate (bp)	NEER (%)	CDS (bp)	10-year Sov. rate (bp)
Argentina	90.16	337.46	--	2.17	0.00	--	4.05	-729.85	--
Brazil	15.12	78.62	157.60	11.61	61.10	87.90	8.54	36.42	88.50
Chile	12.15	-0.74	15.73	8.32	27.02	-6.60	3.70	13.51	29.27
Colombia	10.54	11.74	54.30	16.35	35.79	20.30	1.84	31.26	151.00
Mexico	2.95	6.79	53.20	5.68	11.18	-20.80	1.29	26.50	96.60
Peru	3.22	4.31	45.00	2.17	17.01	63.00	5.01	28.66	93.00
China	9.39	-0.11	5.00	2.86	18.65	5.00	0.11	52.09	33.00
Korea	6.44	25.51	-19.50	6.80	-0.50	-20.10	0.58	3.00	49.00
India	11.84	31.03	52.70	1.14	17.91	-9.00	7.85	--	81.00
Indonesia	10.14	42.95	177.10	3.39	32.88	7.40	4.48	47.69	178.60
Malaysia	6.57	27.31	8.00	7.46	49.17	10.60	5.30	47.87	61.30
Thailand	4.49	-2.29	47.80	4.74	30.44	-27.80	4.12	21.78	42.40
Poland	10.63	18.95	-2.50	1.93	-2.67	-34.90	-1.81	6.62	32.00
Russia	9.44	9.06	8.20	17.27	17.73	--	3.43	27.54	73.20
South Africa (3)	22.34	67.83	119.40	3.04	21.38	--	1.45	29.37	12.80
Turkey	51.90	220.80	172.90	2.34	22.52	4.40	3.06	66.66	122.10

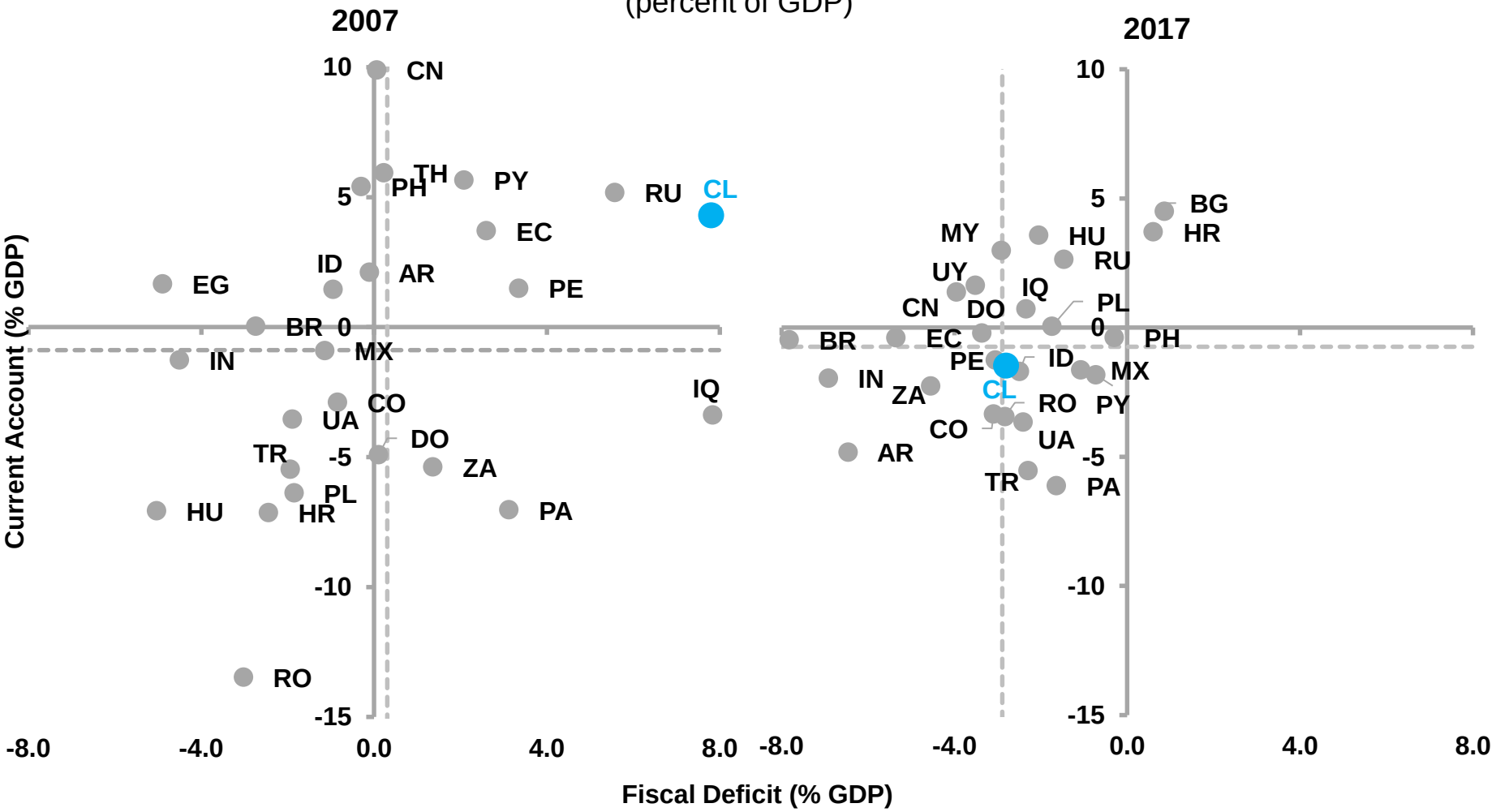
(1) Changes correspond to end-to-end change, on the dates indicated. (2) Positive sign indicates a depreciation against the US dollar. (3) South Africa rate corresponds to 9-year rate. Source: Bloomberg.

Vulnerabilities: Fiscal deficit and current account

From a fiscal and current account viewpoint, EM are less prepared to deal with a sudden stop than in 2007. Chile is not an exception

Fiscal deficit and Current Account (1)

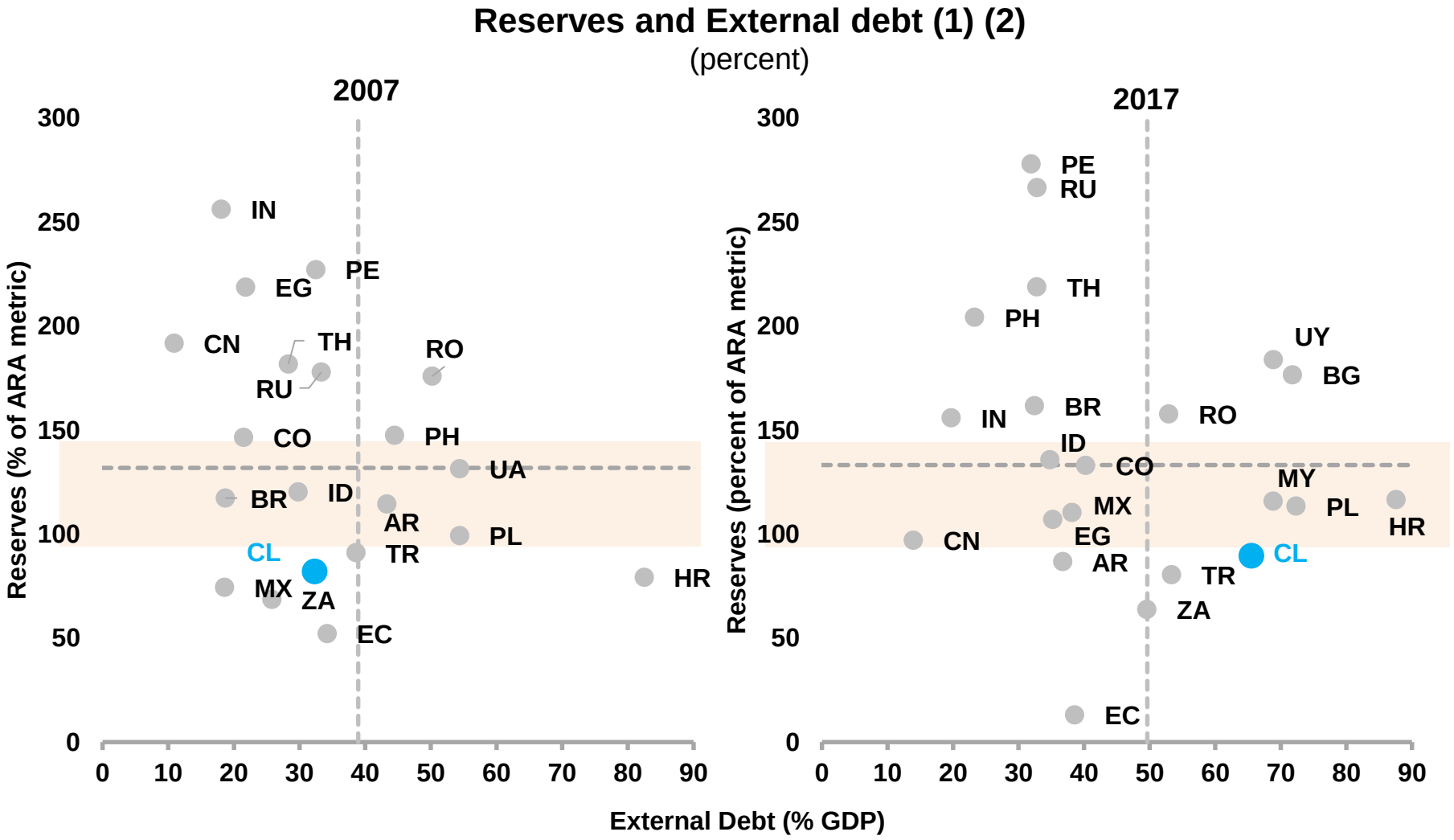
(percent of GDP)



(1) Dotted lines: annual average of the respective series without considering the minimum and maximum values.
Sources: IMF and Central Bank of Chile.

Vulnerabilities: External debt and reserves

Between 2007 and 2017 EM foreign debt grew ahead of the accumulation of reserves

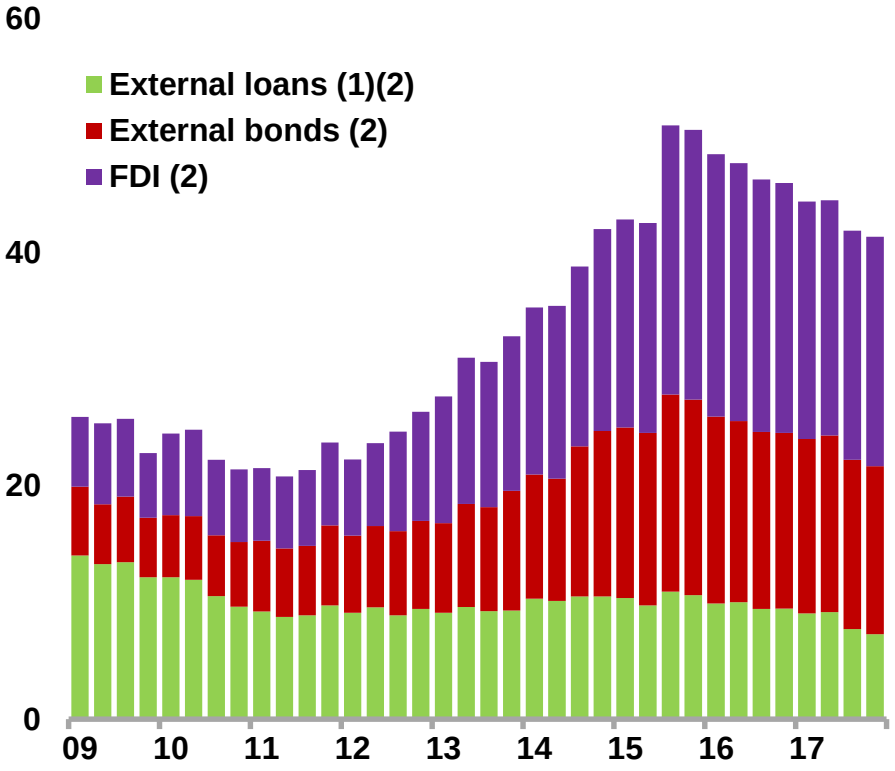


(1) ARA Metric: Fixed (Float) Exchange Rate = 10(5)% × Exports + 10(5)% × Broad Money + 30% × ST Debt + 20(15)% × Other Liabilities (2) Dotted lines mark annual average of the respective series without considering the minimum and maximum values. Source: IMF, WB and Central Bank of Chile.

Vulnerabilities: External debt

Most of Chile's external debt growth has been related to FDI; another difference of Chile with other countries

Total debt of non-bank firms (3)
(percent of GDP)



Total external debt and FDI (4)
(percent of GDP)

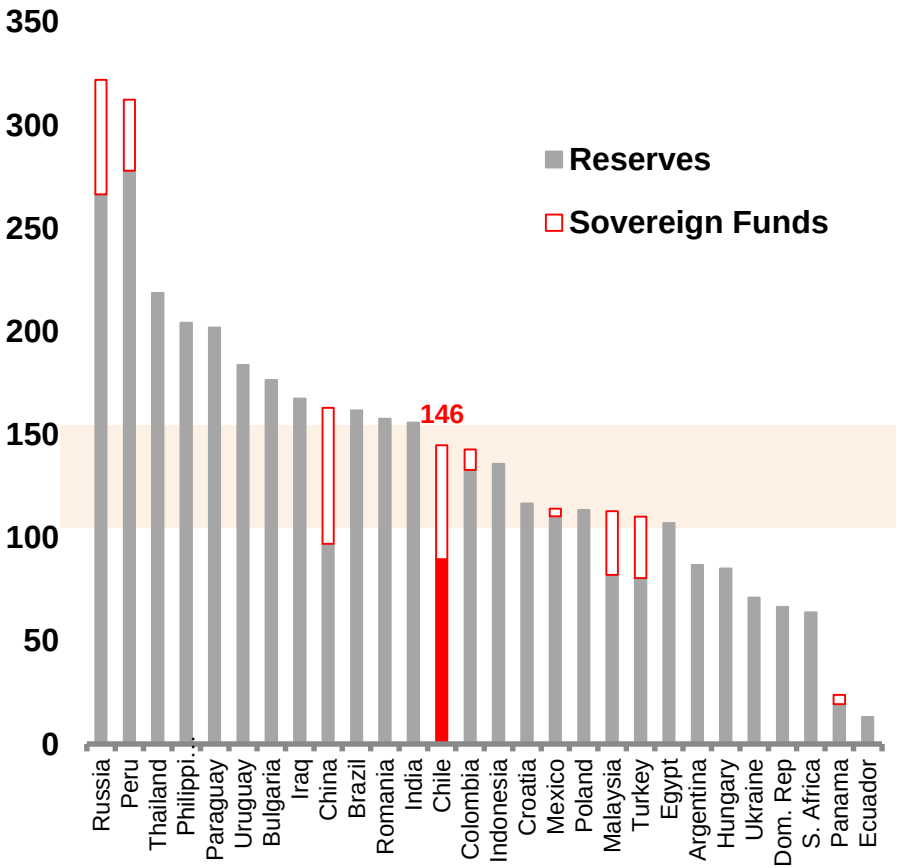
(1) Includes multilateral organizations. (2) Converted to Chilean pesos according to the average FX of the last month of each quarter (3) Includes government companies. (4) Includes government debt. Sources: WB (total external debt and FDI) and CBCh, based on data from Association of Chilean Factoring Firms (ACHEF), Superintendence of Banks and Financial Institutions (SBIF), and Financial Markets Commission (FMC).

Vulnerabilities: Reserves

Adding sovereign funds to international reserves puts Chile on a brighter spot in relative terms

Reserves + sovereign funds (1)

(percent of ARA metric)



Measures of foreign reserves (2) (3)

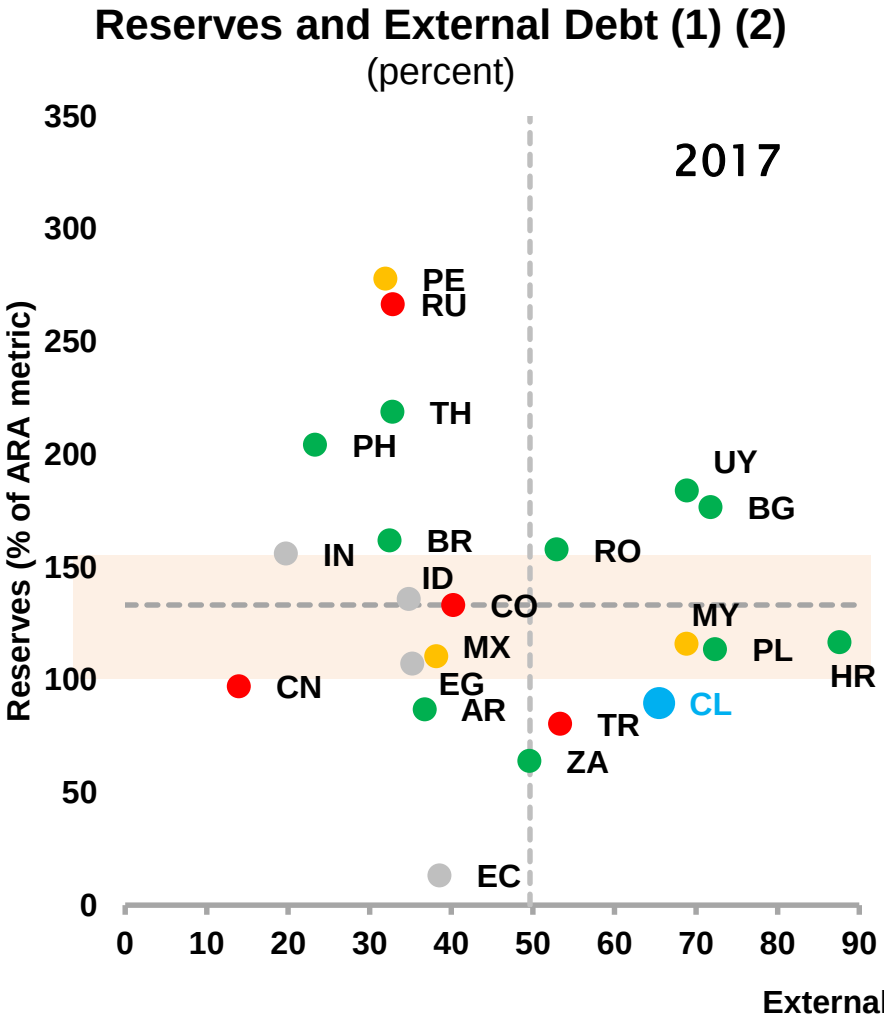
(percent, as of 2017)

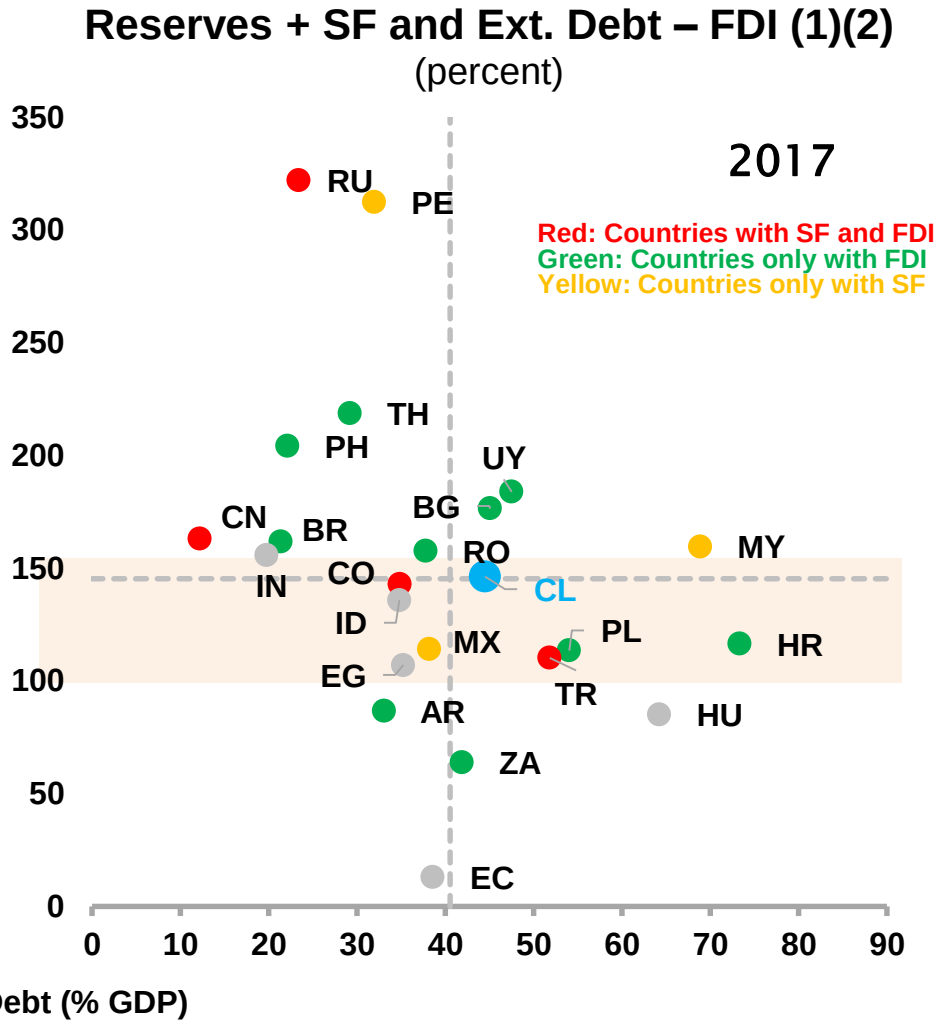
	Reserves / Imports	Reserves + SF / Imports	Reserves / ST Ext. Debt	Reserves + SF / ST Ext. Debt
Iraq	66.82	66.82	2623.18	2623.18
Paraguay	63.48	63.48	565.74	565.74
Bolivia	93.40	104.37	487.13	544.30
Russia	132.66	160.31	434.10	524.59
China	146.28	245.95	291.70	490.48
Peru	134.23	150.87	397.79	447.10
Philippines	71.40	71.40	408.60	408.60
Thailand	81.33	81.33	281.71	281.71
Brazil	168.80	168.80	272.66	272.66
Indonesia	70.10	70.10	233.67	233.67
Egypt	45.31	45.31	210.30	210.30
Bulgaria	79.08	79.08	203.59	203.59
Colombia	82.81	88.99	177.89	191.16
Dom. Rep	31.96	31.96	190.46	190.46
India	72.26	72.26	179.78	179.78
Chile	**52.37**	**85.61**	**104.90**	**171.50**
Mexico	38.34	39.66	154.68	159.97
Croatia	74.81	74.81	131.98	131.98
Hungary	21.94	21.94	130.11	130.11
Uruguay	124.46	124.46	115.37	115.37
Poland	43.28	43.28	103.15	103.15
South Africa	50.84	50.84	101.21	101.21
Malaysia	50.55	69.64	71.47	98.47
Romania	49.15	49.15	92.24	92.24
Turkey	43.37	59.49	59.91	82.17
Argentina	62.61	62.61	37.10	37.10
Ecuador	9.27	9.27	26.52	26.52
Panama	18.72	23.17	10.58	13.10

(1) ARA metric: Fixed (Float) Exchange Rate = 10(5)% × Exports + 10(5)% × Broad Money + 30% × ST Debt + 20(15)% × Other Liabilities. (2) Shaded area show countries with Sovereign Funds. (3) ST external debt on a remaining maturity basis. Source: IMF and SWFI.

Vulnerabilities: External debt and reserves

Chile's vulnerability assessment changes significantly when composition of liabilities and assets are considered





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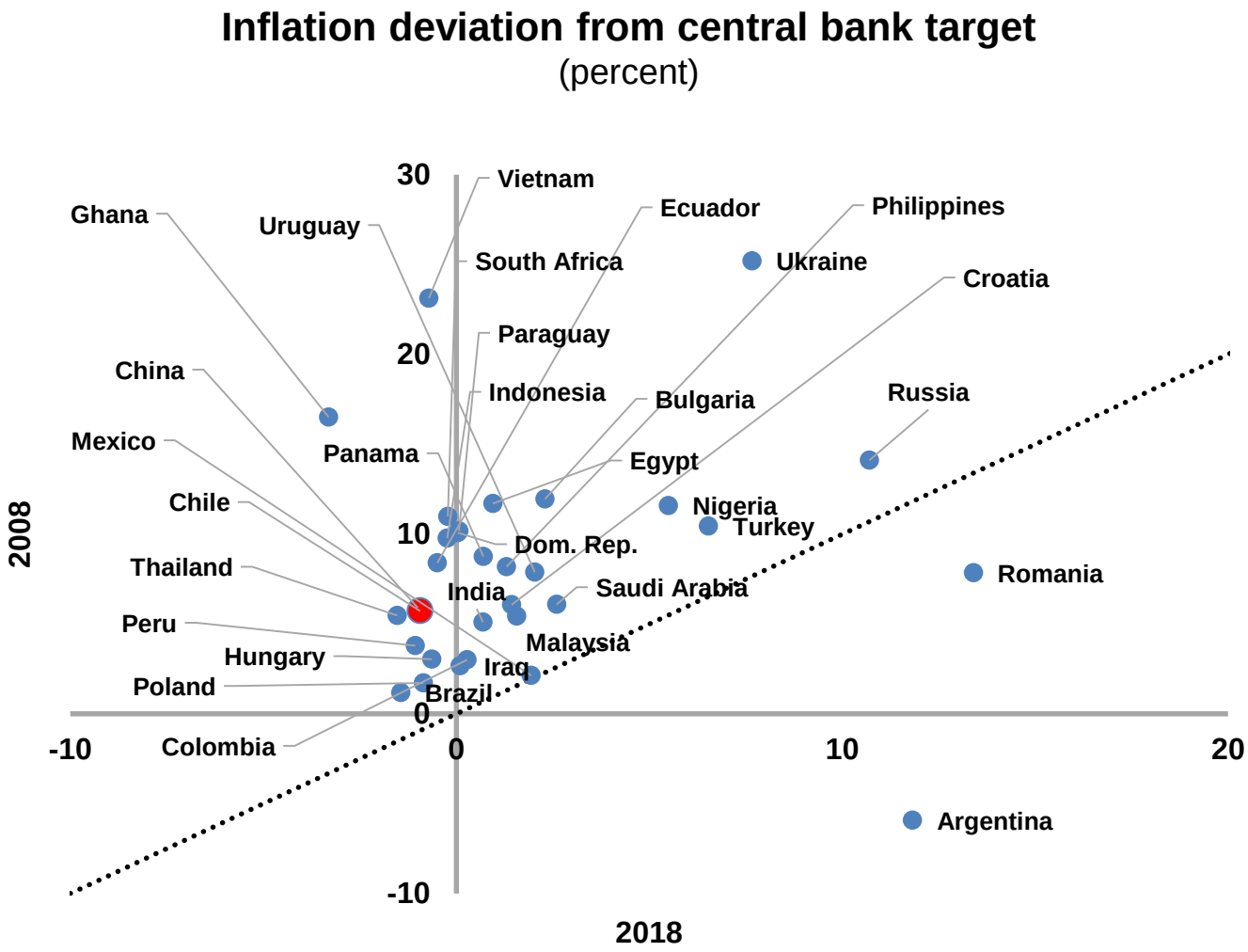
Vulnerabilities: Inflation

Inflation deviations are smaller than in 2008, giving EM central banks "gun power" to act in the event of a sudden stop



The loss of fiscal space, the disappearance of commodity windfalls and the expansion of flexible ER regimes increase the burden upon monetary policy in macro stabilization and shock-absorption

Source: Bloomberg and Reuters.

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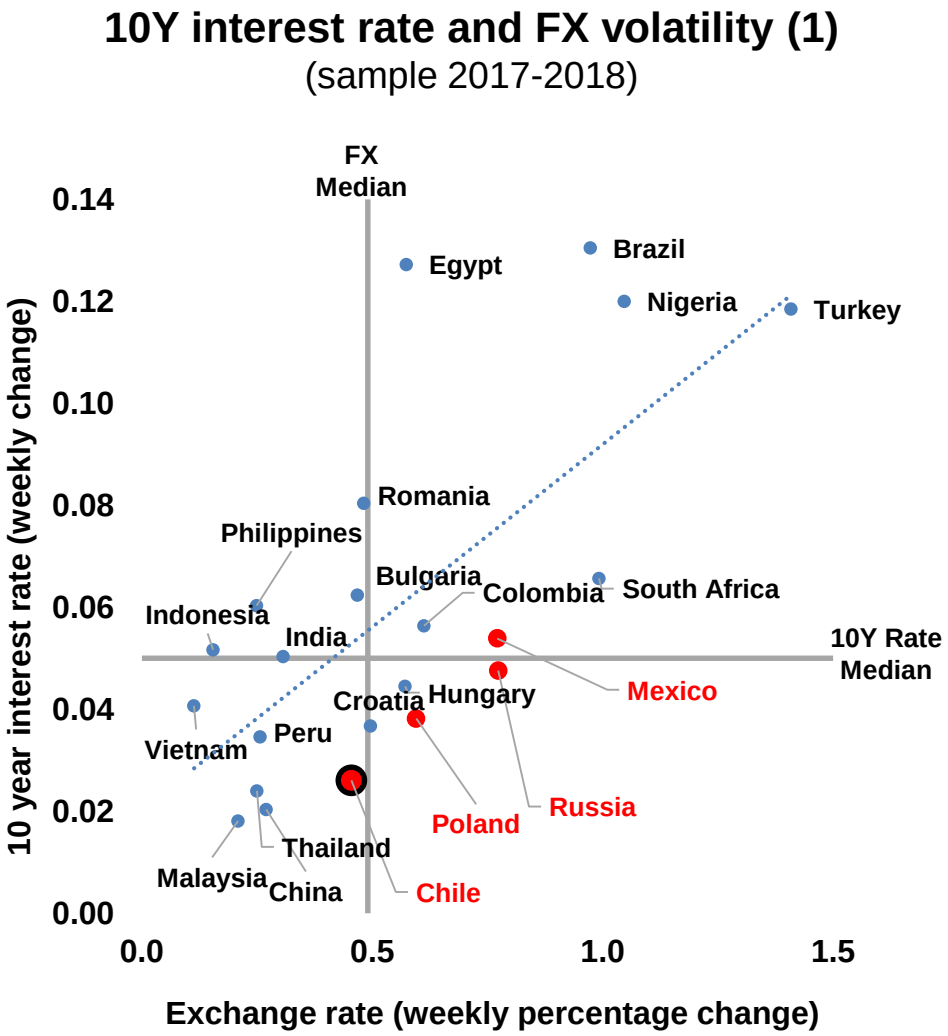
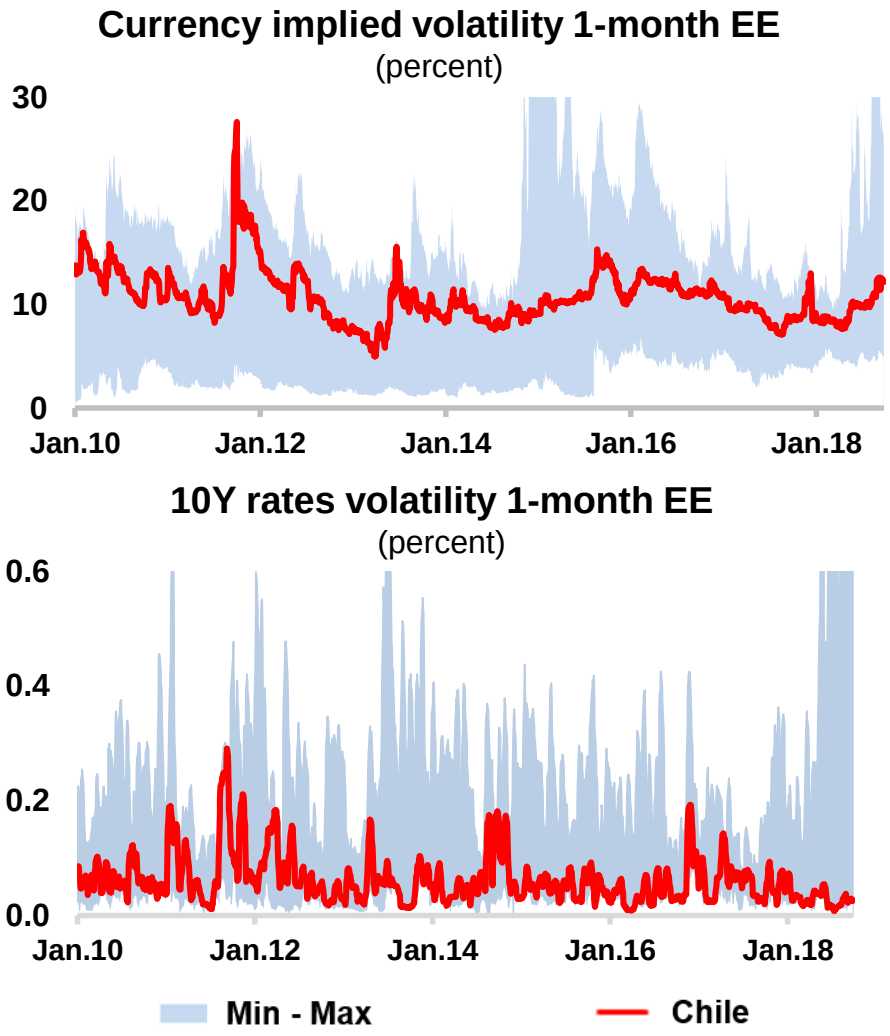
Vulnerabilities: FX regime

In Chile free floating FX regime helped contain the volatility of interest rates, protecting MP instrument from external conditions





(1) Red points correspond to economies with free floating FX regime according to IMF classification (Annual Report on Exchange Rate arrangements and Exchange Restrictions, 2017). Source: IMF and Bloomberg.

FX regime

For FX to operate as a shock absorber, the economy needs to be substantially hedged against FX risk

- *Financial exposure to FX risk:* Curtailing currency mismatches in government, business, and bank balance sheets through regulation and market mechanisms.

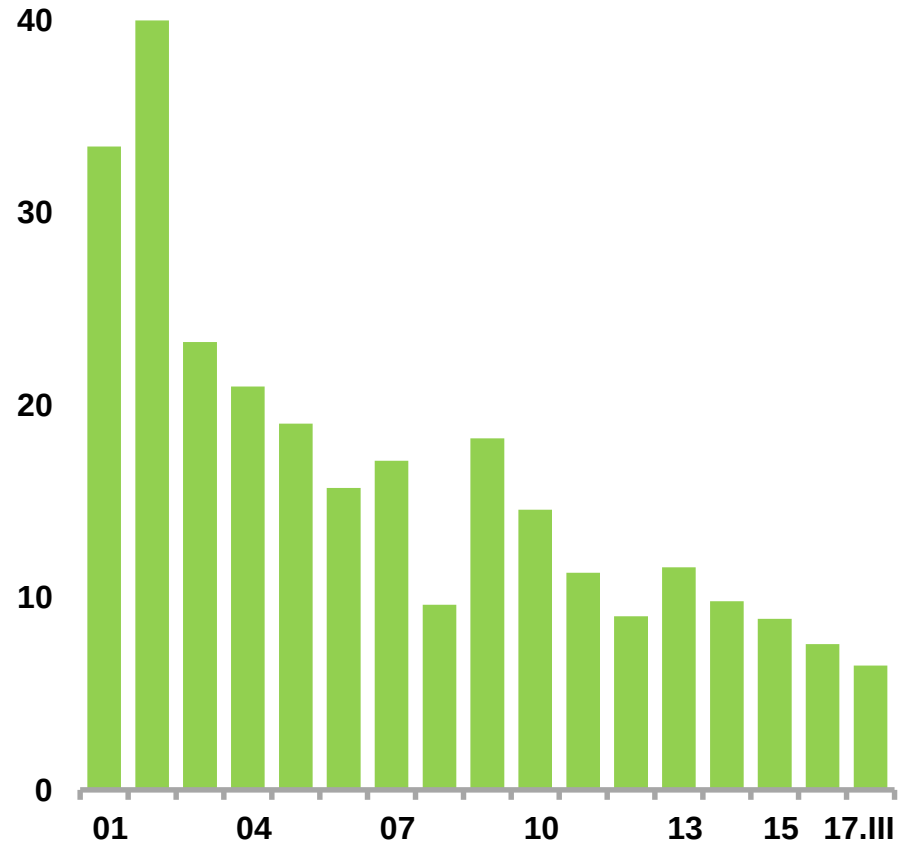
- A flexible FX regime also requires overcoming the *fear of floating* of monetary authorities. This is especially important given the pass-through of FX into domestic inflation.

- A deep and stable domestic long-term capital market is essential for containing the impact of external financial shocks on the flow of credit (a high propensity to save or forced savings through pension and insurance schemes).

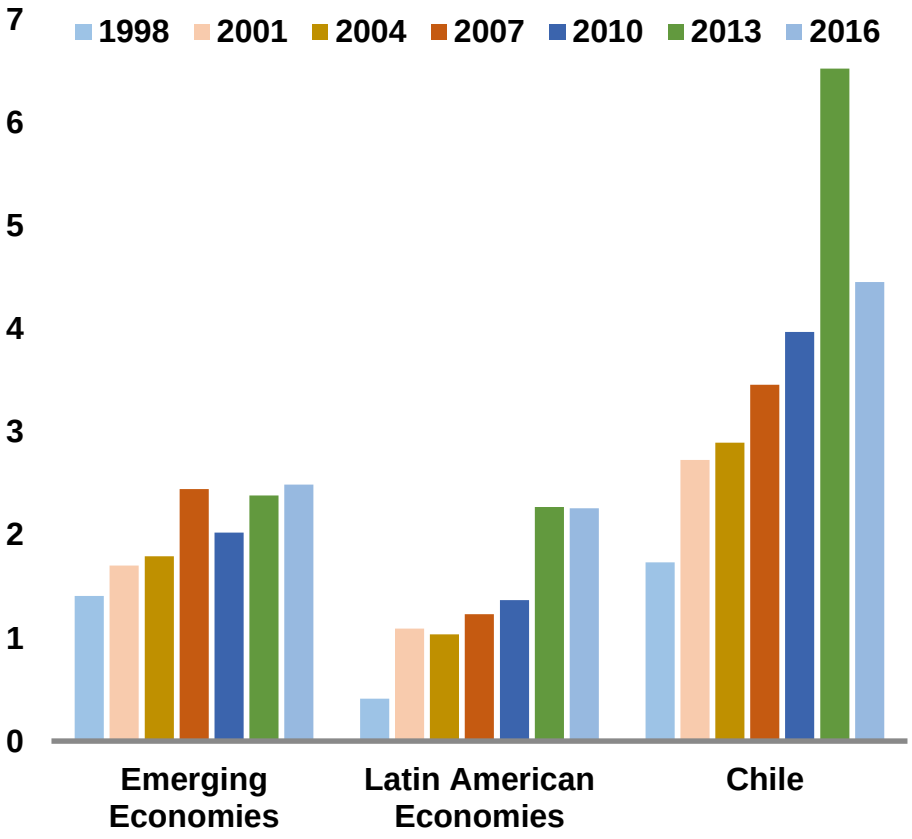
Vulnerabilities: Corporate external debt

FX hedging and the derivatives market

Currency mismatch over 10% in the corp. sector (1)
(percent of total assets)



Derivatives market activity
(annual transactions, percent of GDP)

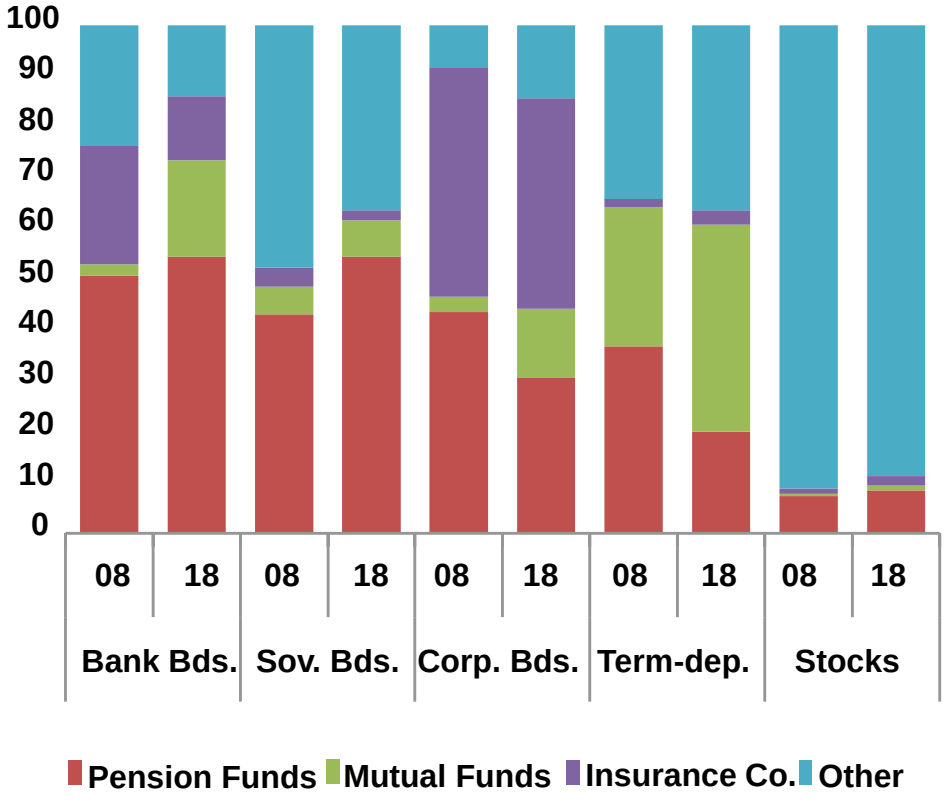


(1) Based on a sample of firms that report their balance sheet in pesos. Currency mismatch is the difference between foreign currency liabilities and foreign currency assets, less the net position in derivatives (the difference between buy and sell positions in derivatives contracts). Sources: WB, IMF, BIS and Central Bank of Chile, based on data from Financial Markets Commission (FMC).

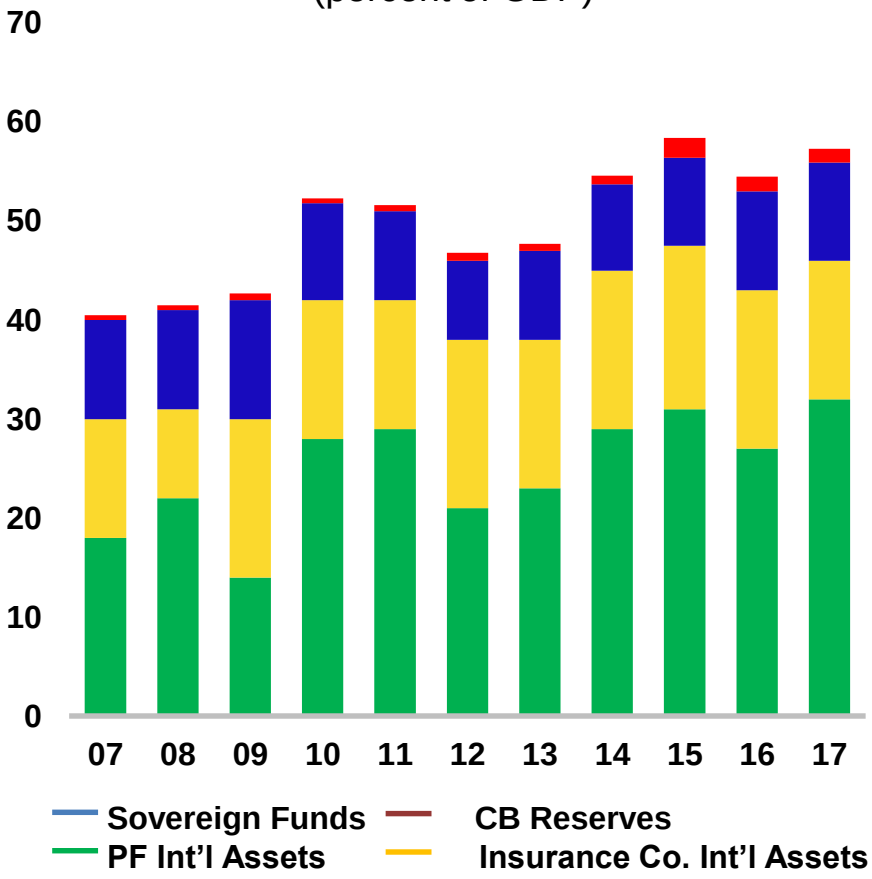
Vulnerabilities: Pension funds

Pension funds play a countercyclical role that help reduce volatility in financial markets

Main financial assets holders
(percent)



Chile's international assets
(percent of GDP)



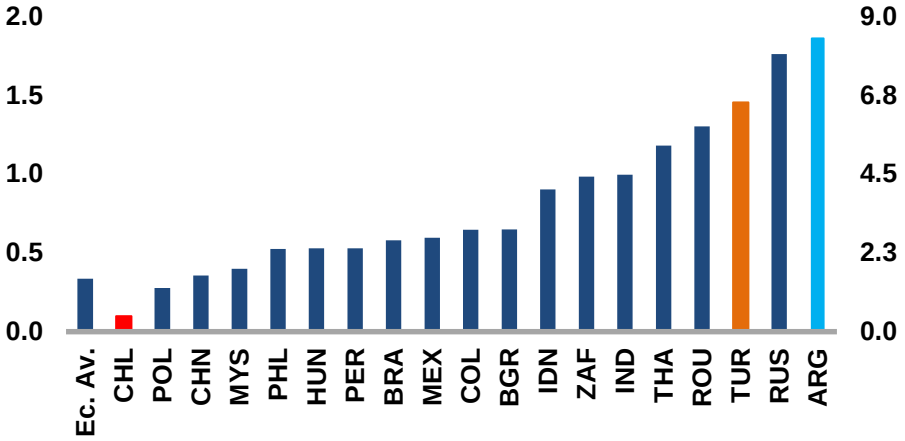
Sources: Superintendence of Pensions.

Vulnerabilities: Inflation expectations

Well anchored inflation expectations, allowing monetary policy to smooth business cycles and overcome fear of floating

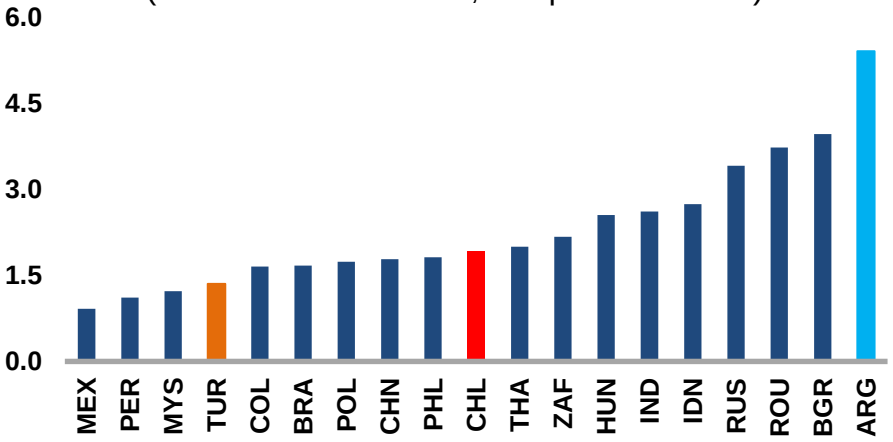
Long-term expectation deviation from target

(percent, sample 2004-2017)



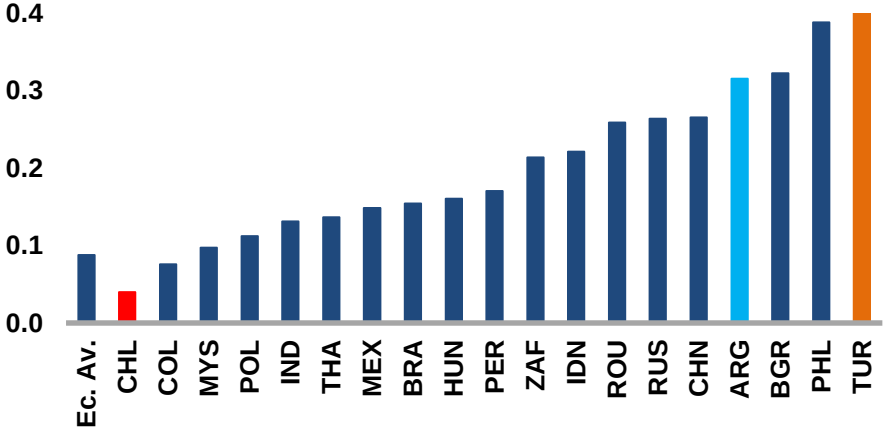
Inflation volatility

(SD of annual variation, sample 2004-2017)



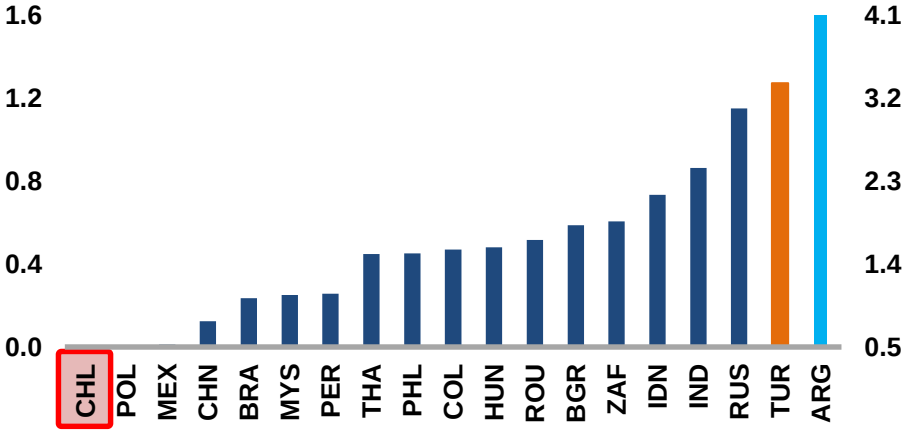
Long-term expectation sensibility inflation surprises

(percent, sample 2004-2017)



Long-term inflation expectation volatility (1)

(SD of annual variation, sample 2004-2017)



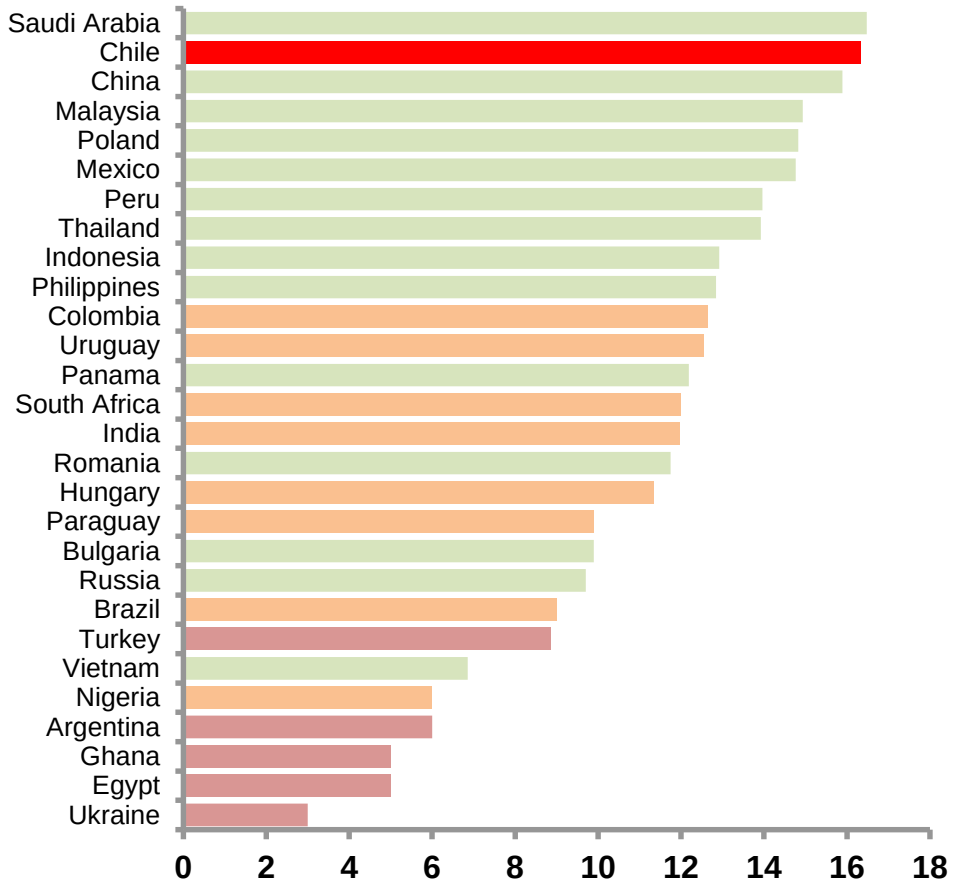
(1) 5-year forecast. Source: IMF and Central Bank of Chile.

Banking sector

Risks on the banking sector are low compared to other countries

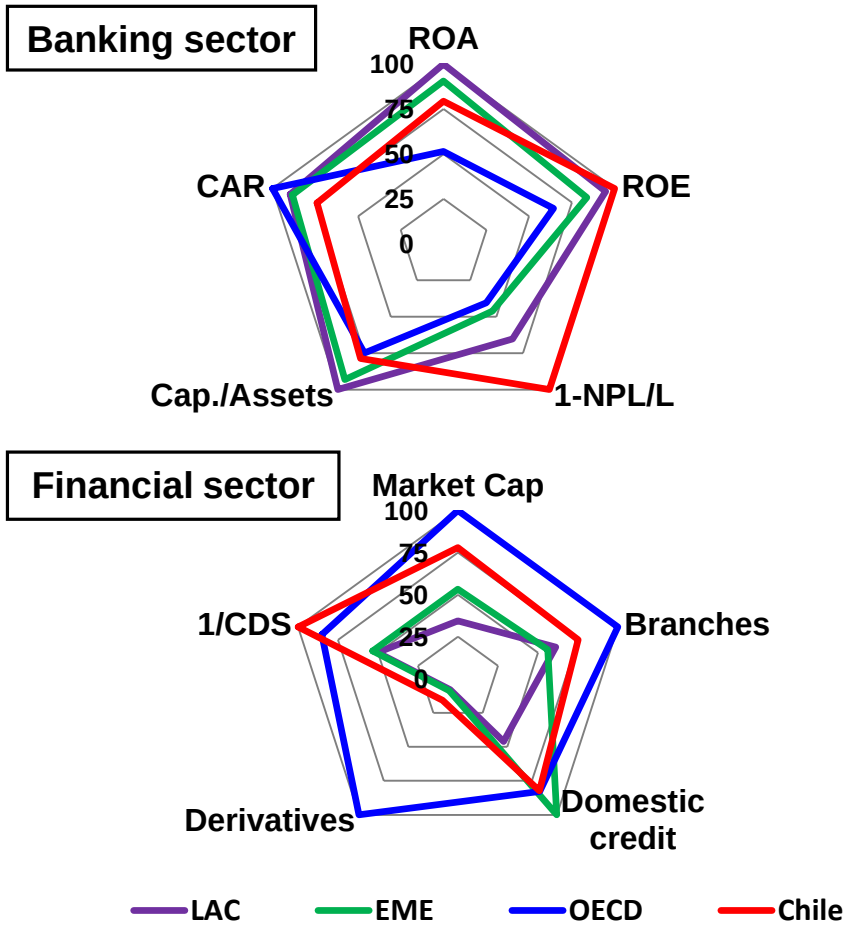
Bank Financial Strength Index

(percent, Moody's wgt average long-term banks rating)



Chilean financial development (1)

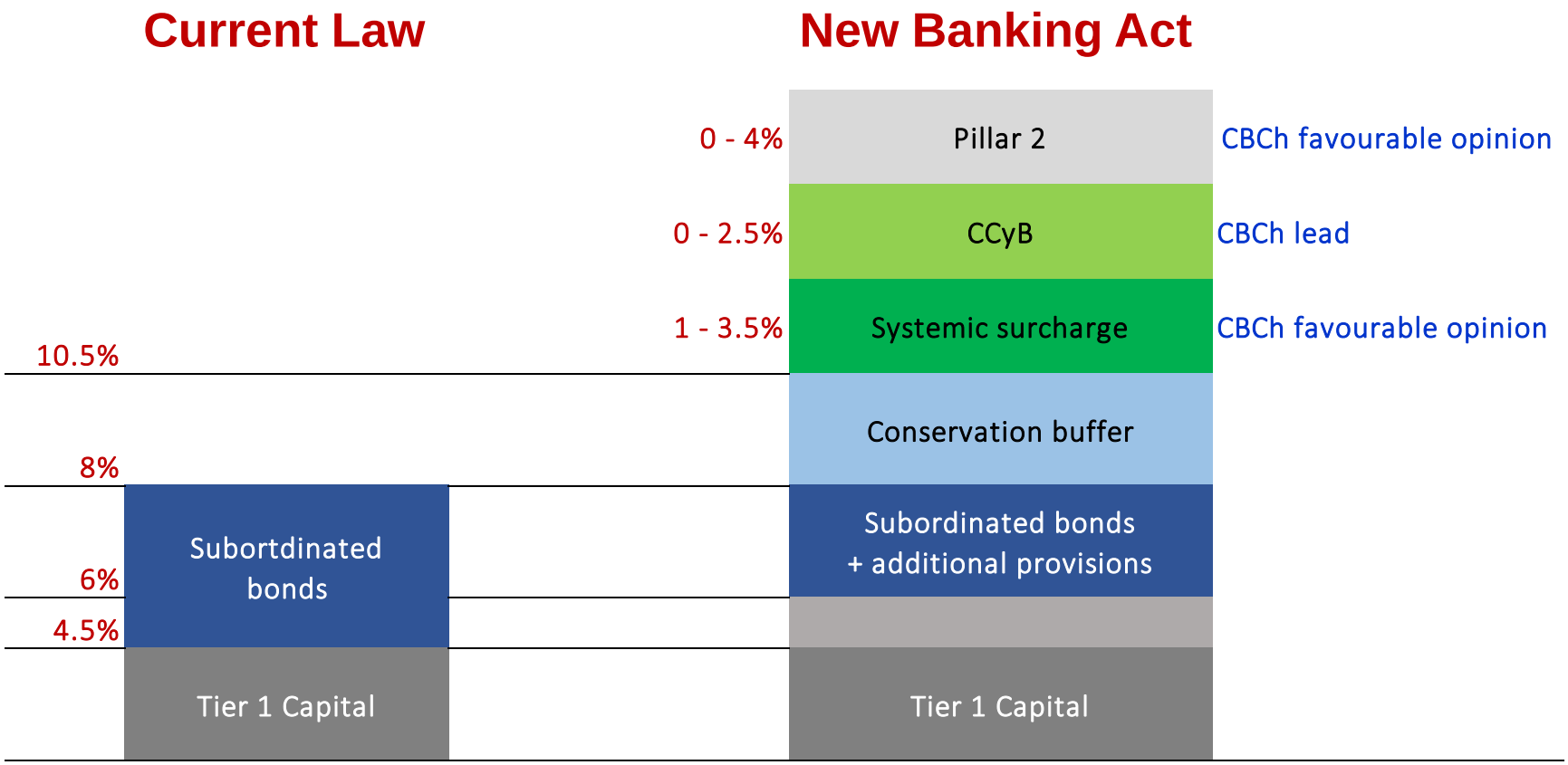
(relative percent)



(1) Data are relative to the maximum on each dimension at the end of 2016 or to the latest availability. Sources: Moody's and Central Bank of Chile based on information from BIS, WB, IMF and Bloomberg.

The role of the financial sector

The New Banking Act will upgrade the bank solvency requirements to those of Basel III



Sources: Central Bank of Chile and Superintendence of Banks and Financial Institutions (SBIF).

Issues for discussion

1. The evolving path of monetary policy normalization
2. How vulnerable are EMs to global market conditions?
3. Why is the Chilean economy so resilient?
4. Exchange rate flexibility, monetary policy and financial markets
5. Concluding remarks

Concluding remarks

- Ten years after the GFC, central banks of AE are still in the process of adjusting their monetary policy stance. Policy decisions, especially in the US, are making the normalization process more uneven and uncertain than originally envisaged by major central banks

- Emerging economies are exposed to changes in market sentiment. Some have suffered already but overall, volatility is still contained and markets have been able to discriminate across EMs. So far, idiosyncratic features seem to dominate

- Still, ER volatility is likely to continue and more and deeper risk-off episodes may lie ahead. At times like these, both investors and authorities should be able to look beyond conventional indicators to assess countries´ financial strengths and weaknesses

- Macro fundamentals remain as important as ever. Debt composition and structure may be as important as size. The same applies to reserves. The macro policy framework may signal additional sources of vulnerability or resilience

Concluding remarks

- The ER regime is a crucial component of the macro policy framework of EMs. A floating ER has proven effective in cushioning external shocks when implemented by a credible central bank
- Yet central bank credibility does not grow overnight and may need to pass the fear of floating test. Over time this translates into lower pass-through and more stable domestic interest rates
- A flexible ER regime is more effective as a shock absorber the lower the FX exposure of key economic agents. An efficient, deep and well regulated financial market should be able to prevent undue FX mismatches and to provide risk-hedging products
- Floating countries may experience as much FX volatility as others. What makes a difference is the ability to reasonably insulate the domestic financial market and protect monetary policy autonomy. Currency volatility is not a measure of country vulnerability

Bank of Thailand – OMFIF High-level Seminar

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Session I: "Navigating Normalization"

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