



Facing the Tides: Managing Capital Flows in Asia

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Key takeaways

- Impact of capital flows on exchange rate is a central challenge for many Asian economies
- Exchange rate could be a shock amplifier rather than a shock absorber in the presence of domestic financial frictions
- Asian EMEs respond using multiple instruments for multiple objectives in ways that deviate from traditional policy frameworks

Roadmap

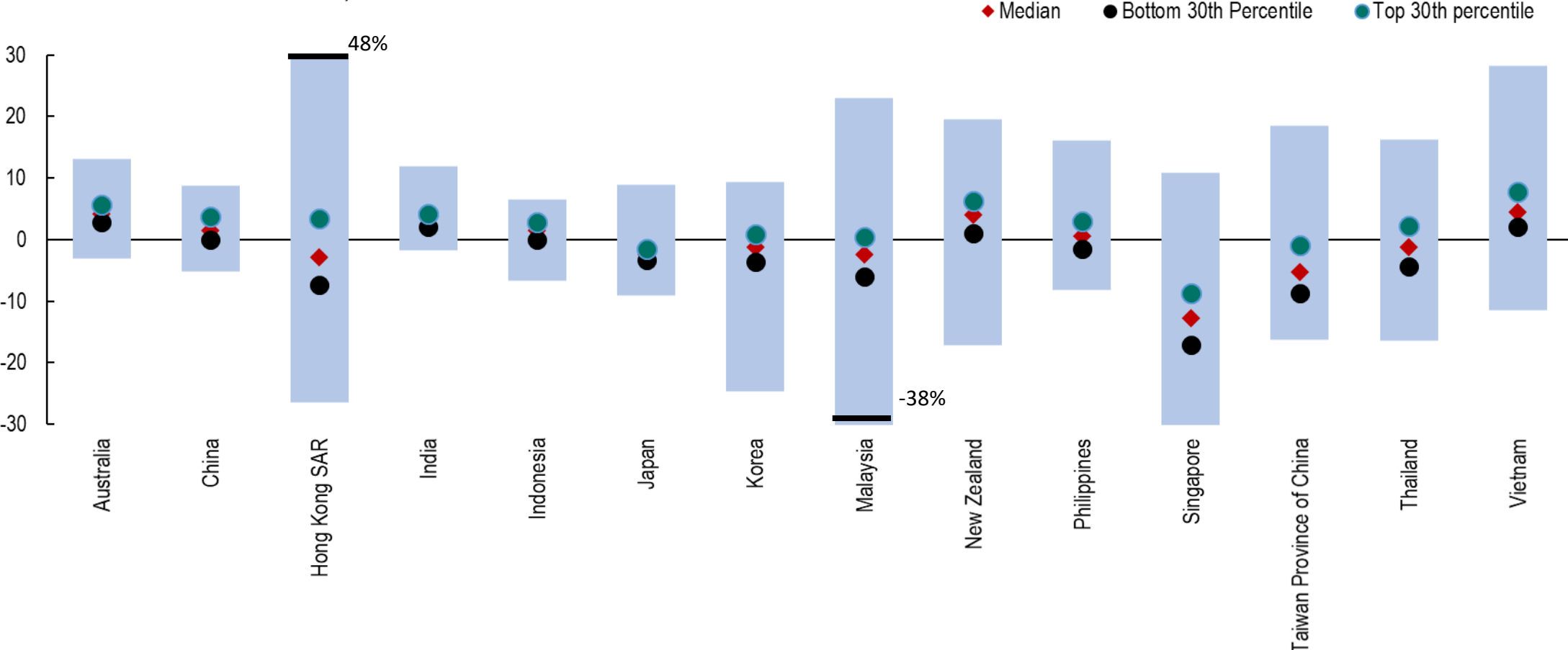
- Challenges from Capital Flows and Exchange Rate Fluctuations
- Policy Responses to Capital Flows
- Potential Costs of Policies

Challenges from Capital Flows and Exchange Rate Fluctuations

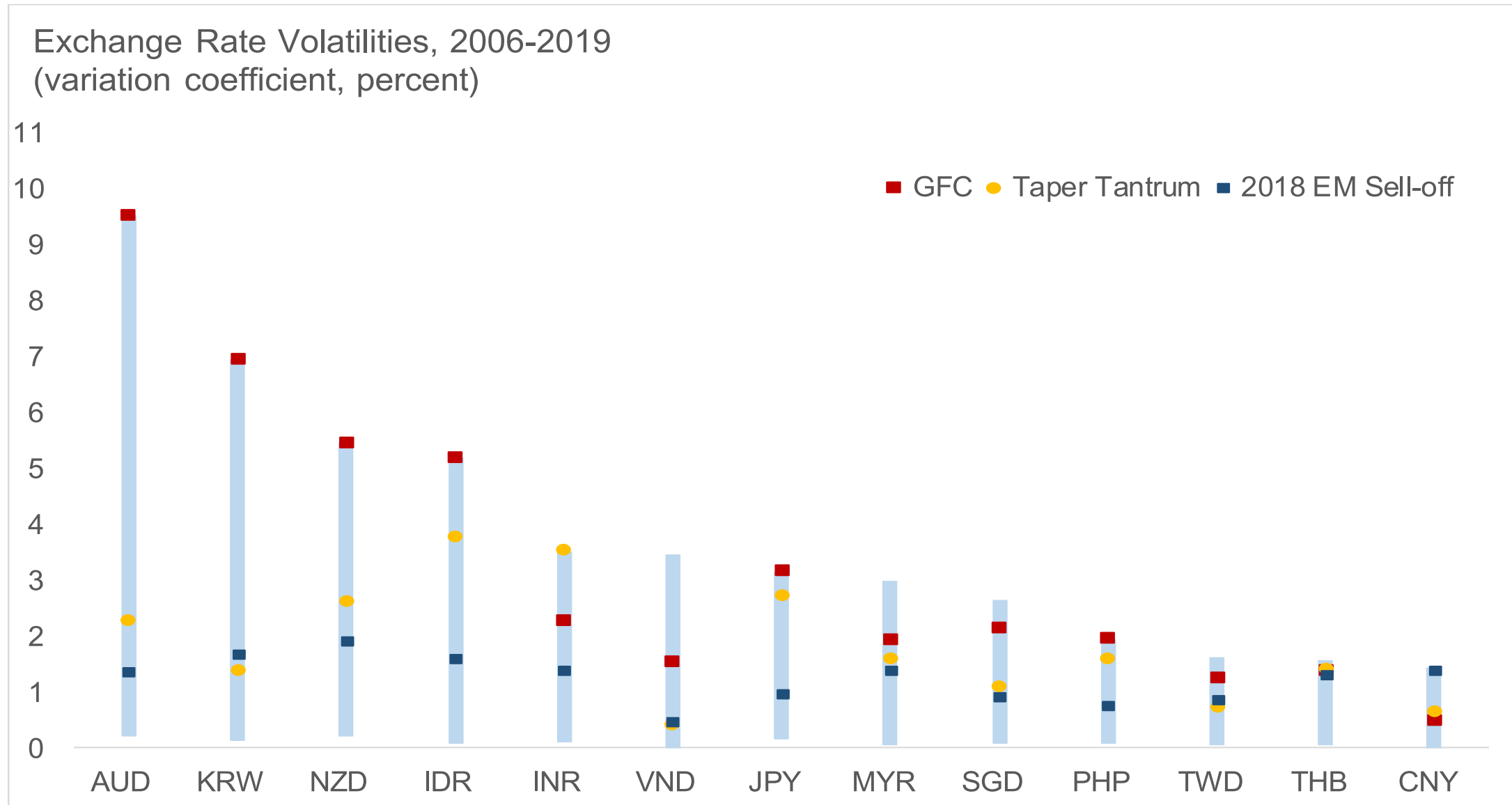
Capital flows can be large for a country to absorb...

Total Net Nonofficial Inflows to Asia: Descriptive Statistics

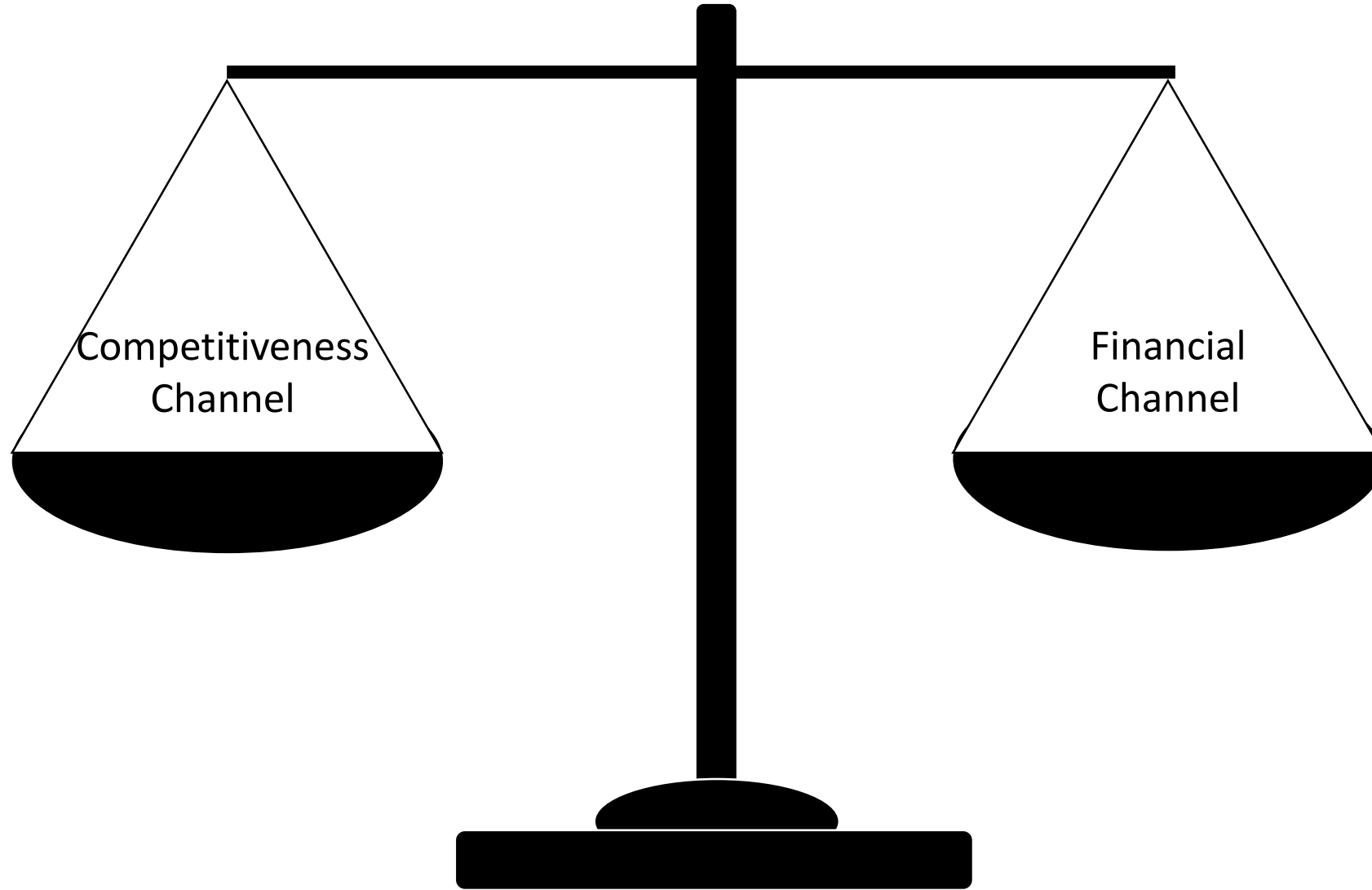
(percent of GDP; 2000Q1-2018Q4)



... and affect exchange rate volatility

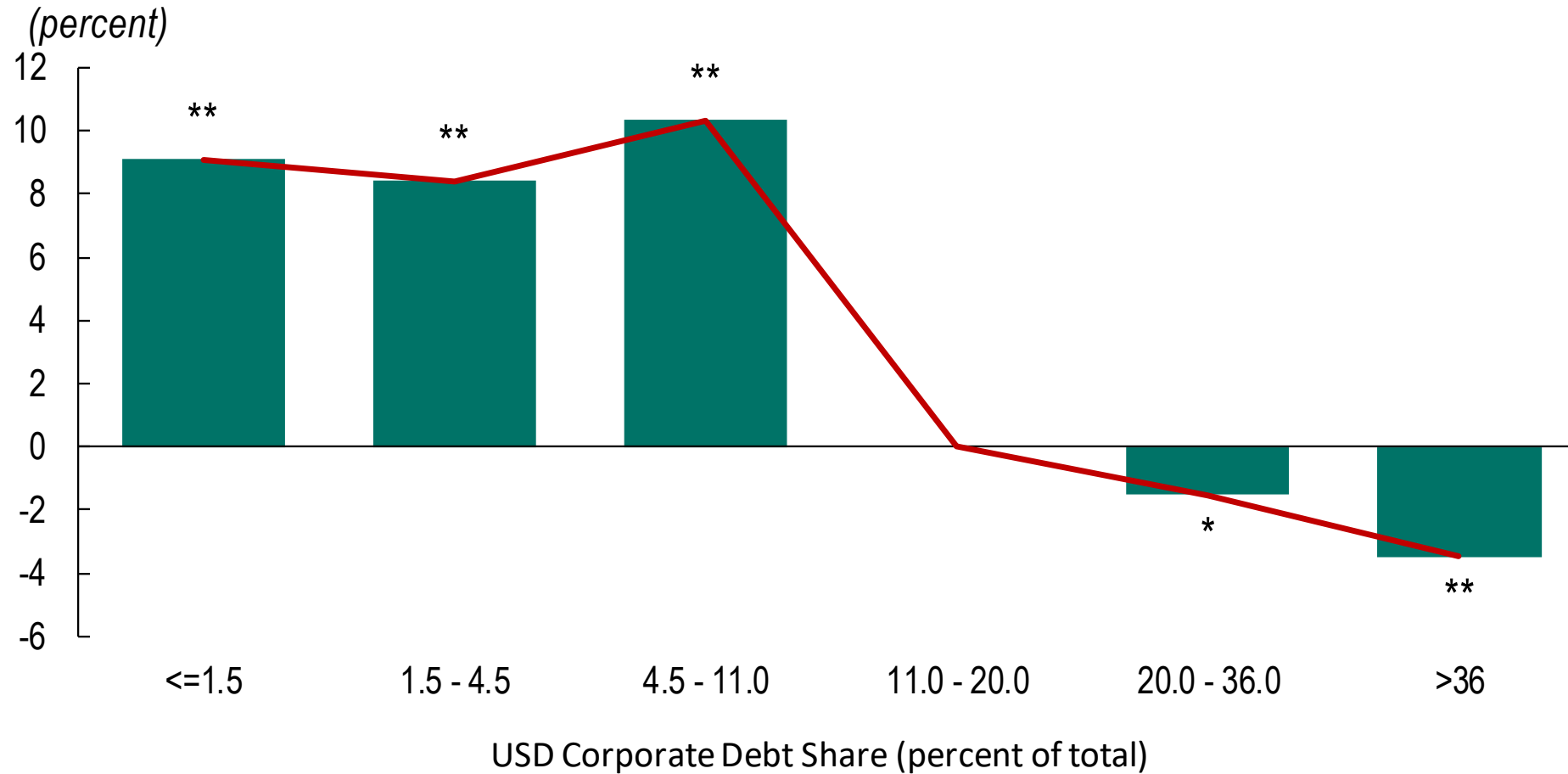


Impact of Exchange Rate Fluctuations



A depreciation in Asian EMEs can be a shock amplifier

Impact of a 10 percent exchange rate depreciation on investment at the firm level

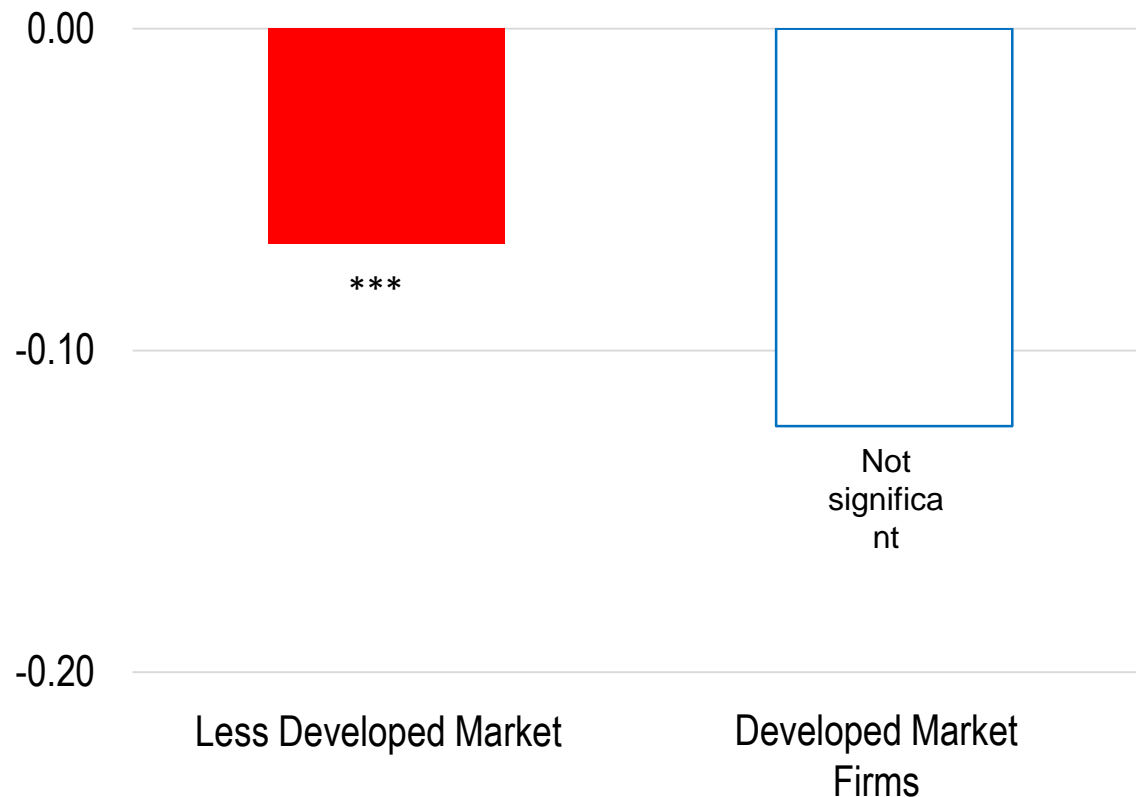


Source: IMF staff estimates.

Note: Dataset includes 1500 firms across 12 Asian economies, mainly EMEs. Time frame for the analysis is from 1994-2016.

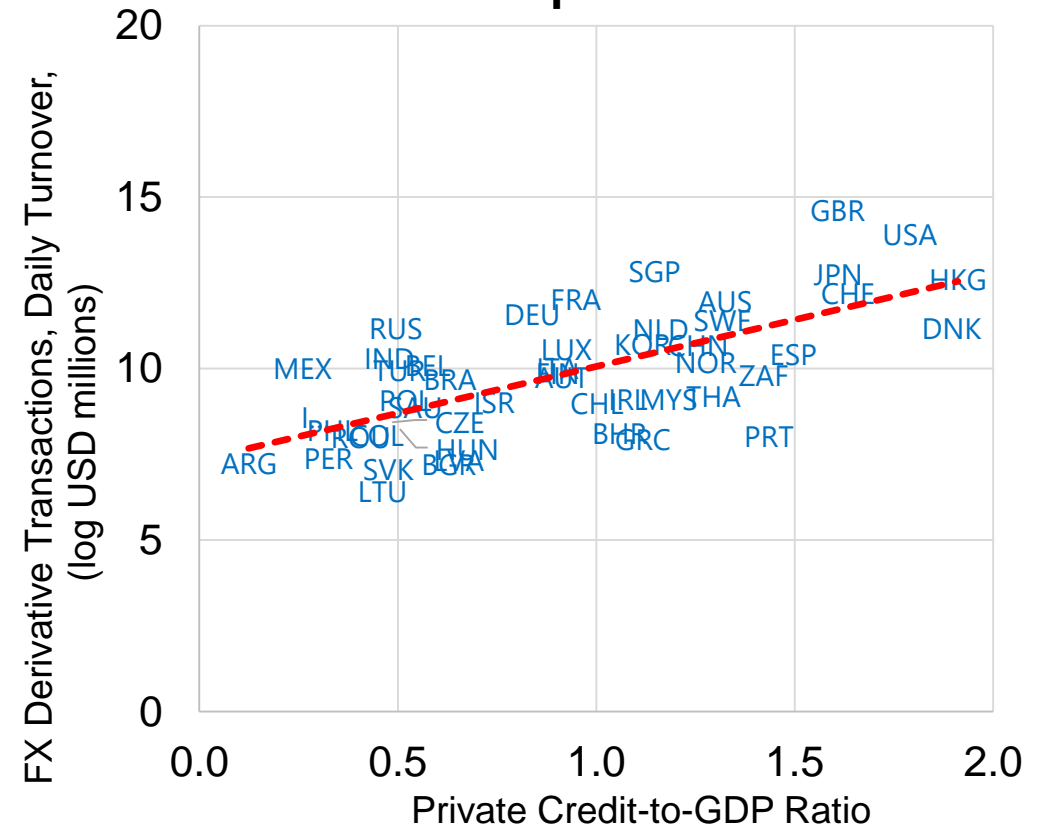
But financial development matters

Impact of Exchange Rate Depreciation on Investment Through Financial Channel
(percent)



Note: The bars represent the estimated coefficient for real exchange rate

FX Hedging and Financial Development

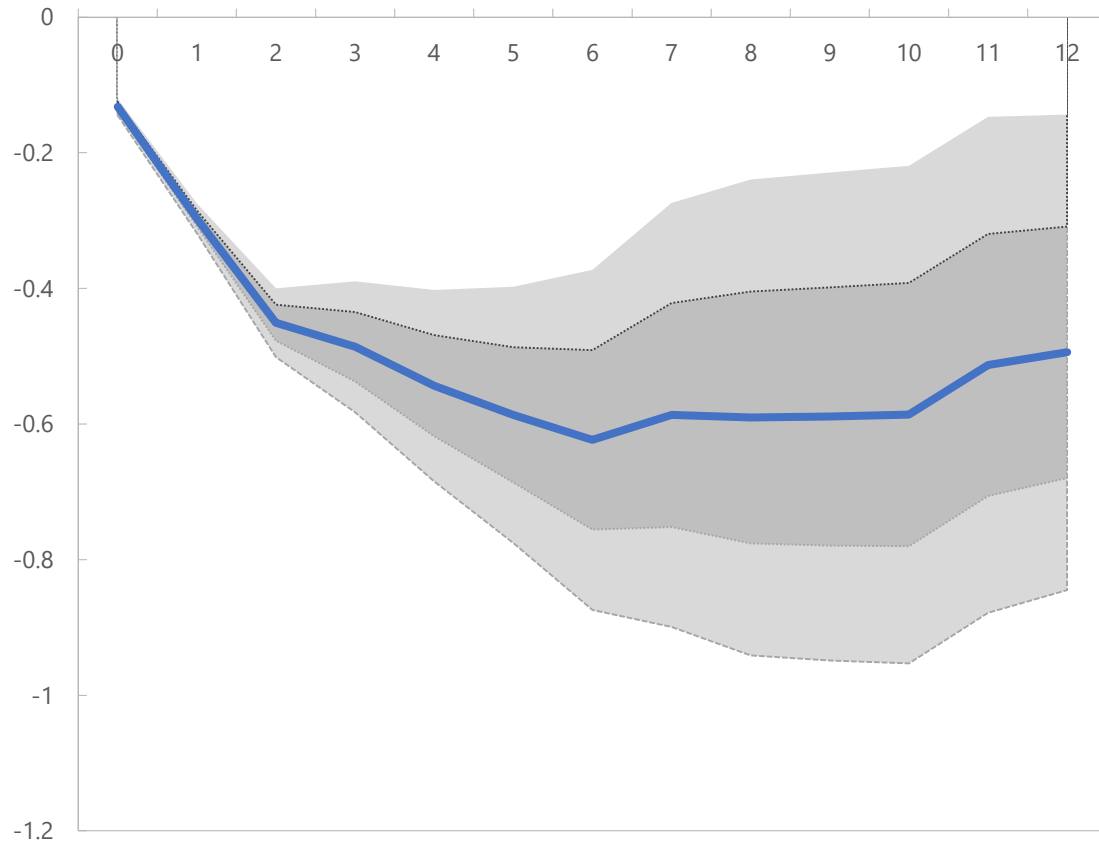


Source: Bank of International

Impact of exchange rate depreciation on investment is higher in Asian EMEs...

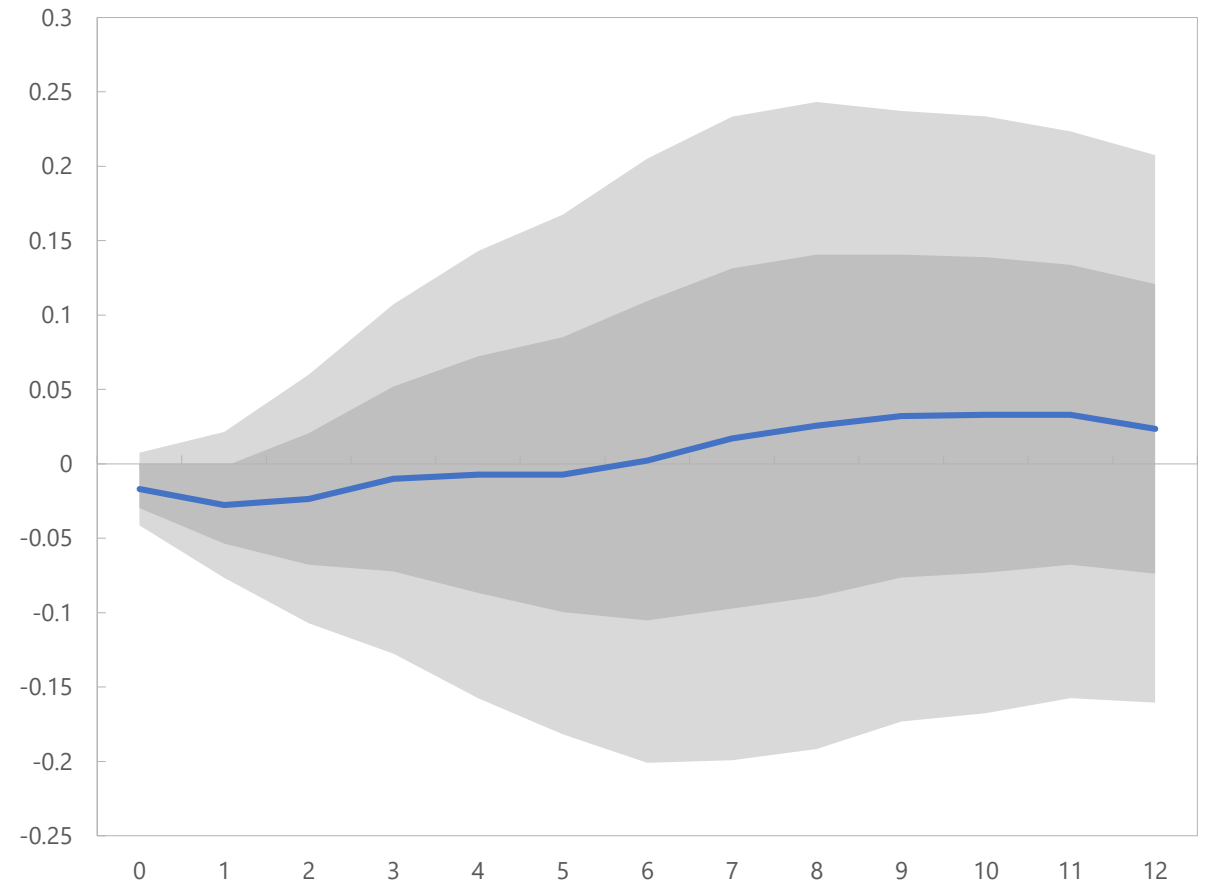
Impact of Exchange Rate depreciation on Investment/GDP, EMEs

(percent)



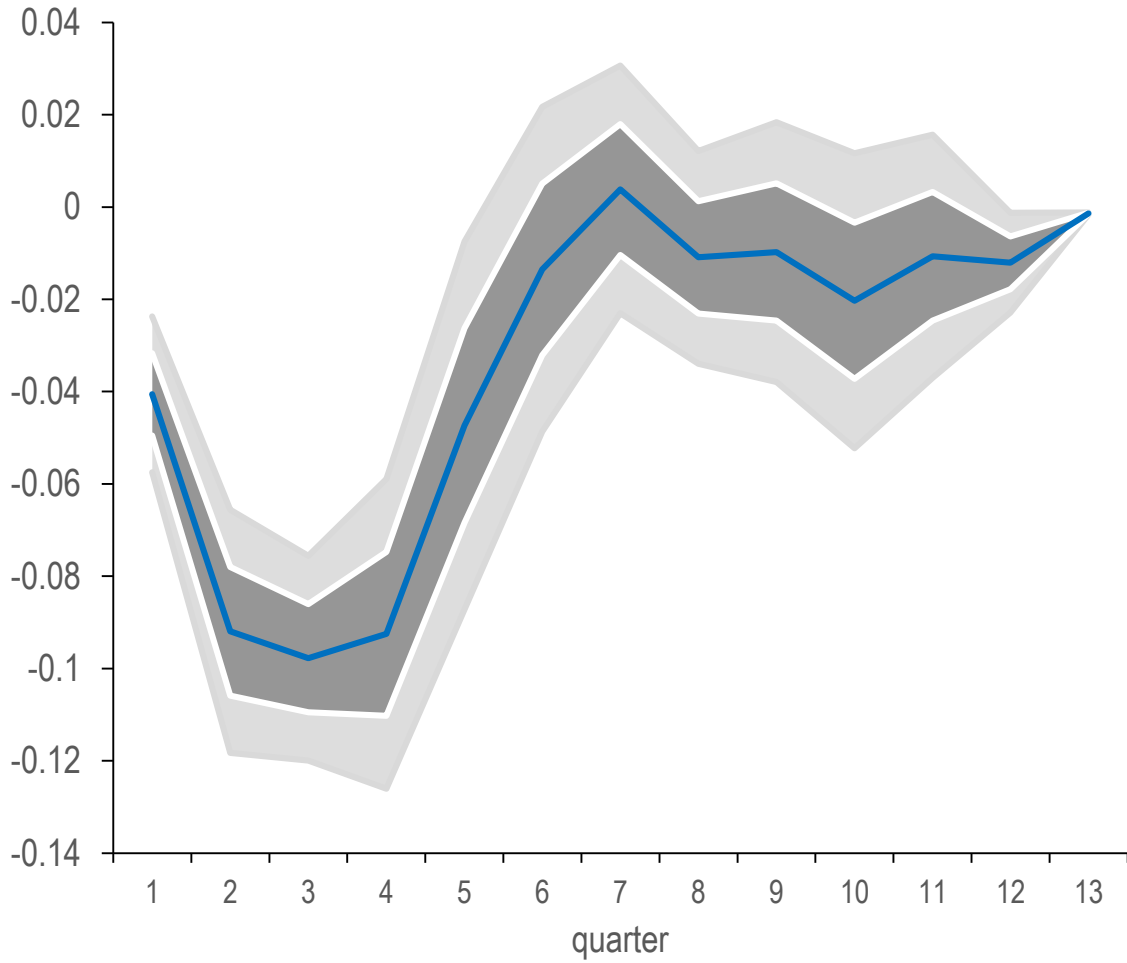
Impact of Exchange Rate depreciation on Investment/GDP, AEs

(percent)

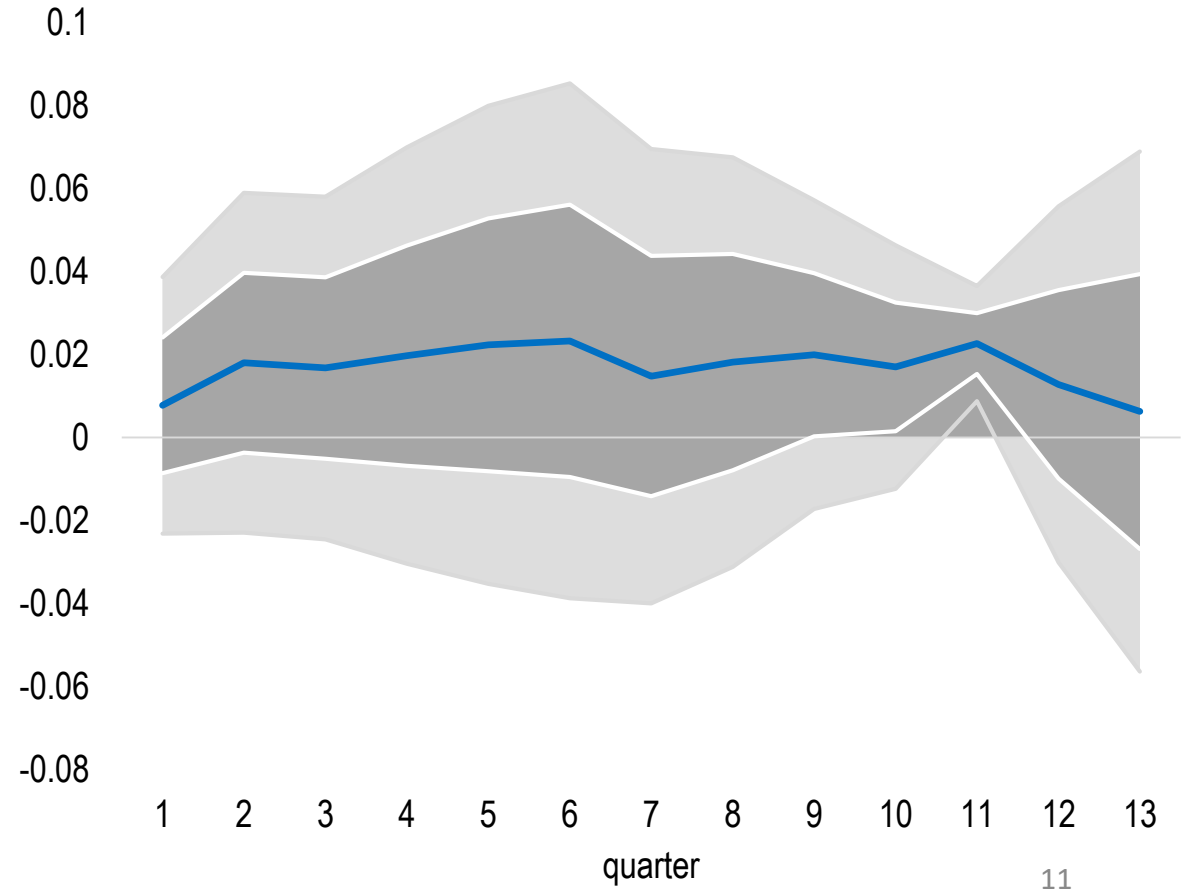


...but is less persistent on GDP

Impact of exchange rate depreciation on real GDP growth, EMEs
(percent)

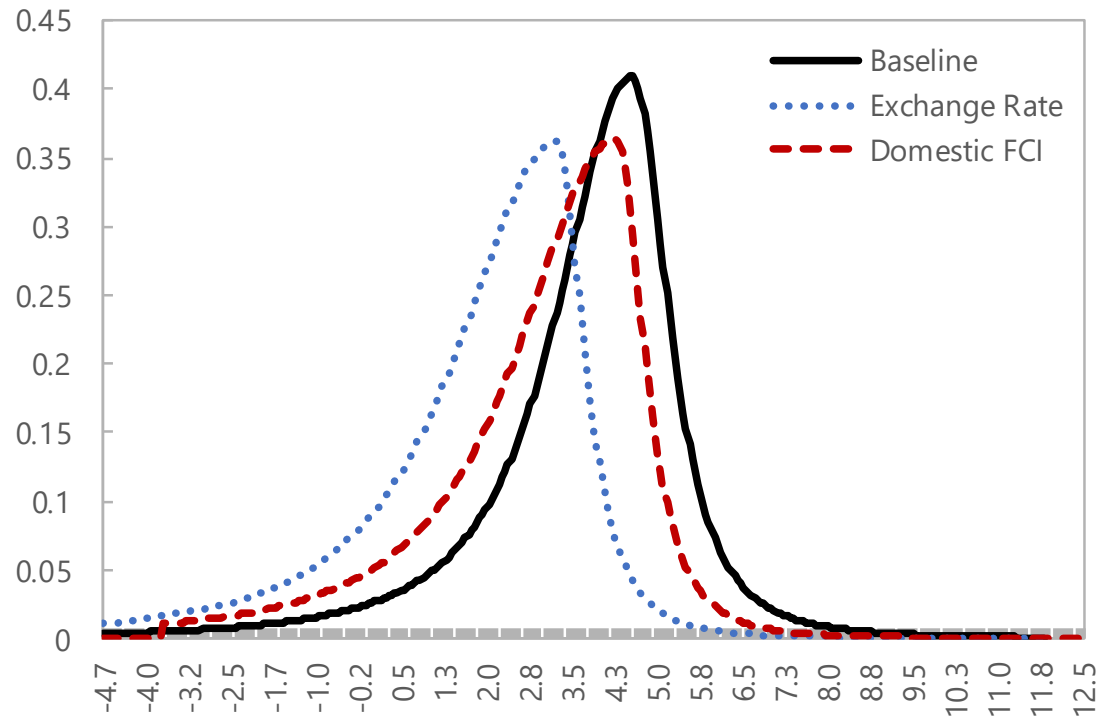


Impact of exchange rate depreciation on real GDP growth, AEs
(percent)

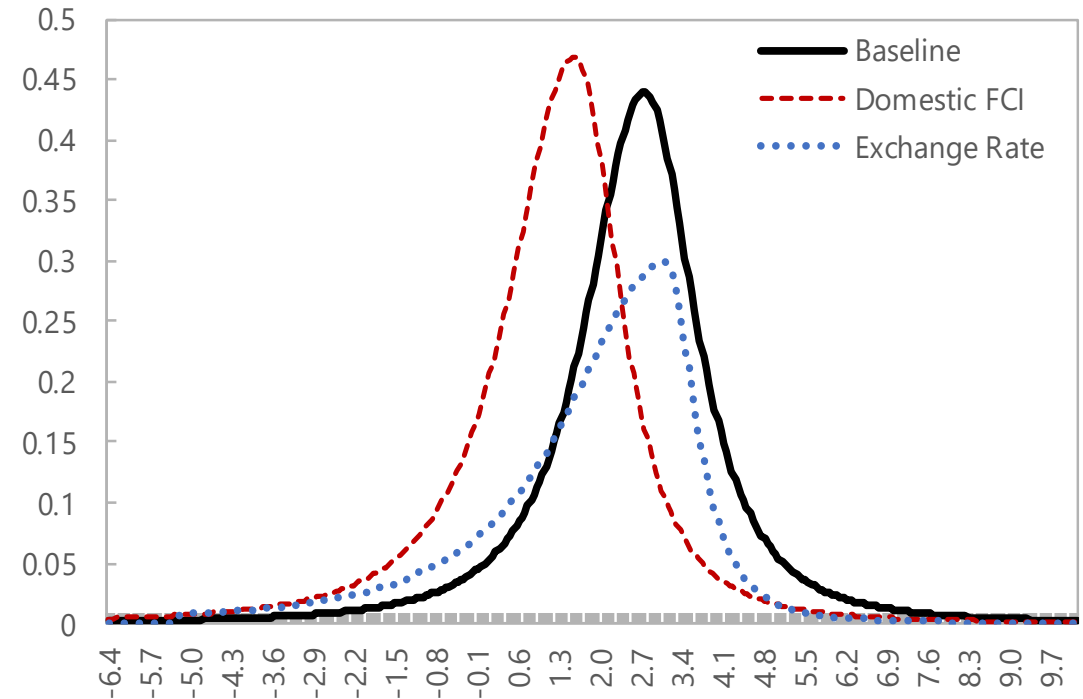


Exchange rate is a stronger driver of growth distributions in Asian EMEs with shallow financial markets

Shallow financial markets

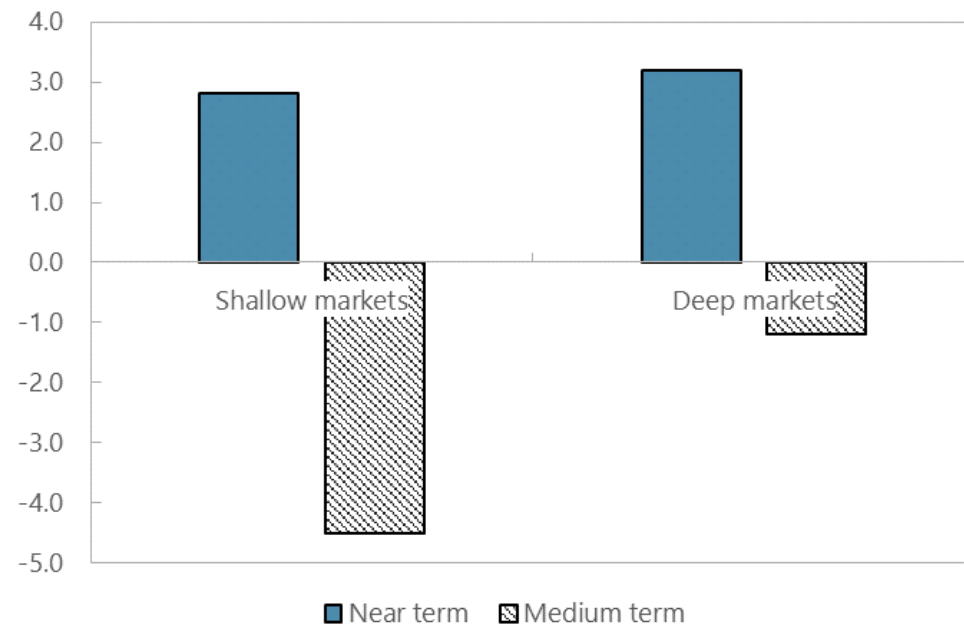


Developed financial markets

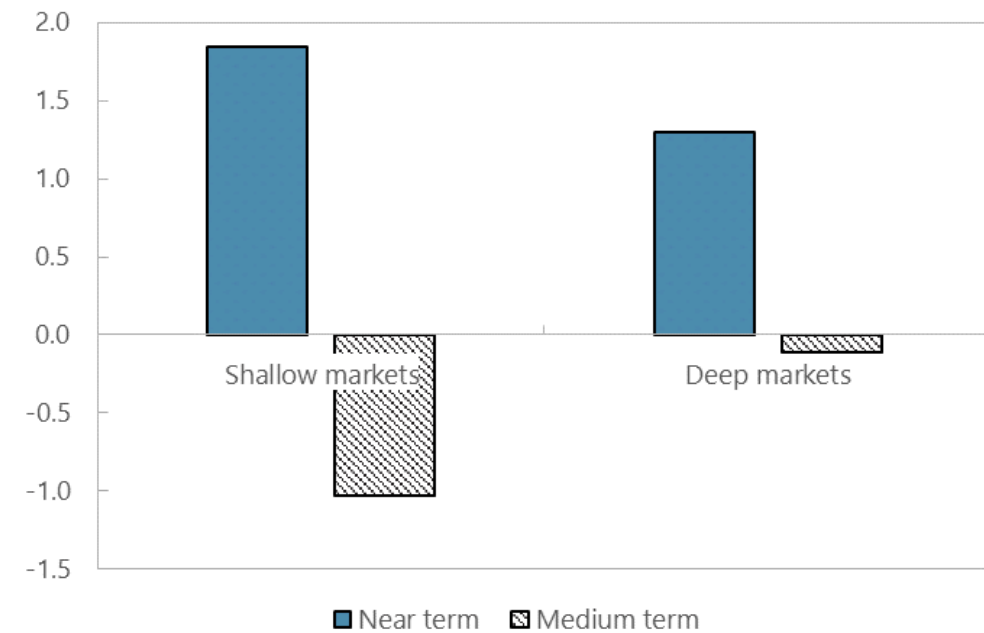


The short and medium-term impact of FX and FCI shocks on the growth distribution differ

1 SD shock to the Exchange Rate



1 SD shock to the Domestic FCI



Note: These charts plot changes in the 5th percentile of the estimated growth distribution (GAR5%) in response to favorable exchange rate and domestic financial conditions index (FCI) shocks. A positive bar shows GAR5% increased, that is, the distribution has shifted to the right.

Summing up: Why do Asian EMEs care about the exchange rate?

- Capital flows and exchange rate fluctuations can be disruptive owing to a strong financial channel
- The extent of corporate FX liabilities and financial development can significantly influence the impact of exchange rate shocks
- These features may affect how Asian EMEs policymakers respond to shocks

Policy Responses to Capital Flows

Estimating Policy Reaction Functions

Monetary Policy
and FXI

$$Y_{it} = \alpha + \beta KF_{it} + \sum_{j=1}^J \delta_j Z_{jt} + \sum_{k=1}^K \gamma_k X_{kit} + \mu_i + \varepsilon_{it}$$

MPMs

$$\Pr(\text{Policy change} = 1)_{it} = F(\alpha + \beta KF_{it} + \sum_{j=1}^J \delta_j Z_{jt} + \sum_{k=1}^K \gamma_k X_{kit} + \mu_i + \varepsilon_{it})$$

KF_{it} : net capital flows, in percent of GDP.

Z_{jt} : global factors (VIX, commodity prices, US interest rates)

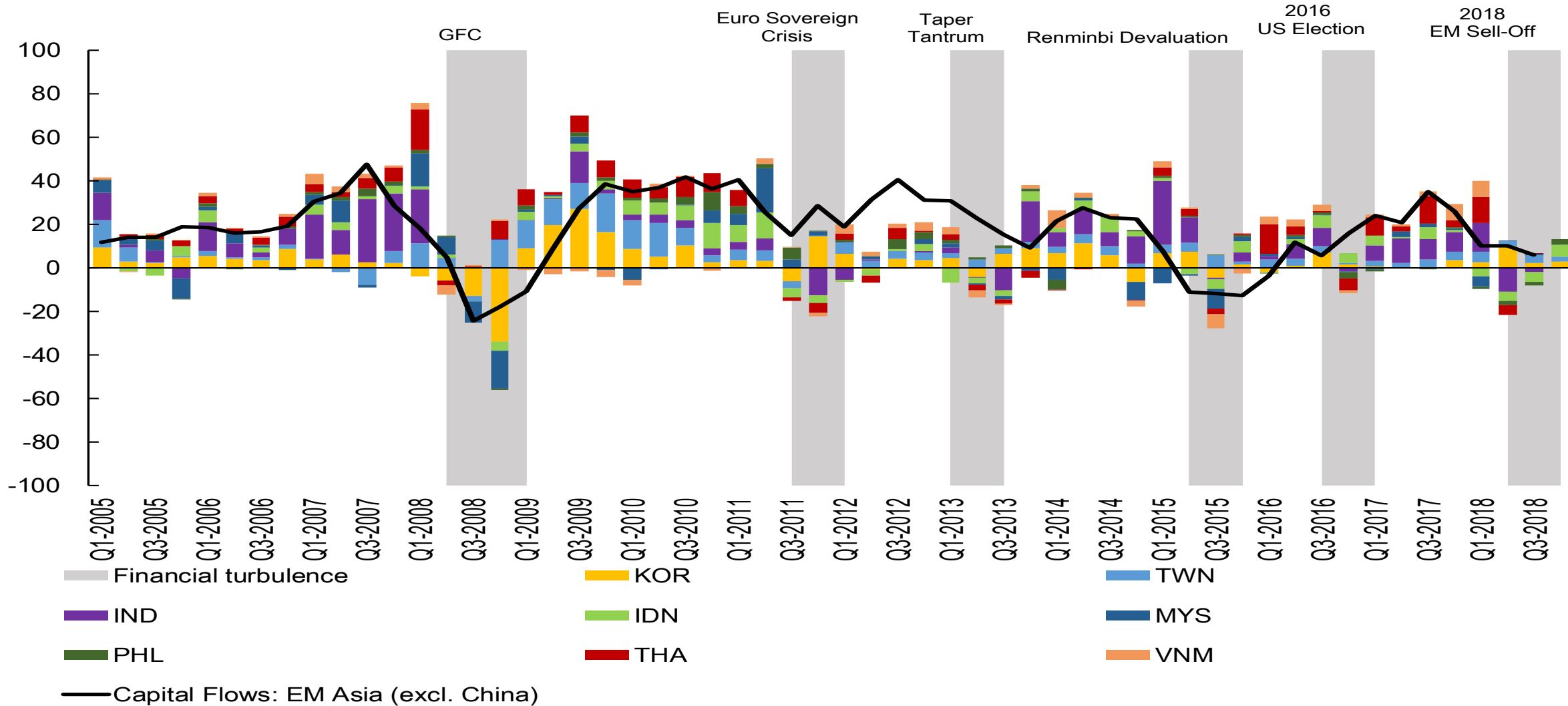
X_{kit} : domestic control variables (the output gap, inflation, currency appreciation, etc.)

Note: Countries included in the analysis are Australia, New Zealand, Japan, Korea, Taiwan POC, Hong Kong SAR, Singapore, China, India, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. Period: 2000Q1-2018Q4

Asian EMEs relied on FXI to respond to capital flows

Foreign Exchange Reserve Flows (EM Asia ex China)

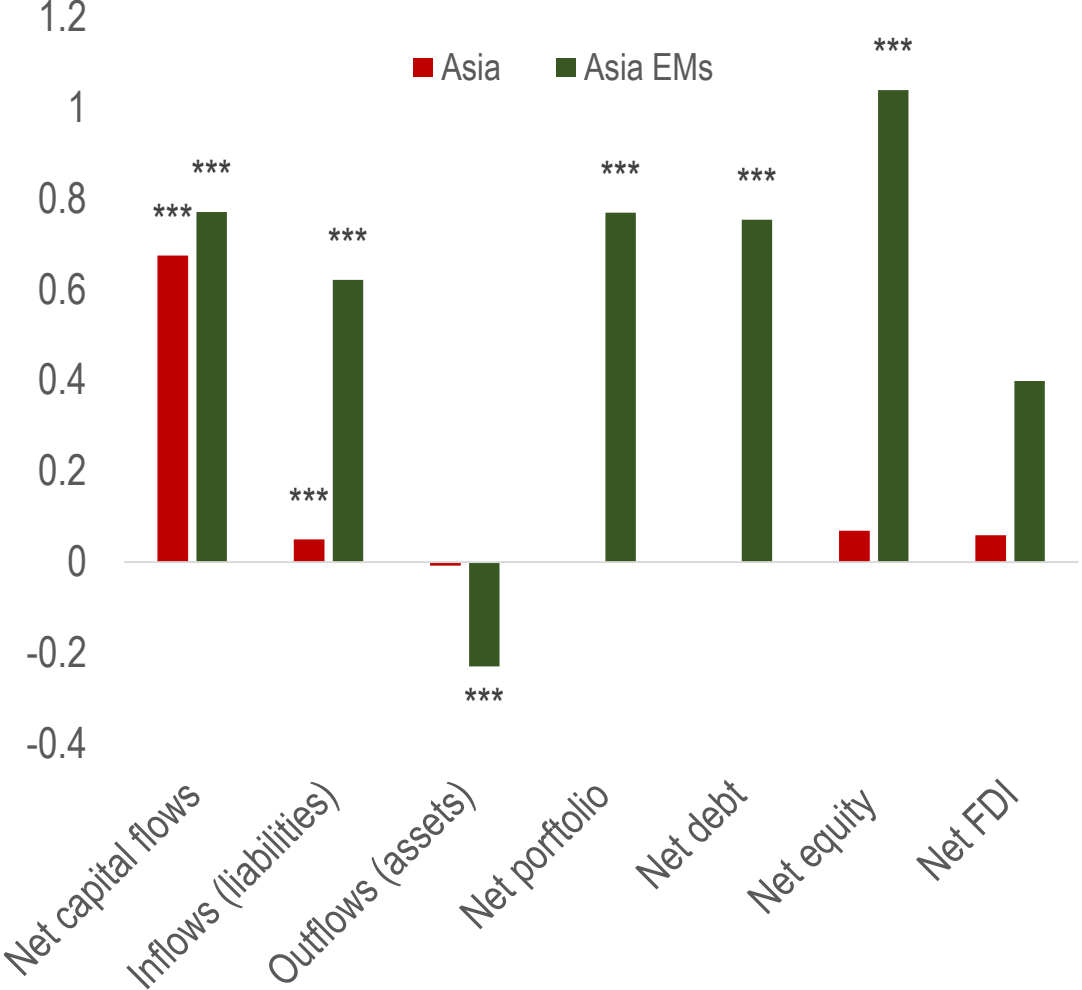
(USD billions, four-quarters moving average)



FXI is used for volatile capital flows especially when FX debt is high

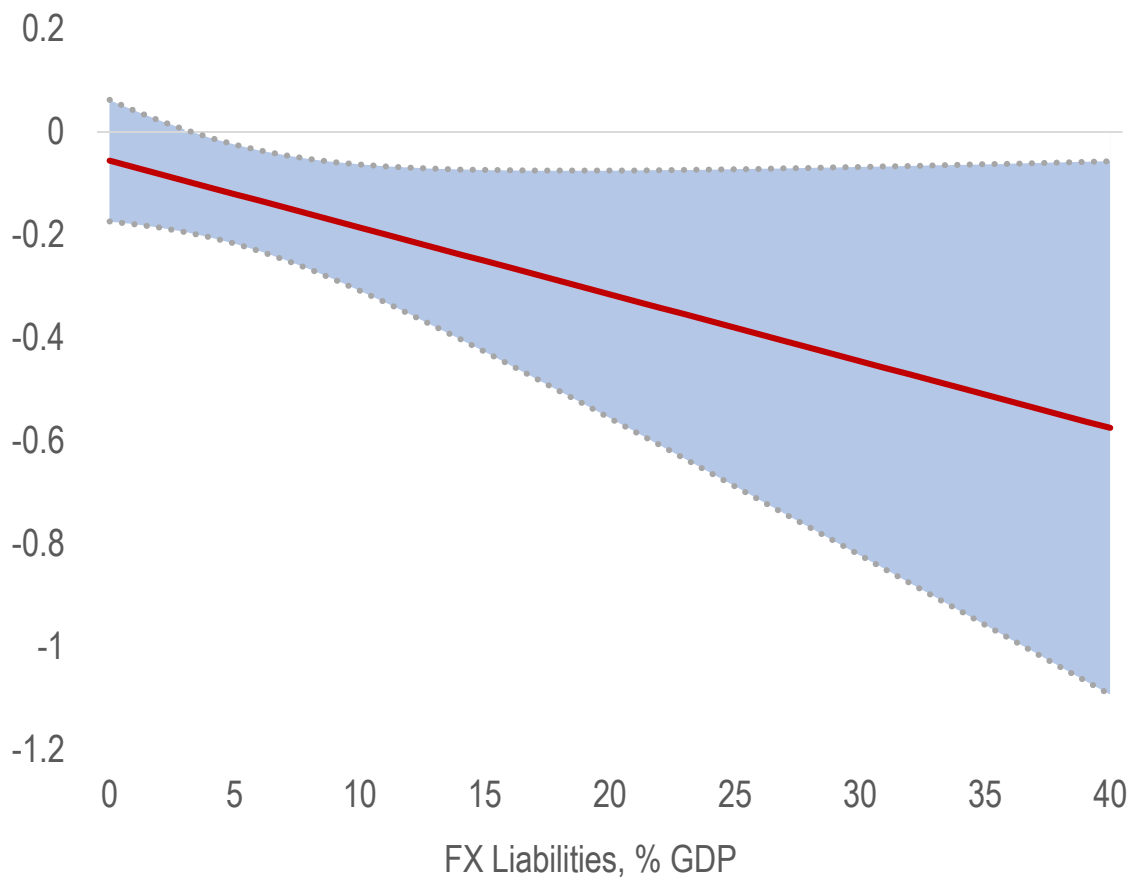
FXI response to capital flows by composition

(coefficient, percent)



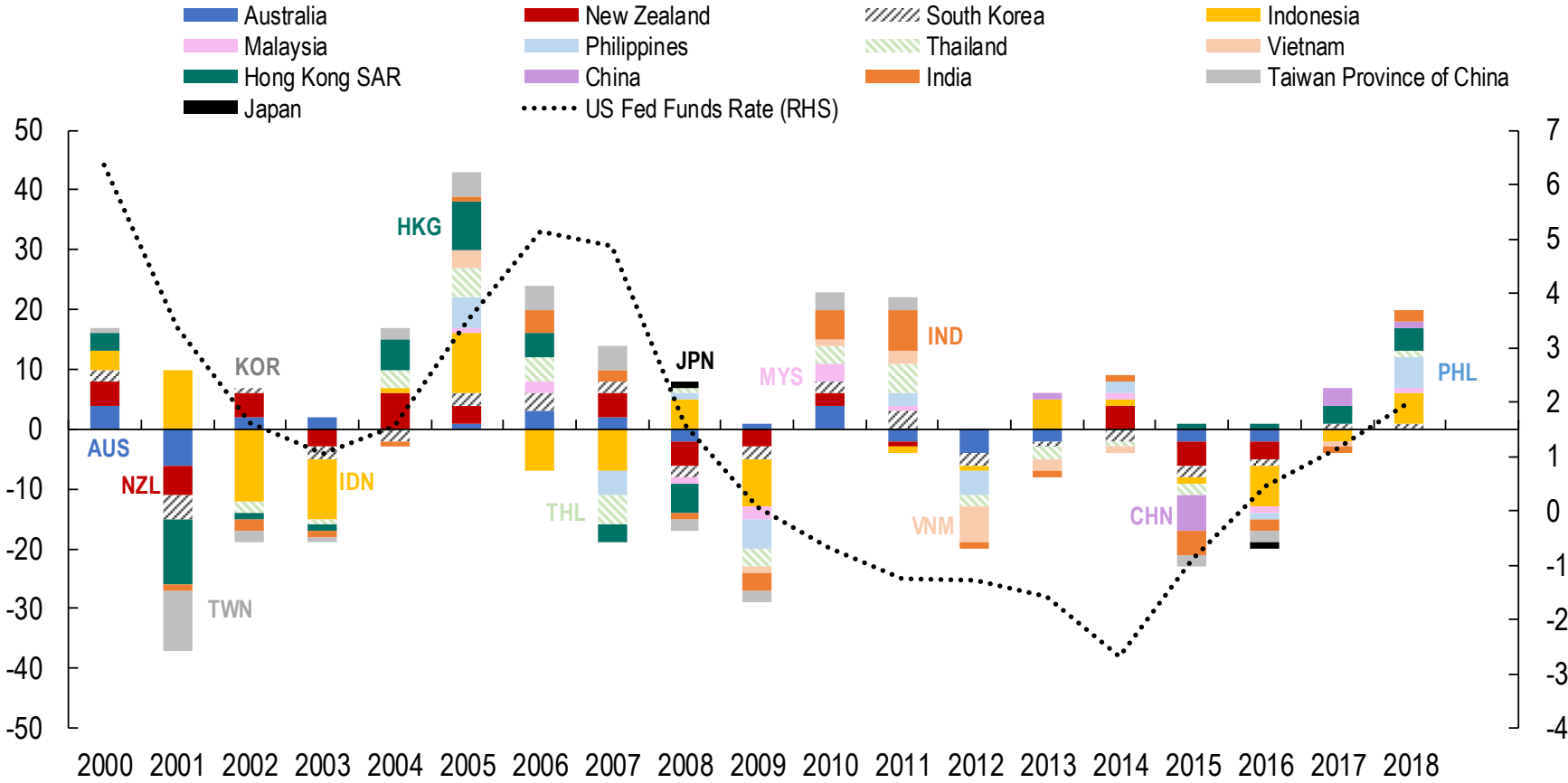
Impact of exchange rate depreciation on FXI conditional on the level of FX liabilities

(percent)



Asian policy rate actions often follow the US Fed

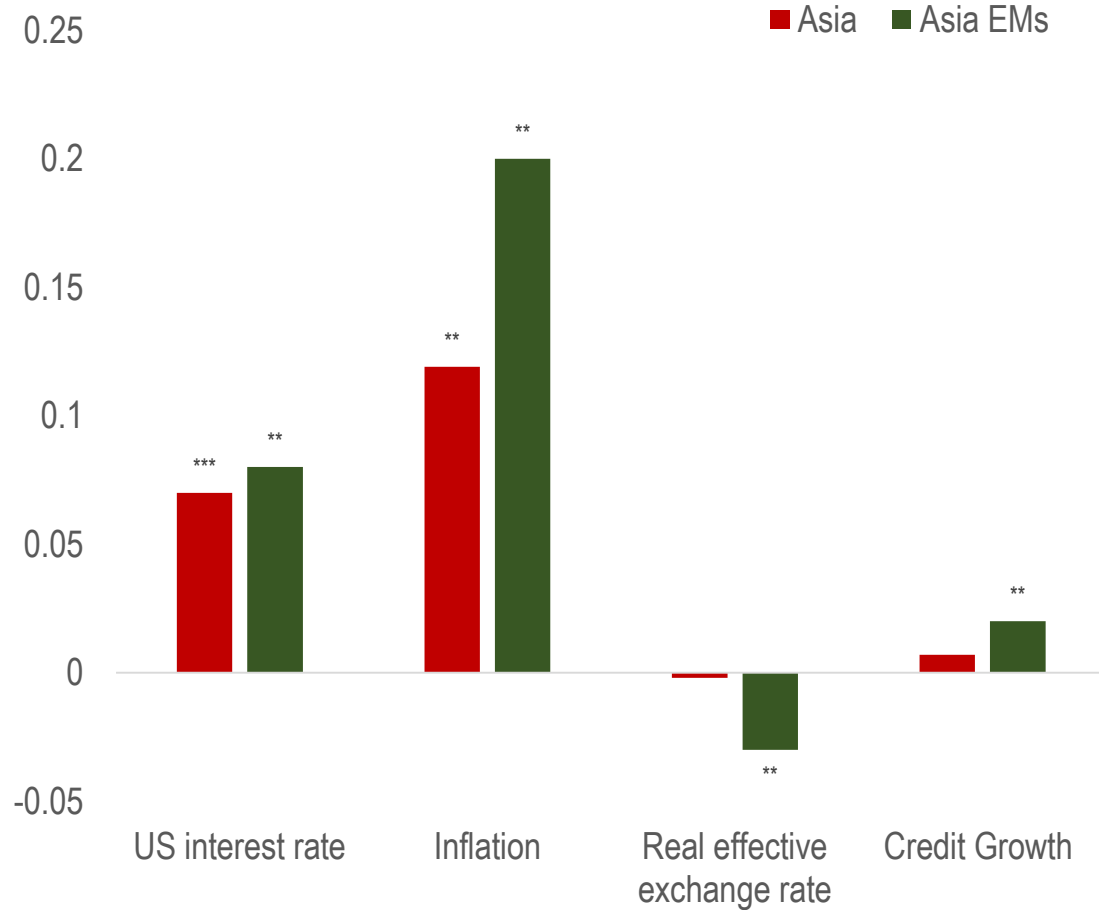
Frequency of Policy Rate Actions
(2000-18)



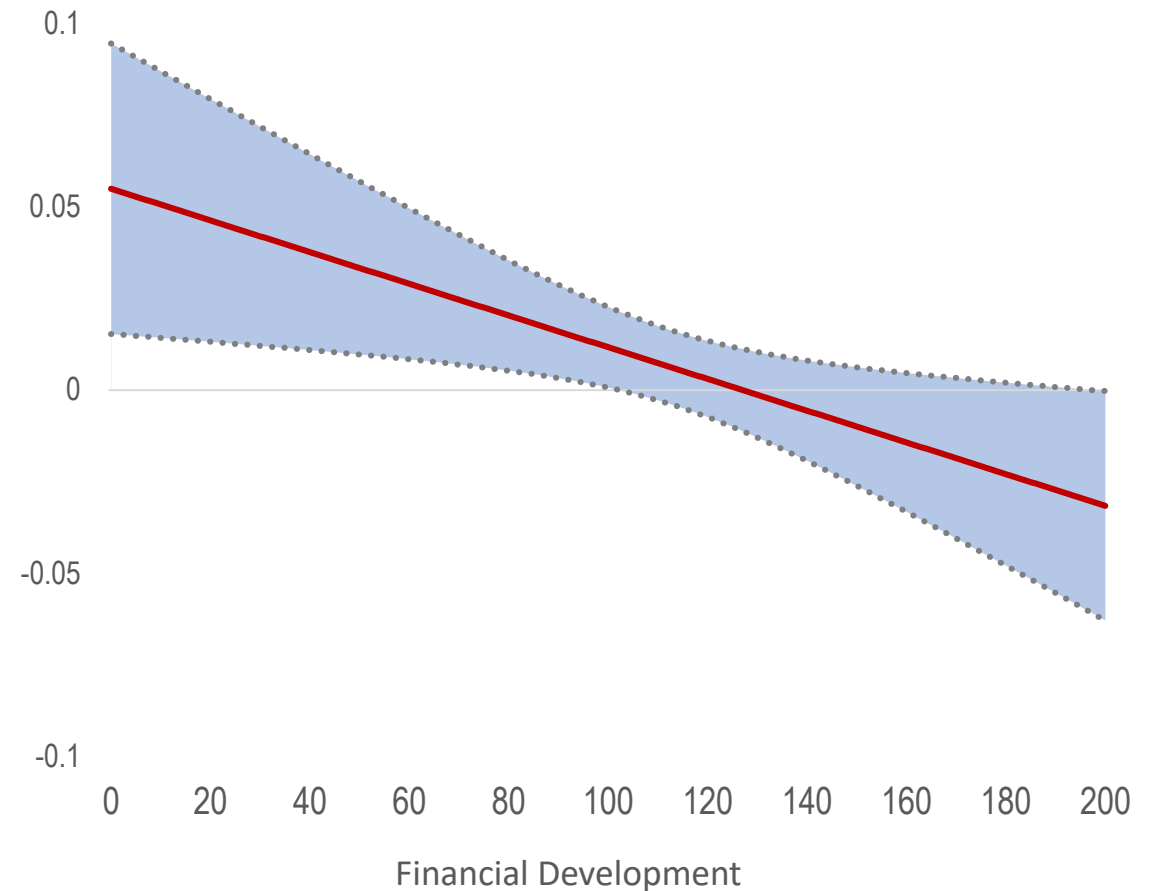
Source: Bloomberg L.P., Haver Analytics and IMF staff estimates.

Macro-financial conditions and financial development also affect policy rate actions in Asian EMEs

Monetary Policy Reaction Function
(coefficients, percent)

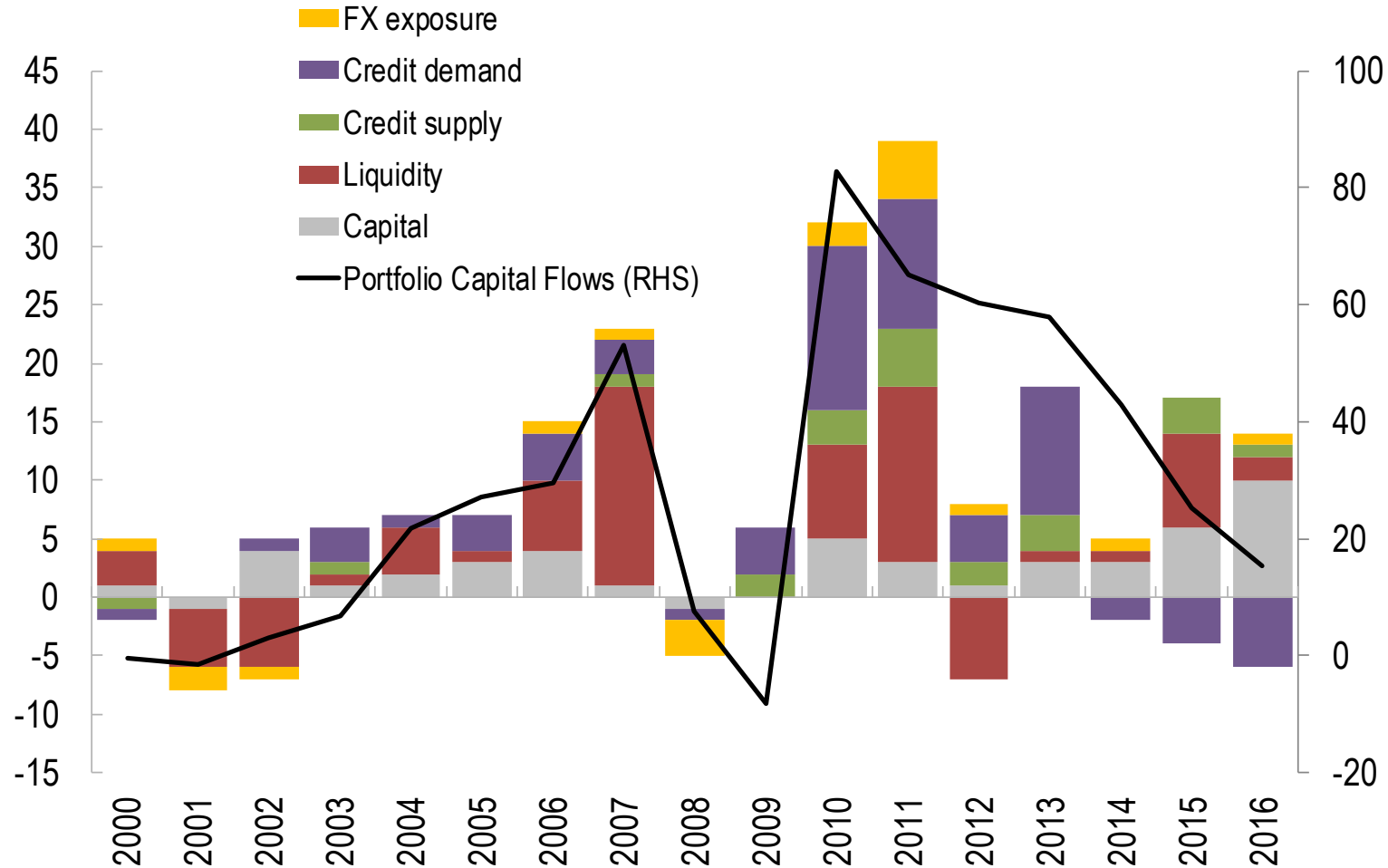


Effect of Exchange rate depreciation on monetary policy, through financial development
(percent)



MPMs tightened as financial conditions ease

Use of MPMs in Asia Over the Global Financial Cycle

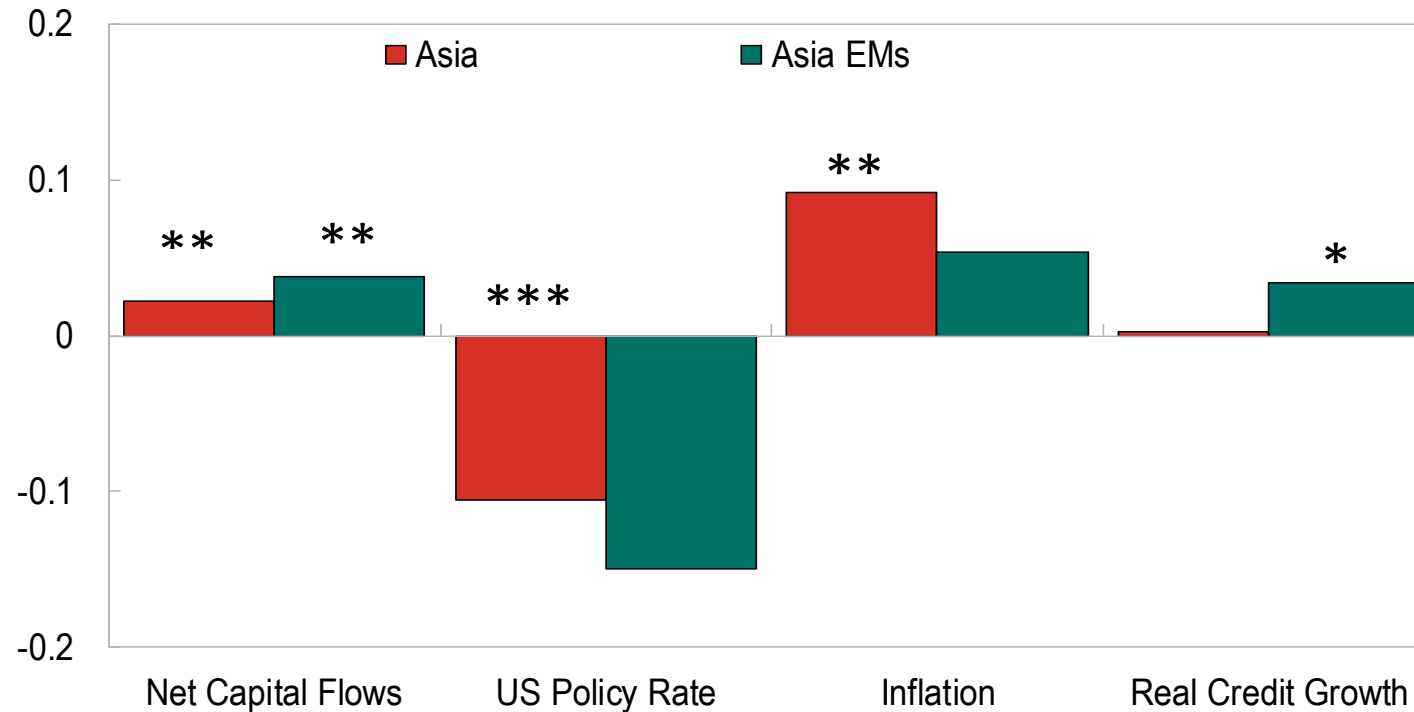


Sources: IMF MPM database and staff calculations.

MPMs responds to capital inflows and US easing as well as credit growth – with differences across EMEs and AEs

Macroprudential Policy Function Estimates

(Coefficients, Probability) 1/

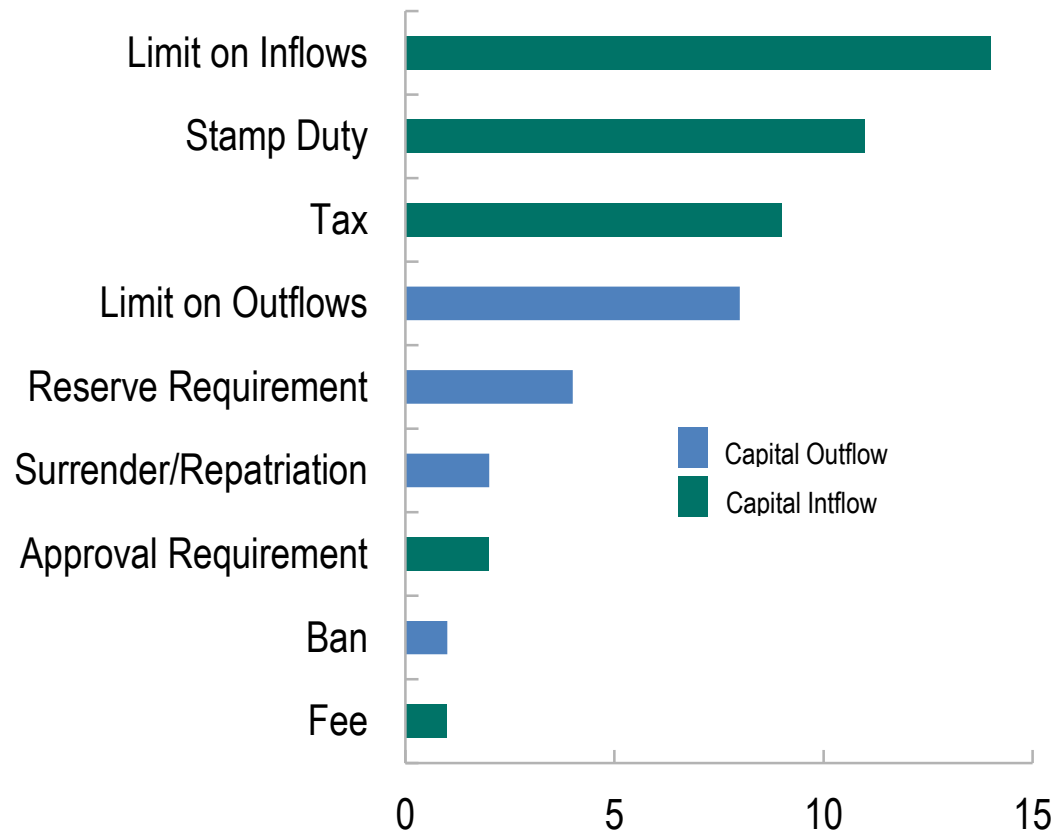


Sources: IMF Staff Calculations

1/ Coefficient estimates show the marginal probability of a tightening of macroprudential policies associated with each variable.

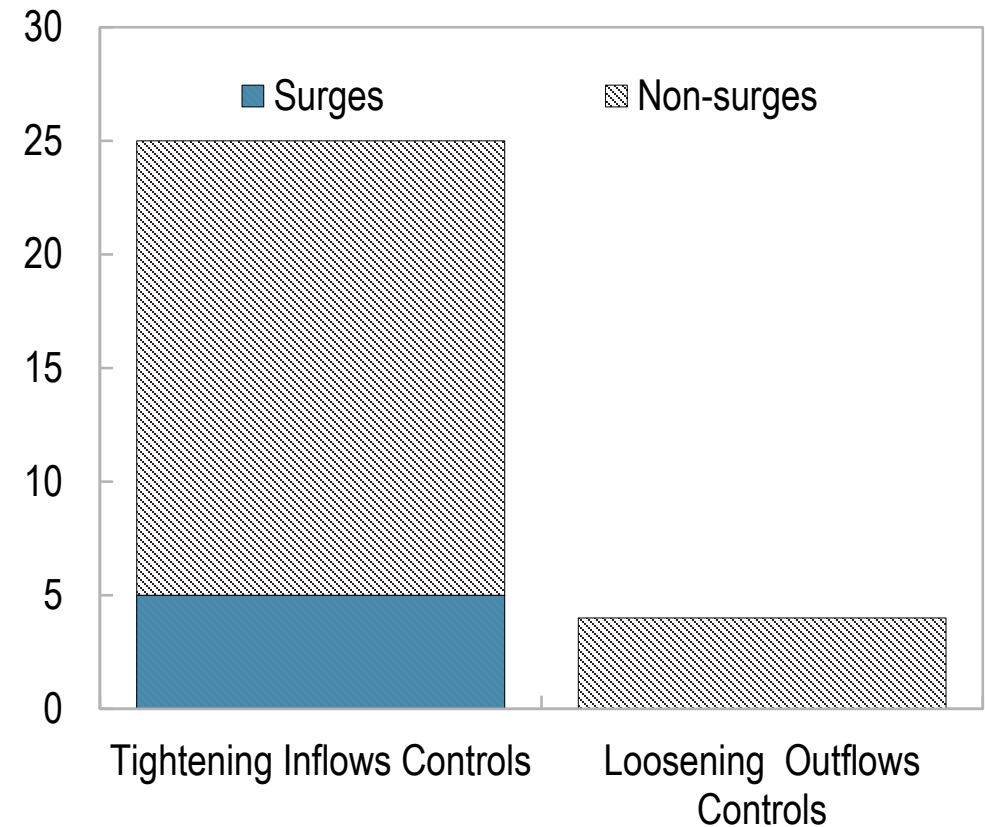
CFMs are used sparingly, both during and outside of capital flow surges

CFMs in Asia 2010-18
(number of measures per type)



Sources: IMF 2018 Taxonomy of CFMs.

CFMs and Capital Inflow Surges
(number of measures)

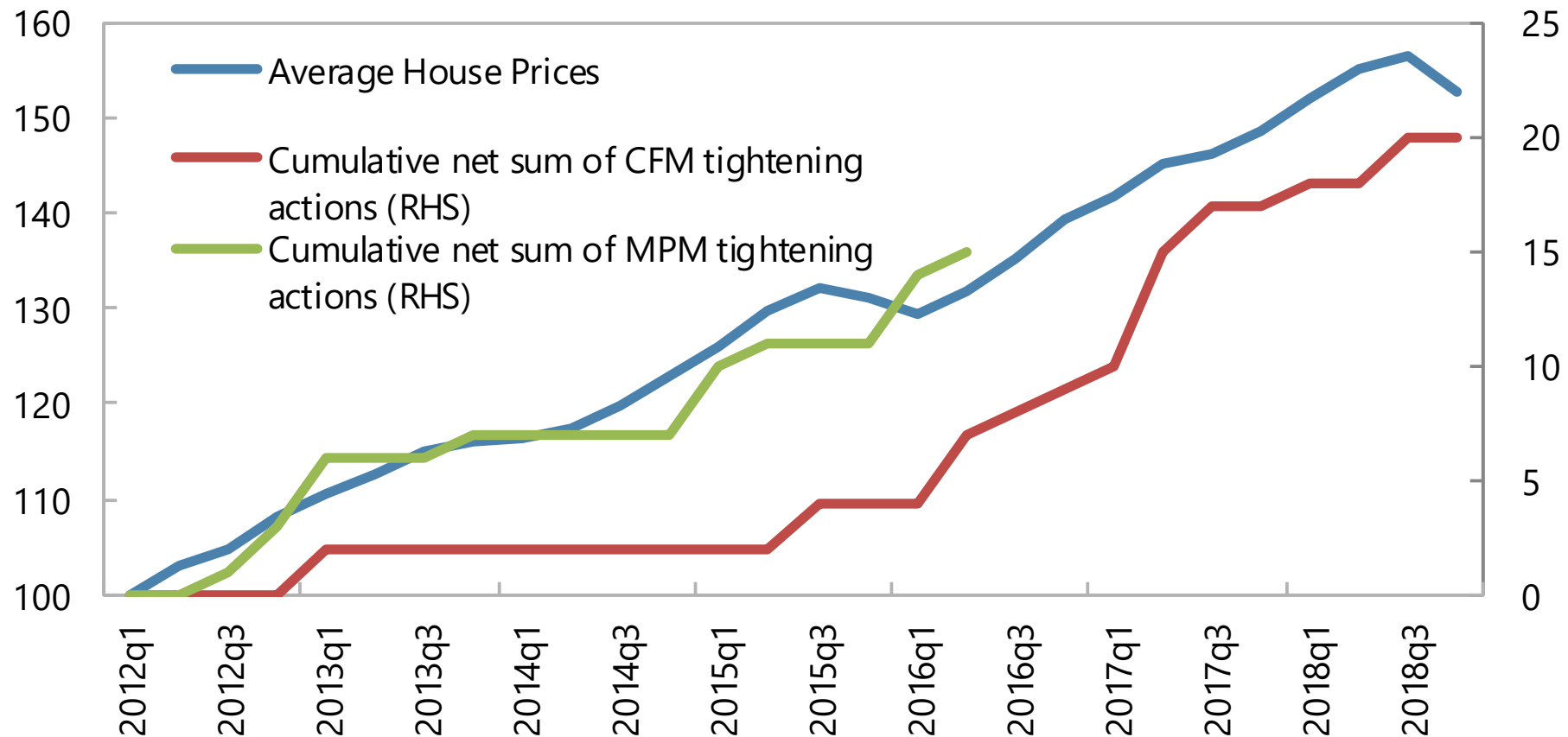


Sources: IMF 2018 Taxonomy of CFMs and IMF Staff estimates

CFMs address housing market risks in AEs with rapidly rising house prices, complementing use of MPMs

House Prices and CFMs (AUS, NZL, HKG, SGP)

(index, 2012Q1=100; sum)



Sources: Haver Analytics, CFM Database and IMF Staff Calculations.

Potential costs from policies

- Communicating policy with multiple goals and instruments is complex, undermining the effectiveness of policies
- There is a risk that inflation expectations could become less well anchored, raising the cost of achieving an inflation target (i.e. the sacrifice ratio), although evidence for this is weak
- FXI can involve potentially large sterilization costs
- FXI, MPMs and CFMs may hamper financial sector development and encourage unhedged FX borrowing
- Broad-based CFMs potentially contribute to large distortions in financial and resource allocation and delay needed macro adjustment
- Perception that FXI is motivated by incentive to gain unfair competitive advantage

What is the key takeaway? In an environment of volatile capital flows where the exchange rate can be a shock amplifier, EMEs use multiple policy tools to achieve multiple objectives. Specifically:

