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BANK FOR INTERNATIONAL SETTLEMENTS

IFC Satellite Seminar on "Post-crisis data landscape: micro data for the macro world", co-organised with the Central Bank of Malaysia and the European Central Bank

16 August 2019, Kuala Lumpur, Malaysia

Predicting and preventing financial crisis- where do we stand?[1]

Boris Hofmann,

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[1] This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

Predicting and preventing financial crises: Where do we stand?

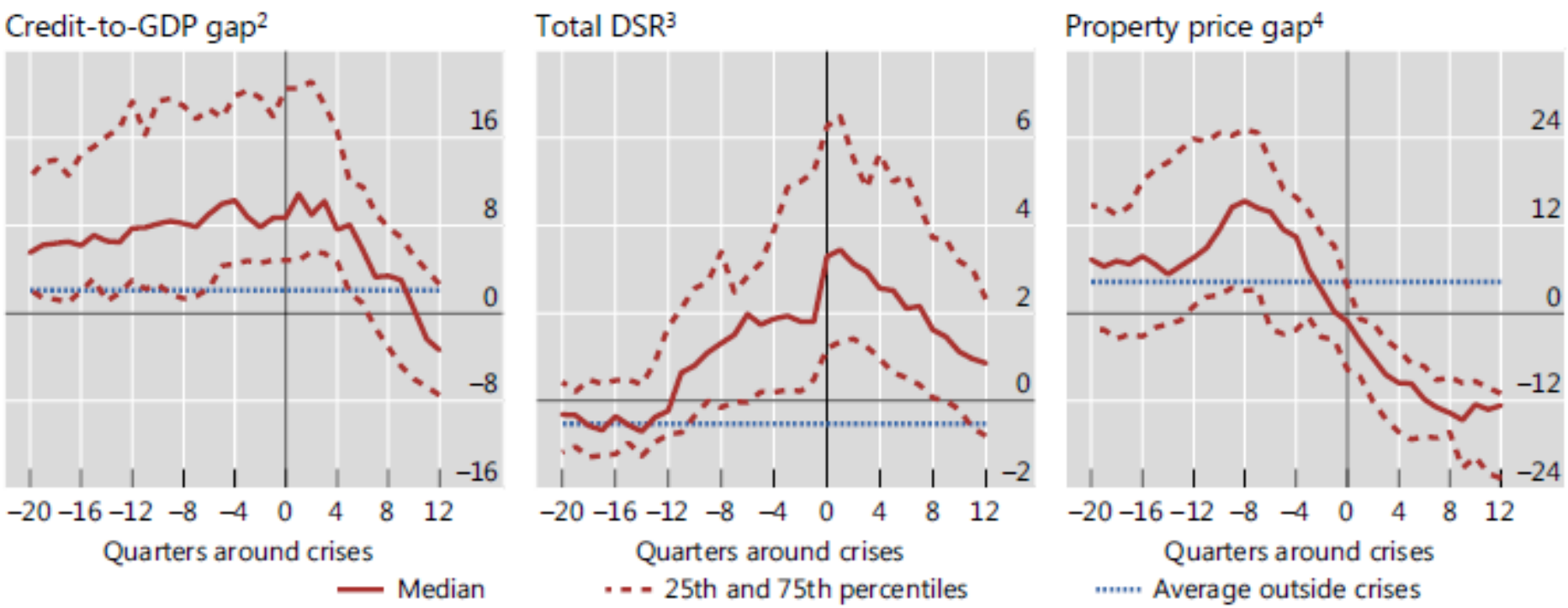
Boris Hofmann (BIS)

IFC-BNM-ECB Satellite Seminar "Post-crisis data landscape: micro data for the macro world", Bank Negara Malaysia, Kuala Lumpur, 16 August 2019

Outline

- Predicting financial crises
- Preventing financial crises
- Special challenges for EMEs

Aggregate crisis indicators…



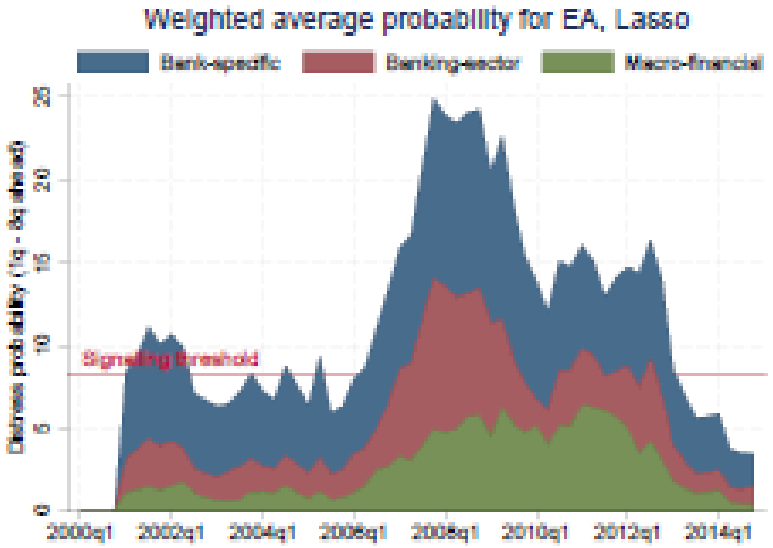
…with predictive power at different horizons (AUC)

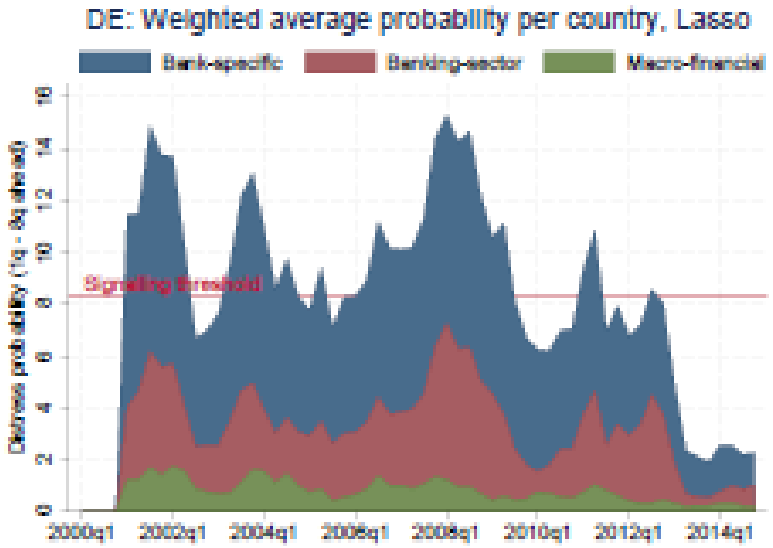
EWI	Horizon (quarters)											
	1	2	3	4	5	6	7	8	9	10	11	12
Credit-to-GDP gap	0.80*	0.80*	0.81*	**0.80***	**0.79***	**0.78***	**0.75***	**0.78***	**0.77***	**0.78***	**0.76***	**0.77***
Total DSR	**0.84***	**0.83***	**0.82***	0.79*	0.77*	0.76*	0.74*	0.75*	0.74*	0.71*	0.69*	0.69*
Property price	0.43	0.49	0.54	0.61	0.64	0.67*	0.68*	0.72*	0.71*	0.70*	0.69*	0.68*
Household DSR	0.82*	0.81*	0.80*	0.79*	0.77*	0.76*	0.73*	0.76*	0.75*	0.72*	0.69*	0.67*
Household credit-to-GDP gap	0.60	0.60	0.61	0.65*	0.66*	0.67*	0.70*	0.74*	0.75*	0.76*	0.76*	0.76*
Foreign currency debt to GDP	0.73*	0.71*	0.71*	0.67*	0.64	0.60	0.52	0.47	0.49	0.46	0.46	0.45
Cross-border claims to GDP	0.75*	0.75*	0.77*	0.74*	0.73*	0.71*	0.67*	0.66*	0.65*	0.63*	0.60	0.58

Source: Aldasoro et al (2018)

Micro data and financial crisis prediction

- Micro data can be used to predict risk of individual bank distress (Lang et al (2018))
  - Relate observed cases of bank distress to bank-level data as well as aggregate banking sector and macro-financial variables
- Aggregation of bank distress risk yields measure of systemic risk
  - Weighted average of bank distress probabilities





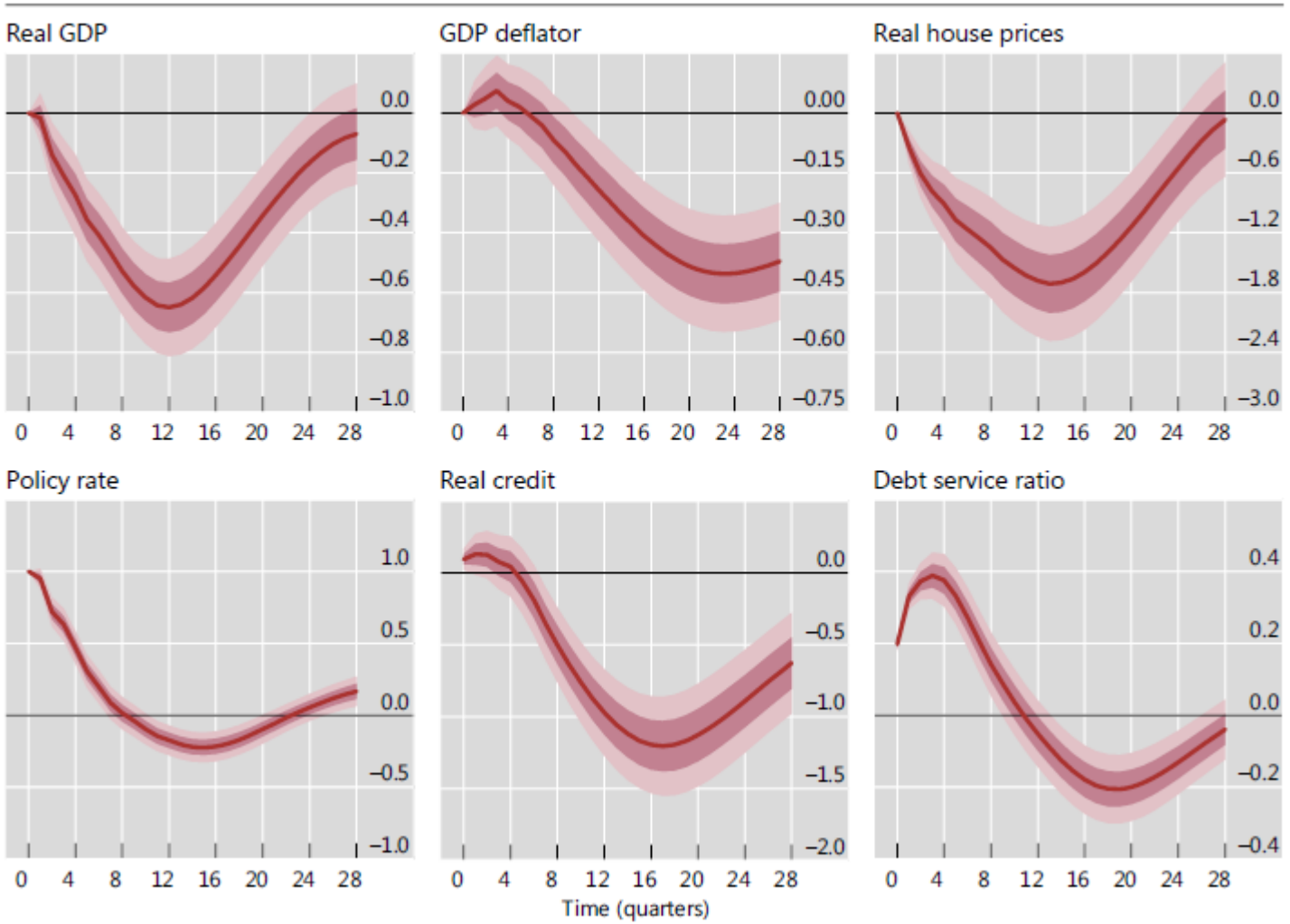
Source: Lang et al (2018)

Preventing financial crises

- Macroprudential policy
  - Countercyclical RR, LTV/DTI caps
  - Address financial imbalances in a targeted manner
    - Less collateral damage, but more prone to circumvention
    - Macropru enhances crisis resilience (BIS (2018))

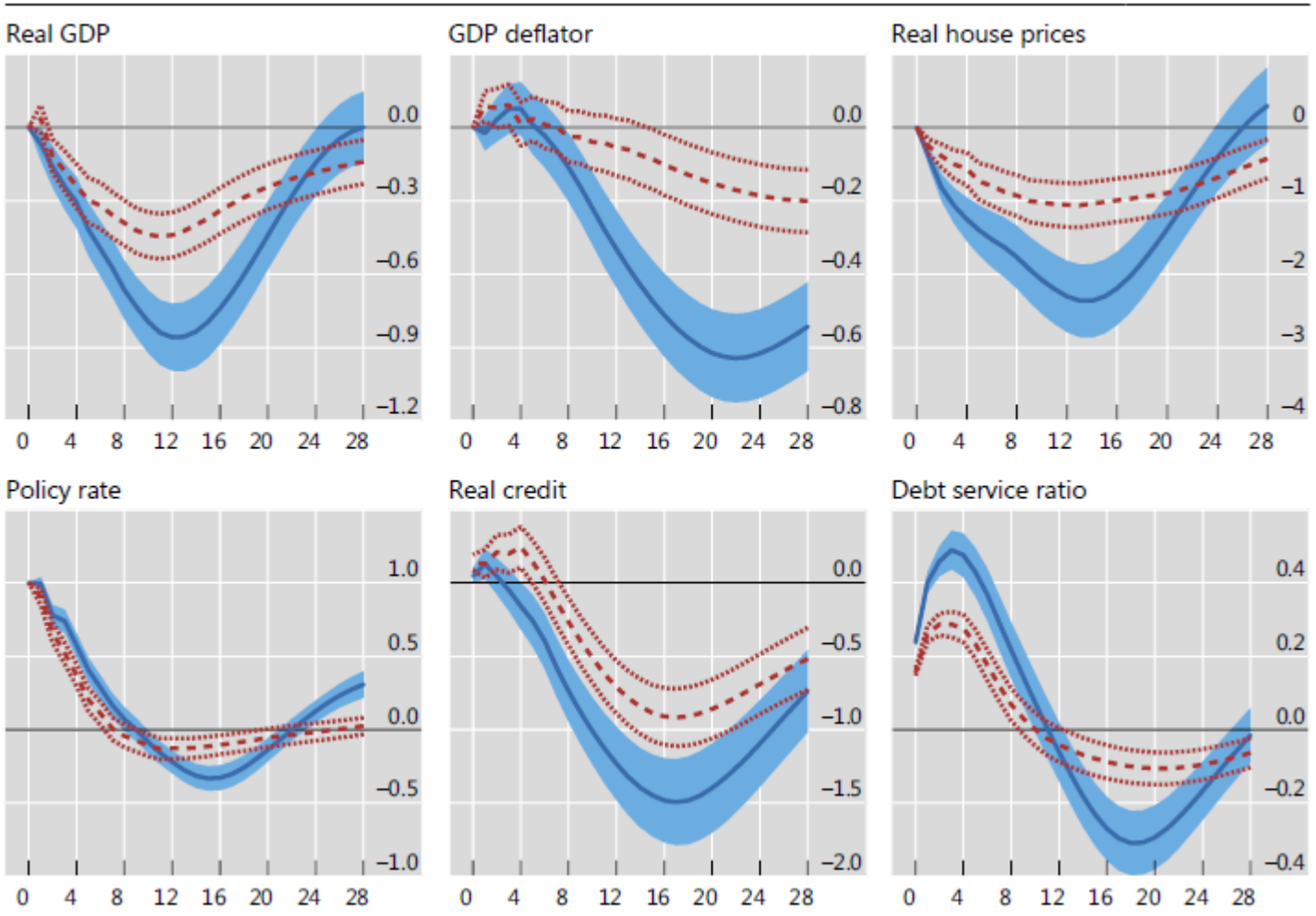
- Monetary policy
  - Tighter monetary policy to lean against financial imbalances
  - "Gets into all of the cracks"
  - But "collateral damage" on real economy
    - Credit over GDP might rise
    - Debt service burden might rise

Macro-financial impact of monetary tightening: Panel evidence



Source: Hofmann and Peersman (2017)

The role of debt levels



Source: Hofmann and Peersman (2017)

Evidence from micro data

- Microdata facilitate the identification of loan demand and supply factors and hence of the effects of macropru and monetary policy

- Analysis of the effects of macropru and monetary policy using bank-loan data from credit registries in Latin American countries (meta-analysis in Gambacorta and Murcia Pabon (2017))
  - Macropru and monetary policy are complementary: greater effectiveness when both policies push in the same direction

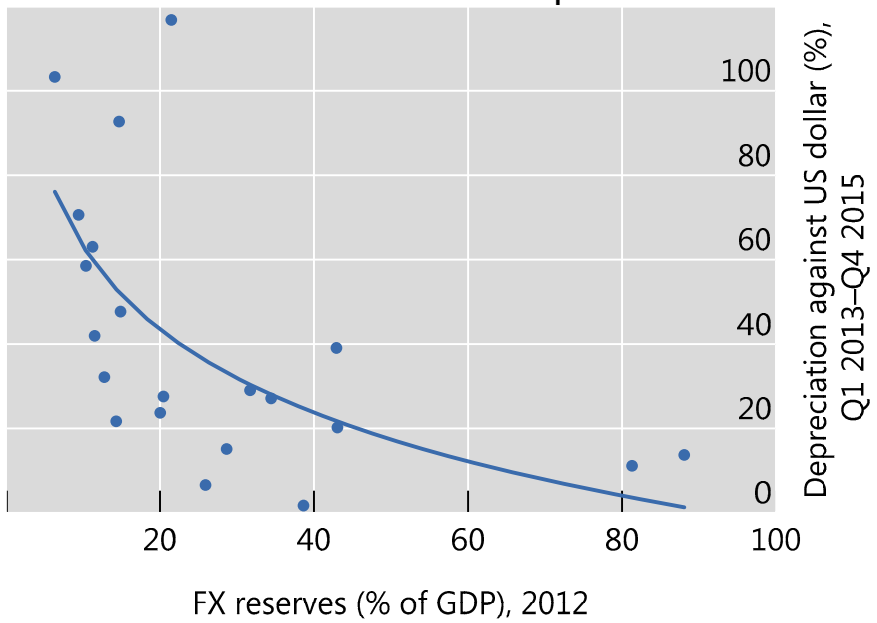
Special challenges for EMEs

- Dependence on foreign funding and less developed financial systems raise vulnerability to global financial factors

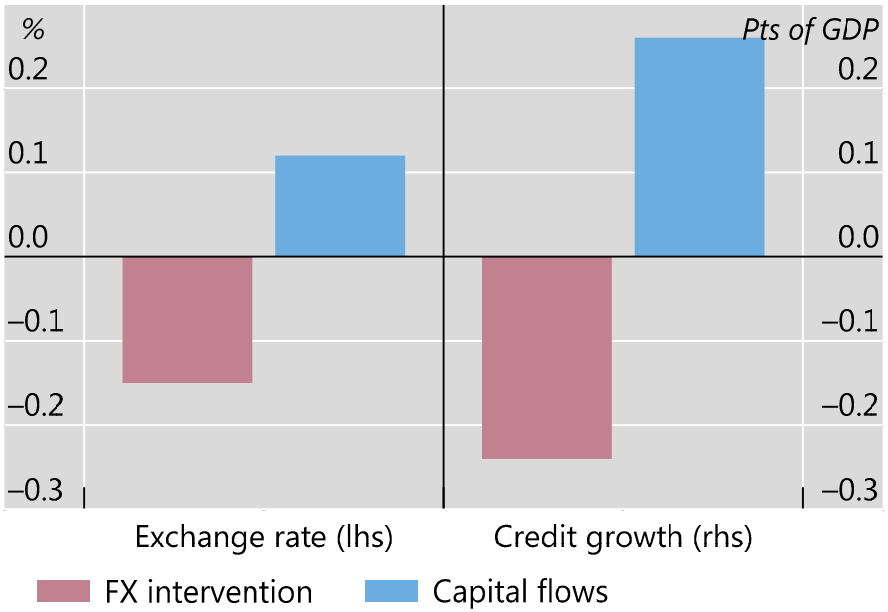
- Borrowing in foreign currency or in local currency from foreign lenders gives rise to a financial channel of the exchange rate
  - Capital inflows appreciate the exchange rate, which reduces credit risk in the presence of currency mismatches
  - Mutually reinforcing feedback loop between capital inflows and exchange rate appreciation
  - BIS AER 2019 special chapter on monetary policy frameworks in EMEs

FX intervention enhances resilience: Aggregate evidence

FX reserves cushion shock impacts

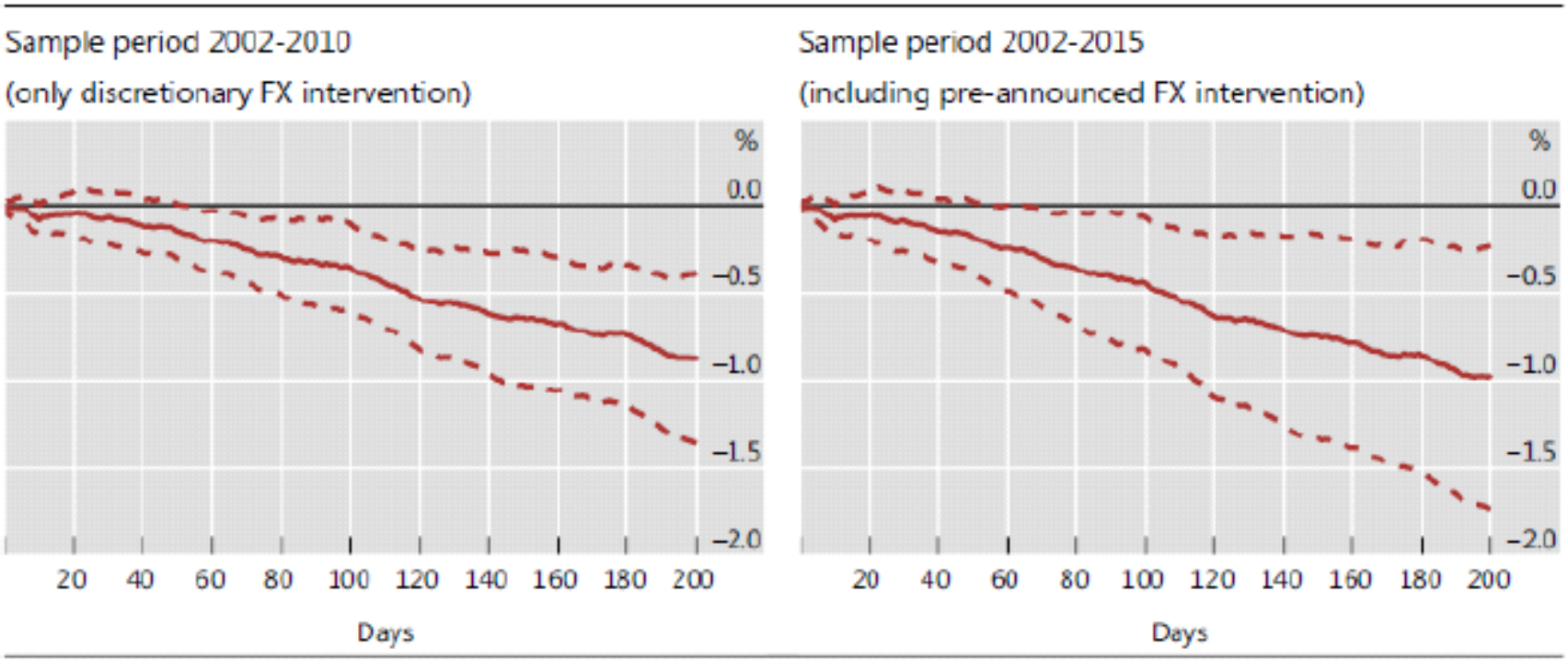


FX intervention effects



Source: BIS (2019)

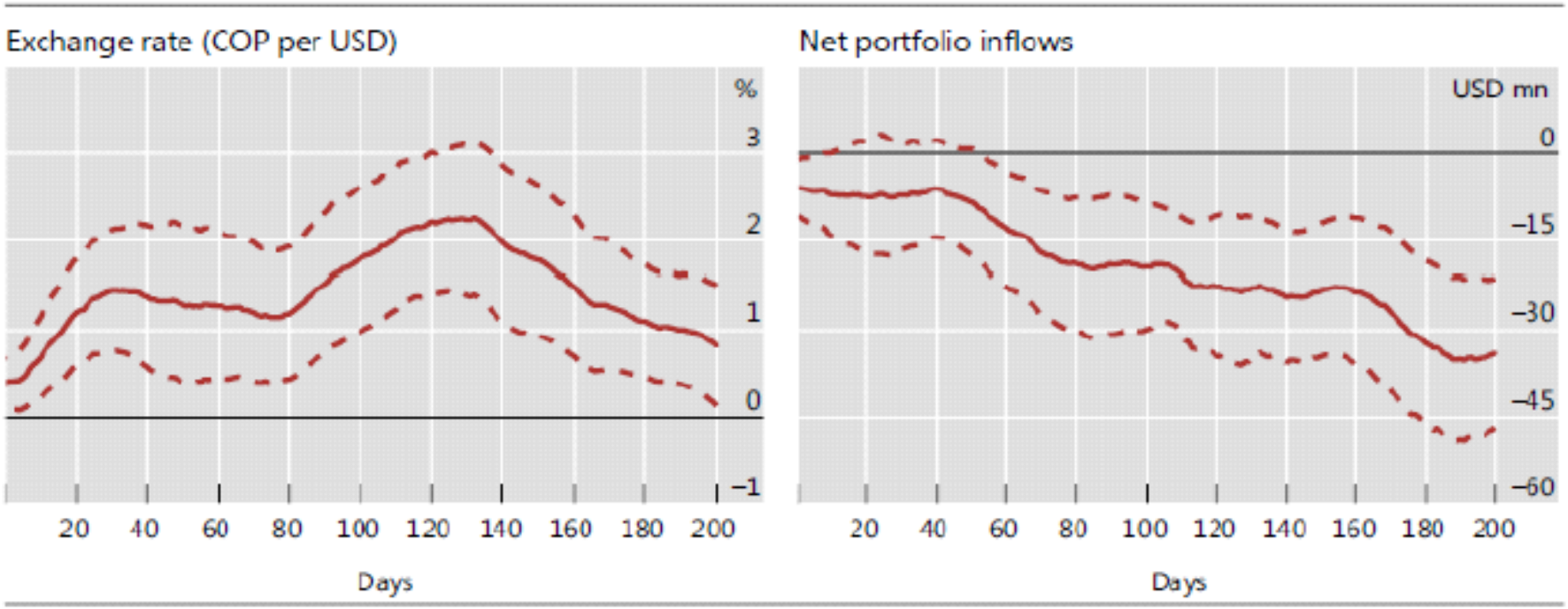
Impact of FXI on new corporate loans in Colombia



Size of impulse normalised to 30 million USD

Source: Hofmann, Shin, Villamizar-Villegas (2019)

Impact of FXI on exchange rate and capital flows in Colombia



Size of impulse normalised to 30 million USD

Source: Hofmann, Shin, Villamizar-Villegas (2019)

FX intervention impact depending on bank characteristics

	20 Days	40 Days	60 Days	80 Days	100 Days
Capitalisation	0.020***	0.039***	0.058***	0.077***	0.097***
	(0.001)	(0.002)	(0.002)	(0.003)	(0.004)
Bank Size	0.014***	0.029***	0.044***	0.060***	0.077***
	(0.001)	(0.002)	(0.002)	(0.003)	(0.004)
Debt	-0.003***	-0.006***	-0.01***	-0.013***	-0.016***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Provisions	-0.017***	-0.033***	-0.049***	-0.065***	-0.082***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
FXI*Capitalisation	0.10***	0.16***	0.19**	0.25**	0.31**
	(0.034)	(0.55)	(0.077)	(0.10)	(0.12)
FXI*Bank Size	0.11***	0.15***	0.18**	0.26***	0.31**
	(0.033)	(0.055)	(0.077)	(0.10)	(0.12)
FXI*Debt	-0.008***	-0.011**	-0.013*	-0.021**	-0.024**
	(0.003)	(0.005)	(0.007)	(0.009)	(0.012)
FXI*Provisions	-0.024	-0.036	-0.031	-0.035	-0.037
	(0.015)	(0.026)	(0.036)	(0.047)	(0.058)

Source: Hofmann, Shin, Villamizar-Villegas (2019)

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