U.S. monetary policy and fluctuations of international bank lending

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The views are our own and don't necessarily represent the views of the Federal Reserve System or the Bank for International Settlements

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Two main push drivers of capital flows identified

Global risk aversion

- Proxied by VIX in the literature
- Negatively affects capital flows

- Jeanneau and Micu (2002)
- Ferrucci et al. (2004)
- Takats (2010)
- Herrmann and Mihaljek (2013)
- Brun and Shin (2015 * 2)

U.S. Monetary policy

Increase in interest rate => reduction in capital flows

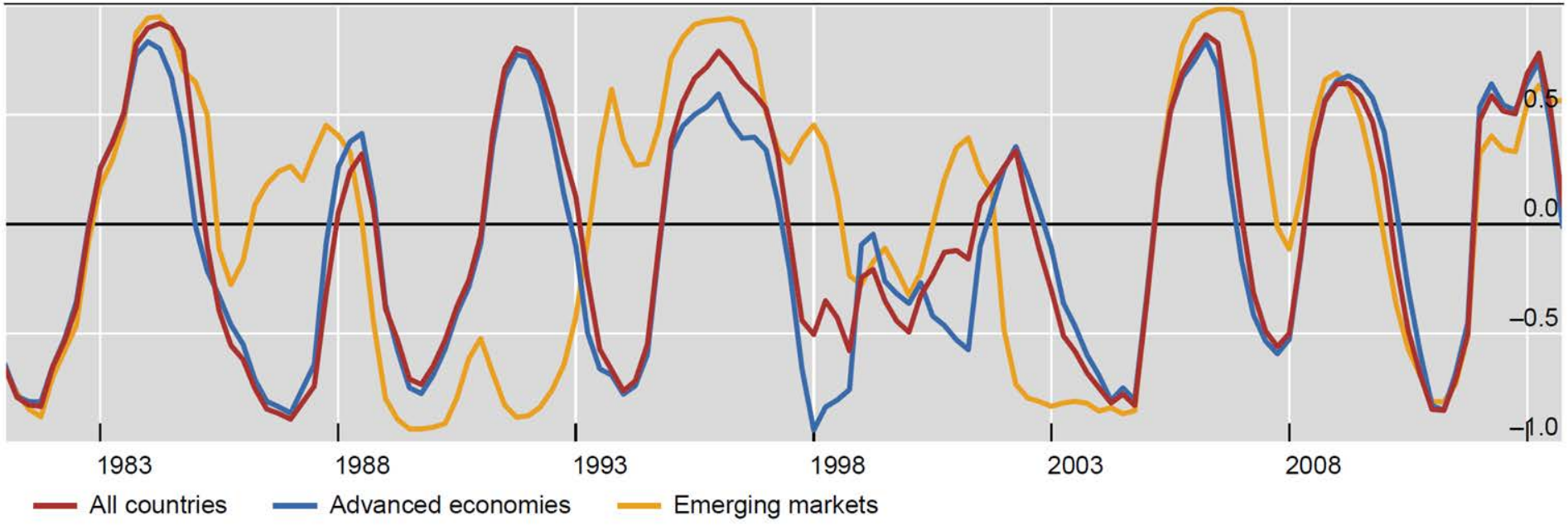
- Bruno and Shin 2015
- Ghosh et al. 2014

Increase in interest rate => increase in capital flows

- Jeanneau and Micu 2002
- Goldberg 2002 (mixed results)
- Cerutti et al. 2014

Lack of consensus is not surprising

Correlation between flows (t, t+7) and FF (12q rolling)



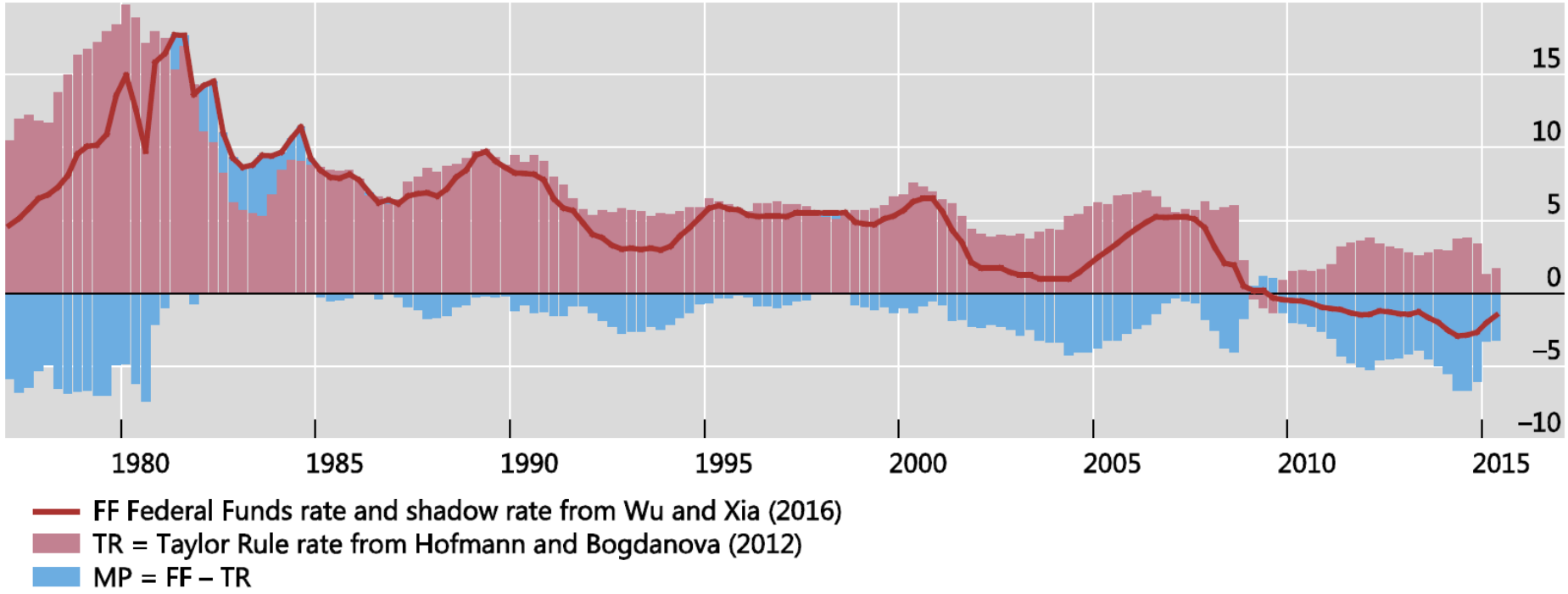
Possible explanations and our contribution

- Time-varying effect of monetary policy on capital flows
- ➢ Conjecture the presence of the regimes
- ➢ Estimate the regimes and correlate them with potential drivers
- Different informational content of interest rate changes in different times
- ➢ Allow for interest rate changes driven by fundamentals and for interest rate changes orthogonal to them

FF rate (FF) = Taylor Rule (TR) + deviation from TR (MP)

- ➢ Allow for different effects on flows to AEs and EMEs

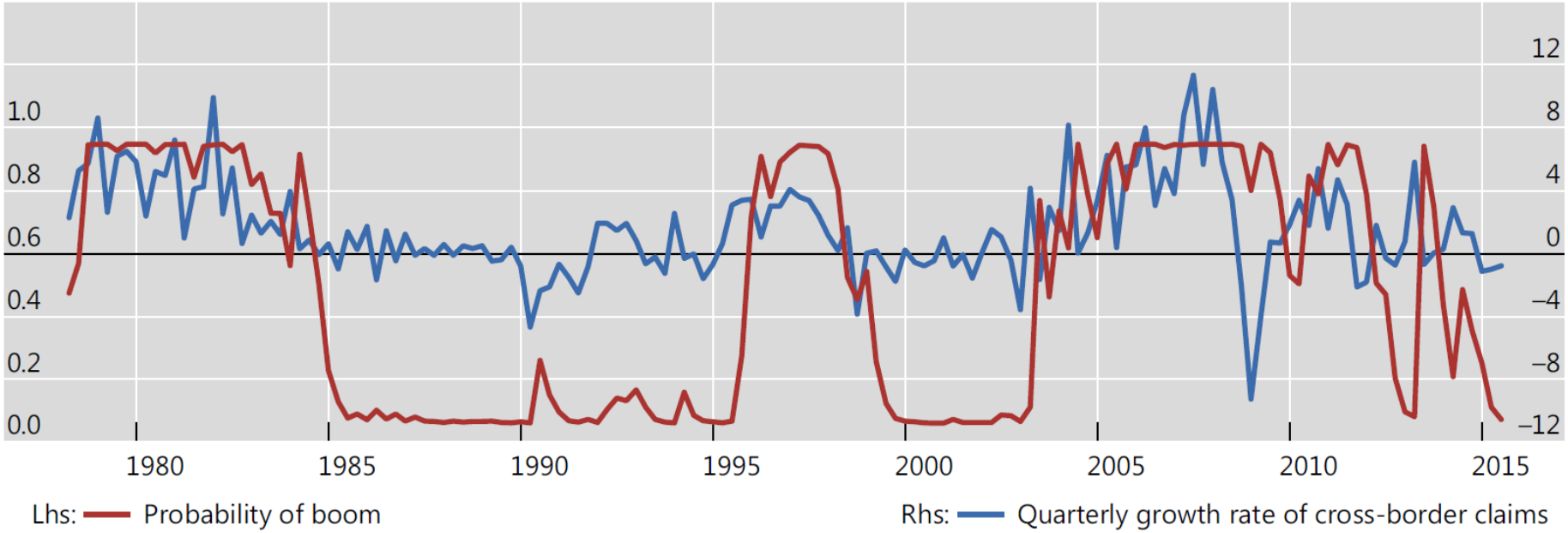
Figure 5: Decomposition of the federal funds rate.



Markov switching regression to identify regimes

- Variable:
  quarterly growth rate of total LBSR flows from AE to EME
- Results:
- High growth regime: mean 3.4% (***, s.d. 3.3 pp) – “lending boom”
- The other regime: mean -0.04% (0, s.d. 1.4 pp) – “stagnation”
- Prob. of switching is about 5% for each regime

Figure 3: Quarterly growth rate of LBSR claims of AEs on EMEs and probability of a boom regime.



Time series regressions

$$FLOW_t^R = \alpha_0 + \alpha_1 t + \beta FF_t + \varepsilon_t,$$

- *FLOW = quarterly growth rate of exchange-rate adjusted changes in stocks*
- *R = to EMEs or AEs*
- Run by regime and *R*
- Alternatively, split *FF* into *TR* and *MP*

$$FLOW_t^R = \alpha_0 + \alpha_1 t + \beta_1 TR_t + \beta_2 MP_t + \varepsilon_t$$

Time series results: effect of an increase in FF rate

	EME: Boom	EME: Stagnation	AE: Boom	AE: Stagnation
FF	**0.40****	**-0.34****	0.19	**0.48****
MP	0.17	**-0.37***	-0.06	**1.20*****
TR	**0.55*****	**-0.31***	**0.36****	-0.015

- Increase in FF rate amplifies cycles of lending to EMEs
- Increase in FF rate increases flows to AEs in both regimes but for different reasons

Controlling for composition: Panel

$$FLOW_{ijt} = \alpha_{ij} + \alpha_1 t + \beta_0 Z + \beta_1 TR_t * B + \beta_2 TR_t * S + \beta_3 MP_t * B + \beta_4 MP_t * S + \gamma_1 TL_{it} + \gamma_2 TB_{jt} + \varepsilon_{ijt}$$

- Or *FF* instead of *TR* and *MP*
- *B* = *boom*, *S* = *stagnation*
- Control for total lending and borrowing (deviation from quarterly mean)
- Estimate separately for AE and EME borrowers

Panel results: effect of an increase in FF rate

	EME: Boom	EME: Stagnation	AE: Boom	AE: Stagnation
MP	-0.25	**-1.59*** **	**0.80*** **	0.37
TR	**0.58*** **	**0.44***	**1.01*** **	**0.80*** **

- Improvement in US fundamentals increases lending to all
- Tightening of MP stance creates retrenchment from EMEs, especially during stagnation

✓ Results are robust to controlling for ERs, Lagging MP and TR, excluding "safe havens", excluding crisis, country trends, regime duration

✓ Regime differences more pronounced for lending to non-banks and are driven by loans and deposits (rather than debt securities)

What explains regimes?

- Prime candidate – global credit cycle
  - Driven by global risk aversion
  - Measures: credit spread, realized S&P volatility, USD appreciation
  - All explain regimes equally

- Benchmark results unchanged when controlling for all three measures
- If estimating for alternative regimes, similar pattern only for USD appreciation

So, the story then

When dollar is depreciating or risk appetites are high, there is a boom in lending to emerging markets. In this environment, improvement in fundamentals that leads to an increase in FF fuels more lending (to all) despite higher cost of capital.

When dollar is appreciating or risk appetite is low, higher FF has a standard bank-lending channel effect coupled with flight to quality. If fundamentals are improving, however, it is likely leading to increased risk appetite.

Why care?

- Reconciling empirical findings on the impact global push factors
- Find evidence of both flight to quality and search for yield
- Understanding the nuances of the effects of global push factors may help predict (and prevent?) destabilizing turn-arounds in capital flows

Thank you!