BANK FOR INTERNATIONAL SETTLEMENTS

# International Banking and Prudential Spillovers. Some evidence and thoughts

Stijn Claessens

Head of Financial Stability Policy, Monetary and Economic Department

Joint IBRN-IMF Conference

**The Transmission of Macro Prudential and Monetary Policies Across Borders**

Washington DC, Wednesday, April 19, 2017



# Outline of Presentation

A. Many conceptual and empirical challenges on spillovers
   - Early for definitive conceptual framework, much to be done
   - With imperfect data (not granular enough), empirics hard
B. Analyses on financial spillovers show much heterogeneity
   - Exposures of various flows to global factors vary
   - Foreign banks affect booms and busts in various ways
C. Policies: macroprudential, including capital flows management
   - Need to be clear on why such prudential tools are needed
   - While spillovers can arise, whether they matter in what way is unclear. Policy advice may thus be at early days

# A1. Many Conceptual Challenges

- "First best:" Perfect risk-sharing, but no "bad" spillovers
  - First best does not mean stable capital flows. And asset prices to reflect both local and international factors.
  - But not excessive spillovers, limited regulatory arbitrage (?)
- Macroprudential (MAP) and capital flows management (CFM) policies can spillover in many ways: Q and P; direct, indirect
- But again need not all be adverse, ie, w/ negative externalities
  - Unclear as to which spillovers we need to worry about
  - Likely depends, in part, on: state of financial cycles in both countries; other financial frictions; ZLB/ELB; other tools; etc

# A2. Many Empirical Challenges

- Hard to document spillovers as they arise in many ways
  - Inward, outward. Direct (eg, own banks, via branches, subs of foreign banks), indirect (eg, to, via 3rd country, trade)
- Spillovers and their effects likely to be very heterogeneous
  - Differences can arise given type of flow, source, destination, state of (global) financial systems and economies
  - And given type of investors and their conditions, eg, banks' balance sheets, intra-group frictions, etc
- MAP (and CFM) policies relatively new, being tested
  - Not yet through full financial cycle. Requires (more) research with more (granular) data, but often still limited

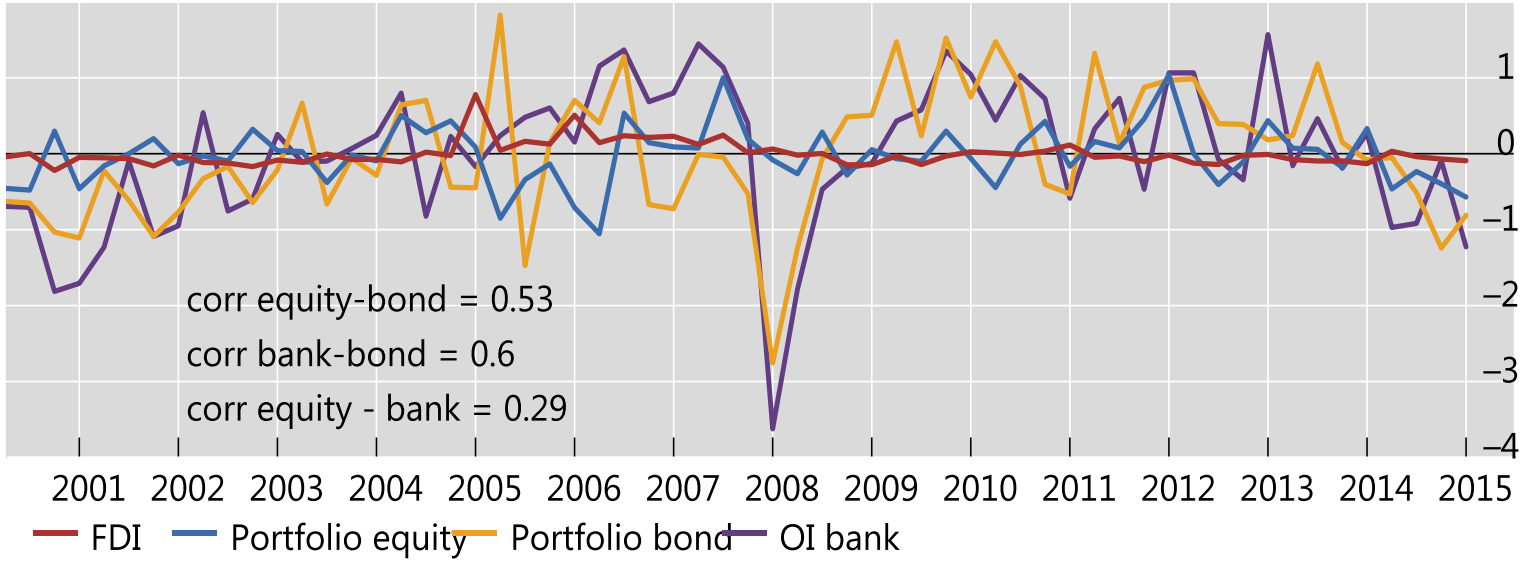
# B. Stylised Facts on Financial Spillovers
# Heterogeneity in flows, credit is large. Three examples

1. Drivers of capital flows, heterogeneous in general, depend
   - Some flows more than others driven by global factors
   - Some countries more sensitive to global factors, with type, source and destination characteristics determining sensitivities
2. Foreign banks can affect booms, but again how depends
   - As foreign banks' characteristics differ from domestic banks
   - Can import booms, but also depends on home, bilateral factors
3. Foreign banks can export and import shocks, but also depends
   - Foreign banks often diversify/export shocks, but also import
   - Depends on many factors: banks, home, host, bilateral, etc



# B1. Global co-movements, which affect EMs more than AEs, vary by flow (and MAP coverage thus needs to adjust)

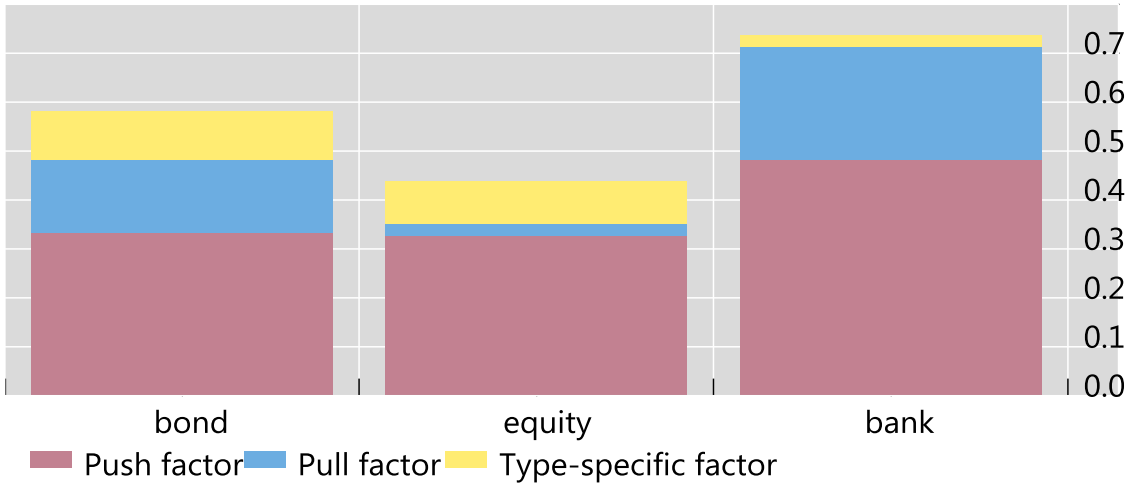
- Commonalities in equity, bond, bank flows but not in FDI, other
- Commonality captures key events (Lehman, Euro, Taper Tantrum), but present generally
- Estimated Common Factors – All inflows and by types (for EMs)



# What drives the common dynamics varies by type of flow

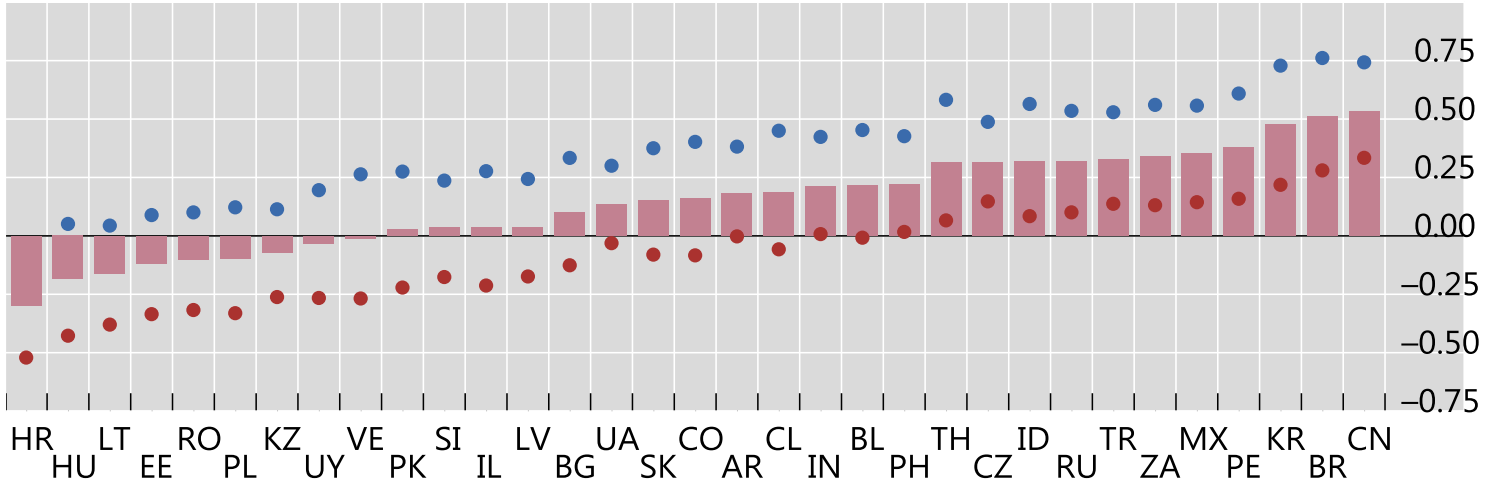
- EM dynamic explained mostly by core countries' factors (risk aversion, (US) monetary policy)
- But relative importance of push factors varies by type
  - Pull variables somewhat more important for bond and bank flows
- Type-specific factors play minor roles for specific flows

R-square distribution (based on Shapley decomposition)



# Some countries more, some less sensitive to common
# For example, bank betas vary a lot, positive, negative…

Bank Beta on the common EM factor



# Country sensitivity varies, also by type

| | Equity | Bond | Bank |
|---|---|---|---|
| Argentina | 0.37 | 0.11 | 0.18 |
| Belarus | -0.05 | 0.26 | 0.22 |
| Brazil | 0.60 | 0.56 | 0.51 |
| Bulgaria | 0.28 | 0.04 | 0.10 |
| Chile | -0.02 | 0.19 | 0.18 |
| China | 0.39 | 0.01 | 0.53 |
| Colombia | 0.13 | 0.03 | 0.16 |
| Croatia | 0.23 | 0.09 | -0.30 |
| Czech Republic | 0.14 | 0.14 | 0.31 |
| Estonia | 0.26 | -0.20 | -0.12 |
| Hungary | -0.12 | 0.46 | -0.18 |
| India | 0.66 | NA | 0.21 |
| Indonesia | 0.45 | 0.63 | 0.32 |
| Israel | 0.10 | 0.38 | 0.04 |
| Kazakhstan | 0.59 | 0.42 | -0.07 |
| Korea | 0.45 | 0.21 | 0.48 |
| Latvia | 0.10 | 0.17 | 0.04 |
| Lithuania | -0.08 | 0.30 | -0.16 |

| | Equity | Bond | Bank |
|---|---|---|---|
| Mexico | 0.31 | 0.40 | 0.35 |
| Pakistan | 0.86 | 0.40 | 0.03 |
| Peru | 0.24 | 0.26 | 0.38 |
| Philippines | 0.52 | 0.42 | 0.22 |
| Poland | 0.24 | 0.48 | -0.10 |
| Romania | 0.36 | 0.33 | -0.10 |
| Russia | 0.26 | 0.33 | 0.32 |
| Slovak Republic | -0.04 | 0.44 | 0.15 |
| Slovenia | 0.56 | 0.21 | 0.04 |
| South Africa | 0.40 | 0.56 | 0.34 |
| Thailand | 0.43 | 0.27 | 0.31 |
| Turkey | 0.58 | 0.51 | 0.33 |
| Ukraine | 0.13 | 0.23 | 0.14 |
| Uruguay | -0.10 | 0.47 | -0.03 |
| Venezuela | -0.06 | 0.29 | -0.01 |

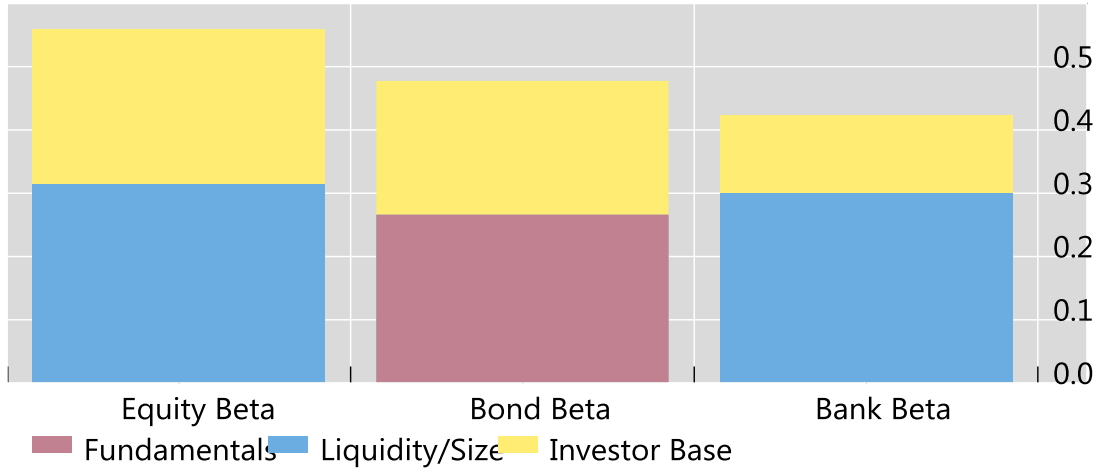
| Beta: | β>0.4 | 0.2<β <.4 | β<0.2 |
|---|---|---|---|
| Color: | | | |

**<u>Three Groups of EMs:</u>**
- High sensitivity (Brazil, Korea, Turkey,.)
- Varying by flows (China, Mexico,..)
- Low Sensitivity (Chile, Estonia,..)

# Why more sensitive is most often less about fundamentals, more about markets' characteristics, but hard to do MAPs for

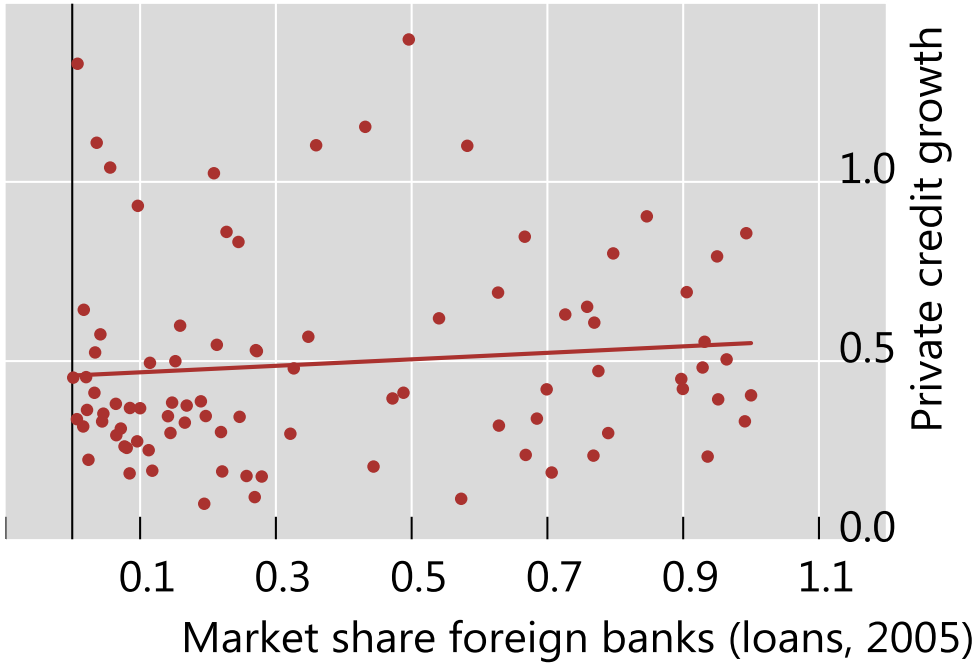
- Macro fundamentals: little explaining power (except for bond flows) – no role for institutions
- **Liquidity** and **Investor Base proxy** account for most of the cross country variation and have quantitatively most impacts

R-Square decomposition



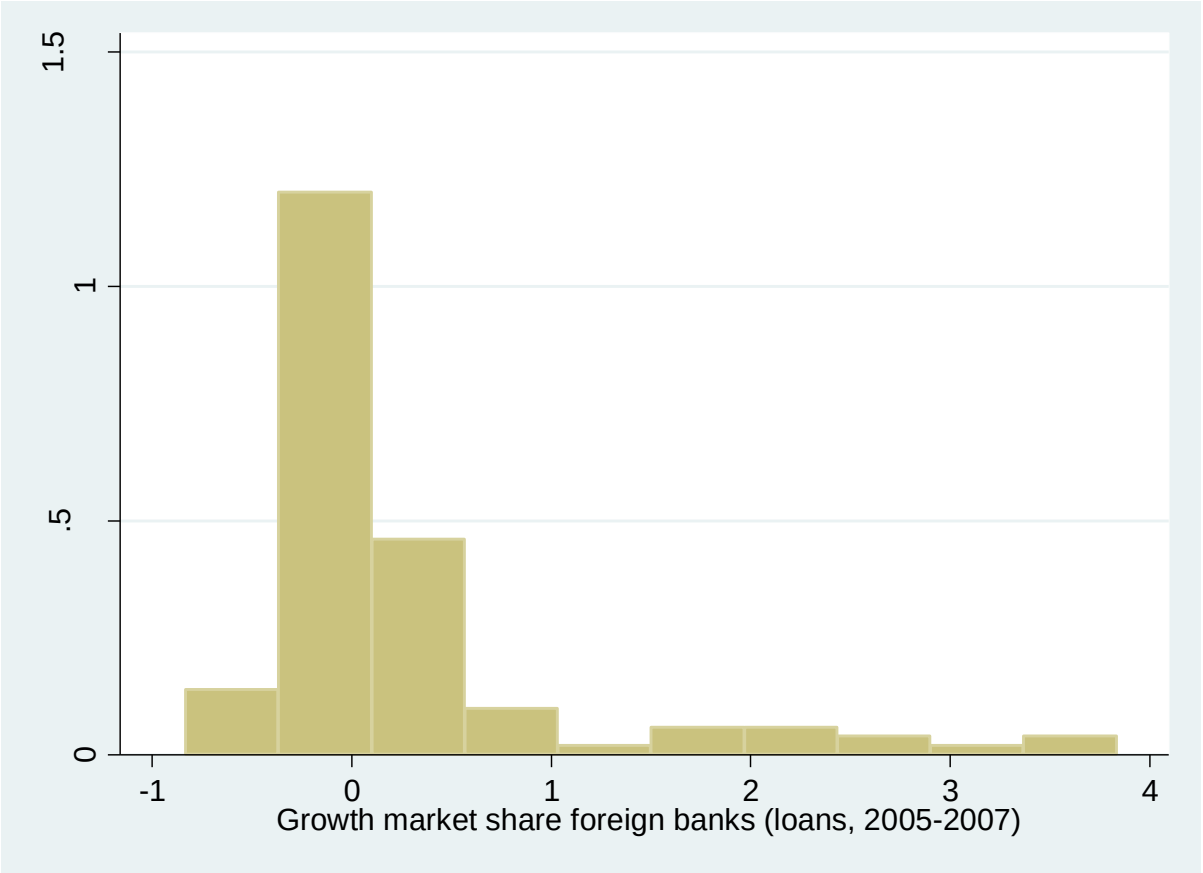

## How to adapt MAPs (or CFMs)?

# B2. Ex-ante: foreign banks and credit booms
# In general, role of foreign banks in credit boom pre-GFC small



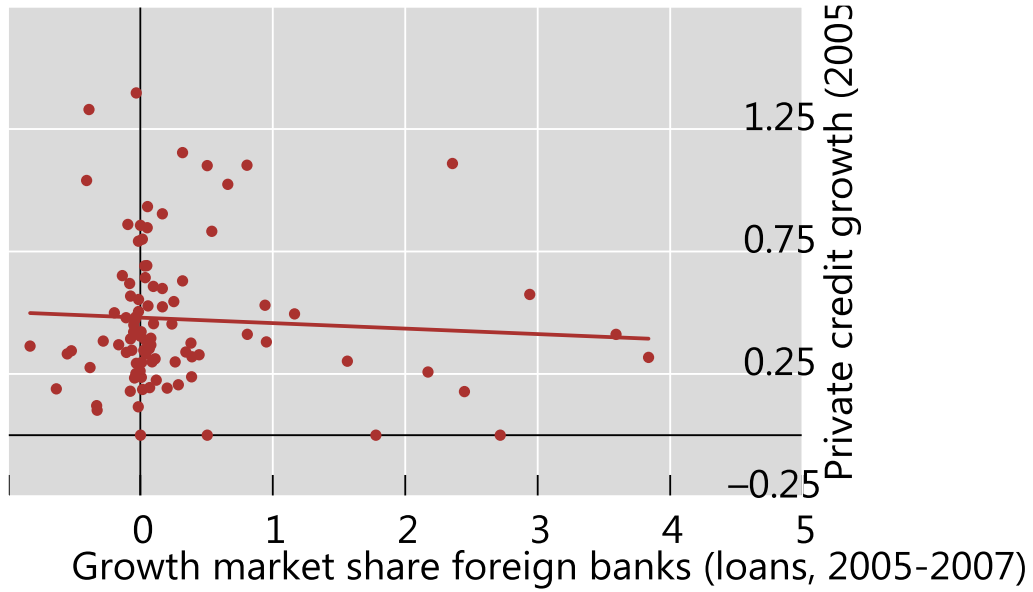

- Positive, but small correlation market share of foreign banks and private credit growth (0.12)

# In many markets, however, foreign banks grew faster than domestic banks. So maybe still adverse effects?




- In 63% of host countries foreign banks increased market share between 2005–07. So, foreign banks "replaced" domestic banks, but did they add to booms?

# While growth market share foreign banks relates to credit growth, effect appears to be negative and small




- Only small and <u>negative</u> correlation between increase in market share foreign banks and private credit growth. In general, weak relationship between foreign bank presence or growth and credit boom in host

# Rather, heterogeneity (again) among banks explains most

- Foreign ownership not correlated with banks' loan growth in 2005–2007 in 93 countries, but bank characteristics matter:
  - No differential effects foreign banks, <u>but:</u>
  - Young (+); Market share (-); Solvency (+); Loan to deposit (-); Liquidity (+)
  - Foreign banks differ from domestic banks in many such ways…
- <u>And</u> host country credit growth most important for bank loan growth
- Foreign banks can import boom (more likely grow faster) if:
  - Credit boom at home; Lax capital regulation at home; Active in same region as parent HQ (Europe)
- Caveat: results based on one (important) boom

# Thus: keep an eye on bank characteristics, what happens in the home country (and with many other factors presumably at play..

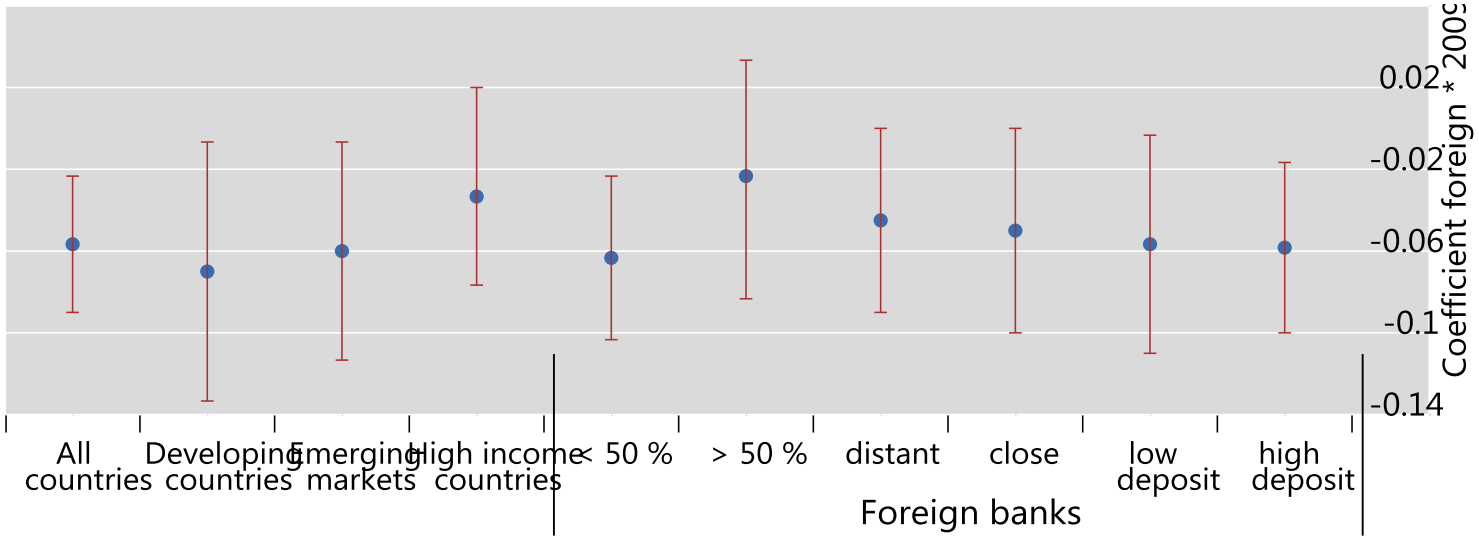
- While mostly bank fundamentals, home country characteristics can matter
  - Foreign banks import 0.5 times the credit growth at home to host
  - A one st dev reduction in stringency of capital requirements at home increases loan growth in host by 9 percentage points
- Other factors, not analysed, might play a role, too:
  - Competition in the home country
  - Interactions local lending and cross-border bank flows
  - Spillovers of capital adequacy requirements, other regulations

How to adapt MAPs (and CFMs)?

# B3. Ex-post: foreign banks and financial stability. Generally favorable, but again mixed in (global) stress

- Risk-sharing can often be positive…
  - Global banks often support their subs when stress in host market
- But (funding) shocks to parent banks/home can transmit to subsidiaries, negatively impact local lending
  - Foreign contracted lending 6 pp more than domestic in 2009
  - In eastern Europe esp, firms became more credit constrained
- But effects are again not homogeneous…
  - Heterogeneity in import of shocks and foreign vs domestic

# While in 2009, foreign banks cut back credit, drops varied by market and bank characteristics




The figure shows the point estimates and 5 and 95 percent confidence intervals of the foreign ownership dummy interacted with a dummy which is one if the year is 2009 in a regression estimated using different country samples. All regressions include several bank level controls (see main text), bank and country-year fixed effects. The model is estimated using OLS with standard errors clustered at the bank level.

# Heterogeneity related to bank, host, home, bilateral factors

- Foreign did not cut more compared to internationally-funded domestic banks
- Lower decline when foreign bank big local deposit-taking
  - In eastern Europe, foreign banks contracted more, but not in Latin America, possibly importance of local deposit taking
- No difference foreign/domestic when foreign large
  - Suggest commitment to the market mattered
- Re-allocation of capital within towards "important" subsidiaries though
  - Some evidence of internal market frictions

Again, how to adapt MAPs (or CFMs)?

# C. MAPs and Spillovers. 1: Why Exactly are MAPs Needed?

- Finance is **Procyclical**, subject to booms/busts
  - Runs often through asset values and leverage
- Finance displays much **Interconnectedness**
  - Contagion within financial system (eg, TBTF)
- Procyclicality interacts with interconnectedness

Microprudential, monetary, other do not suffice =>MAPs

- But MAPs need justification: externalities or to compensate for other policy causes, eg, microprudential, tax deduction
- Theory still short of accepted paradigm for MAPs and CFMs
- Also applies to international dimensions

# C2. Empirical Evidence: Still Early Days

- More MAPs in place over time, but ACs still less than EMs and DCs
- And evidence still being collected. So far:
  - Borrower-based ("LTVs"): Work for real estate, harder to circumvent. But politically "costly"
  - Financial-institutions: Better known. But easier to evade, FI costly
  - All: Temporary cooling, but not always sustained, buffers seldom sufficient for bust. And need to differentiate by country and MAPs
- Know less on costs, interactions, side effects of MAPs
  - Rarely explicitly aimed at externalities/market failures. Interactions with other policies. Financial, economic, political costs and risks. Adaptations. Costs. Rules vs discretion, calibrations.
- Partly due to limited cases, data and research on effects, risks, etc

# MAPs Less Effective in Open Economies, Suggesting "Evasion" Circumvention

- Higher use of MAPs → increases cross-border claims
  - One standard deviation increase in MAPs increases cross-border ratio in open countries by 6 pp, about 1/3rd its standard deviation

  ⇒ Consider MAPs together with CFM tools (next...)
- Country characteristics, besides type, matter
  - MAPs not more effective with higher GDP/capita or development. Less impact with more developed finance, more flexible exchange rate

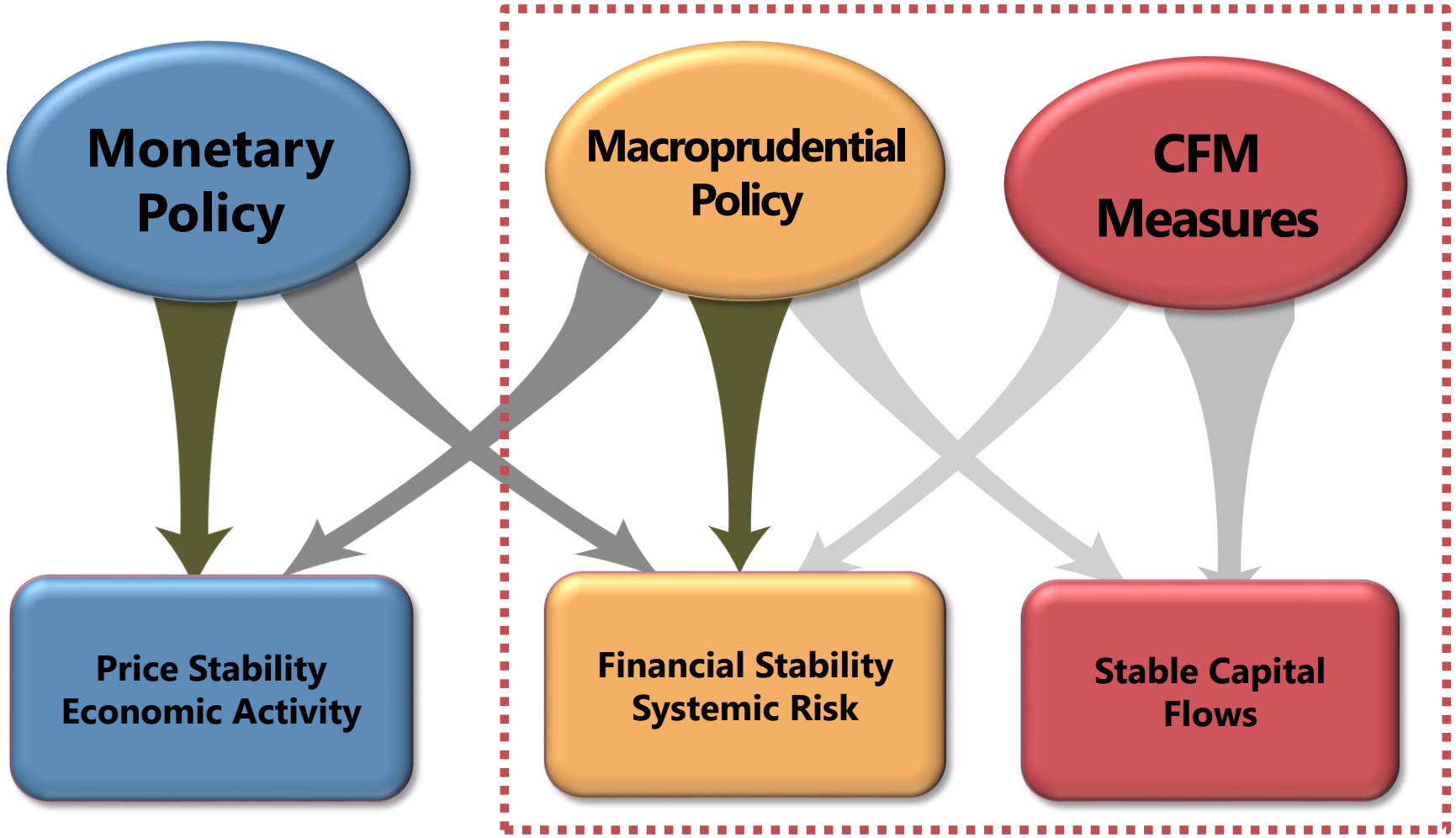
  ⇒ More developed financial markets, tap alternatives, circumvent MAPs
- Overall spillovers of MAPs, analysed using microdata, even if generally relatively small, found to greatly vary (Buch and Goldberg, 2016)

# International Dimensions Especially Important for Small Open Economies

- Monetary (MOP) and exchange rate policies in small open economies do not always follow standard model
  - Partly responses to spillovers
- MOPs and MAPs hard to coordinate internationally (gains small/uncertain, cooperation more difficult, with limited forums, or just ex-post, when in crises)
- ➢ Some countries may therefore benefit from CFMs

How to use, balance, interface MAPs and CFM tools?

# How to use, balance, interface MAP and CFM tools?



# Distinctions, but also overlaps between MAPs and CFMs

- Some distinctions between MAPs and CFMs can be made
  - *Operational*: type of capital flows: bank intermediated vs other; gross vs net flows; foreign exchange vs local currency; coverage
  - *Legal*: residents vs non-residents
- But also much overlap and both may be needed
  - Some MAPs can affect non-residents more, thus like CFMs
  - CFMs needed where: MAPs do not apply; or when MAPs distort
    - Bond markets; or SME less access to external financing
- Regardless, use of MAPs and CFM to be guided
  - Unilaterally and multilaterally

# Overall: Heterogeneity makes it hard to draw conclusions, at least for now, except for seeking common approaches

- Spillovers: hard to document, explain, and harder whether good or bad
- Besides MAPs (and CFMs), many other regulatory actions can (unintended) reduce (benefits of) financial integration
- Much to be done on development of a framework and empirics
- Makes (assessment of best) policies very hard. Answers still elusive
  - Larry Summers, as in Churchill's on democracy: "Capitalism is the worst form of economics — except for all the others that have been tried."
  - "While not perfect, aim for open, transparent, diverse, contestable systems…" Thus seek: Common approaches, to reduce risks of distortions, arbitrage
- In the meantime, continue with research…

# Based on, among others:


1. Cerutti, E, S Claessens, and L Laeven (2016): "The Use and Effectiveness of Macroprudential Policies: New Evidence", *Journal of Financial Stability*.
2. Cerutti, E, S Claessens and D Puy (2015): "Push Factors and Capital Flows to Emerging Markets: Why Knowing Your Lender Matters More Than Fundamentals", *IMF Working Paper* 15/127.
3. Cerutti, E, S Claessens, L Ratnovski (2016): "Global Liquidity and Cross-Border Bank Flows", *Economic Policy*.
4. Claessens, S (2013): "Interactions between Monetary and Macroprudential Policies in an Interconnected World", mimeo, IMF.
5. Claessens, S (2015): "An Overview of Macroprudential Policy Tools", *Annual Review of Financial Economics*.
6. Claessens, S (2016): "Global Banking: Recent Developments and Insights from Research", *Review of Finance*.
7. Engel, C (2016): "Macroprudential Policy under High Capital Mobility: Policy Implications from an Academic Perspective", Journal of the Japanese and International Economies and *NBER Working Paper* 20951,
8. IMF (2013): "The Interaction of Macroprudential and Monetary Policies", *Policy Paper*.
9. —— (2015): "Measures which are Both Macroprudential and Capital Flow Management Measures: IMF Approach", December.
10. —— (2016): *World Economic Outlook*, Chapter 1, October.
11. OECD (2015): "The OECD's Approach to Capital Flow Management Measures Used with a Macro-Prudential Intent", *Report to the G-20 Finance Ministers*, April.
12. Ostry, J, A Ghosh, M Chamon, and M Qureshi (2012): "Tools for managing financial-stability risks from capital inflows", *Journal of International Economics*, vol 88, no 2, pp 407–421.
13. Ostry, J, A Ghosh, K Habermeier, L Laeven, M Chamon, M Qureshi, and A Kokenyne (2011), "Managing Capital Inflows: What Tools to Use?" IMF Staff Discussion Note 11/06.