

Changes in Prudential Policy Instruments A New Cross-Country Database

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MOTIVATION

- ▶ With the recent crisis, macroprudential policies (MAPs) have received greater attention
- ▶ But knowledge on MAPs still remains limited
 - Limited experiences (many MAPs introduced after GFC)
 - Incomplete data on the use of prudential tools
- ▶ Project part of the 2015 International Banking Research Network (IBRN) initiative
- ▶ IMF WP/16/110 and FRB International Finance Discussion Paper No. 1169.
- ▶ Our dataset targets a current gap in the literature

HOW DOES IT FIT IN THE LITERATURE?

External Validity:
Cross-country studies

Cerutti, Claessens & Laeven (2016)	Countries	Period	Policies
	119	2000-13	12

Documents MAPs usage (whether it is in use or not) and analyzes their effectiveness

Cerutti, Correa, Fiorentino & Segalla (2016)	Countries	Period	Policies
	64	2000Q1-2014Q4	5

Objective: Capture changes in prudential policy intensity in a cross-country, cross-time consistent way

Internal Validity:
Identification

Jimenez, Ongena, Peydro & Saurina (2015)	Countries	Period	Policies
	Spain	1998Q4-2010Q4	DP

Identification: micro-level demand controls (e.g., firm*time FEs)

DESCRIPTION OF THE DATABASE (1)

- ▶ Documents usage intensity of prudential policies
- ▶ Country coverage: 64 (30 AEs and 34 EMs)
- ▶ Time coverage: 2000-2014 (quarterly data)
- ▶ “Prudential” = wider coverage to avoid omissions (actions deemed as microprudential, but with macroprudential implications)

We focus on the most widely used prudential instruments

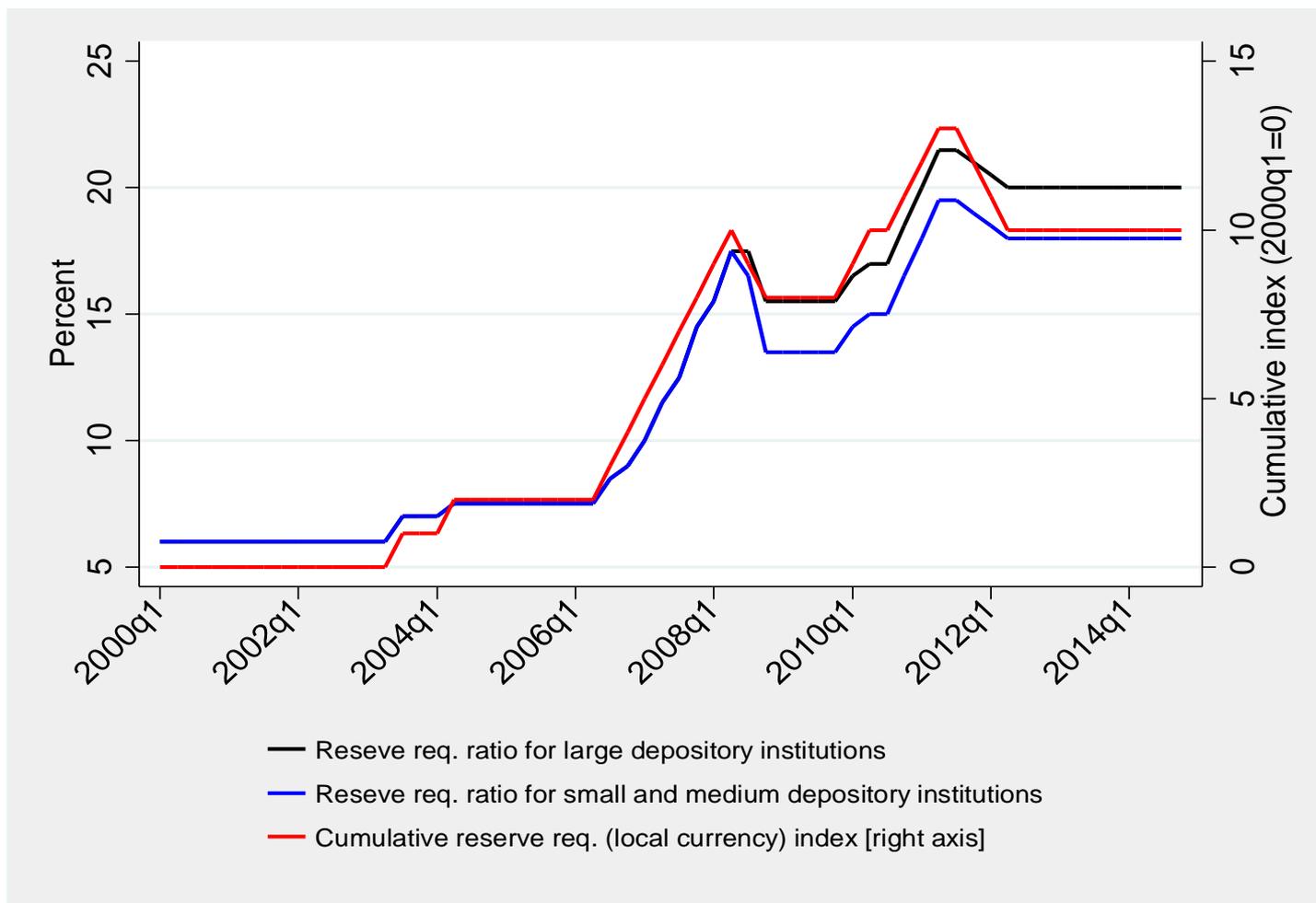
DESCRIPTION OF THE DATABASE (2)

- ▶ **5 type of prudential instruments:** interbank exposure limits, concentration limits, LTV caps, reserve requirements, and capital buffers.
- ▶ Some prudential instruments broken down by sub-components:
 - ▶ Capital buffers:
 - ▶ General capital requirements
 - ▶ Sector specific capital buffers (SSCB) on real estate loans
 - ▶ SSCB consumer loans
 - ▶ SSCB other loans
 - ▶ Reserve requirements:
 - ▶ Local currency
 - ▶ Foreign currency

DESCRIPTION OF THE DATABASE (3)

- ▶ **“Usage intensity”**: the database records a tightening (+1), or loosening (-1) or no-change (0) in each quarter when the instrument is in place.
- ▶ For reserve requirements and the SSCB, changes may be recorded as integers $>+1$ or <-1 to capture the intensity of these instruments as closely as possible.
- ▶ **Cumulative indexes**: the database includes indexes that record the cumulative changes of a given instrument since 2000 Q1.

RESERVE REQUIREMENT RATIOS AND CUMULATIVE INDEX FOR CHINA



DESCRIPTION OF THE DATABASE (4)

▶ **Constructed aggregates:**

- ▶ *PruC*: country index by time t and country c , equal to 1 if the sum of the 9 instruments is ≥ 1 and -1 if the sum of the instruments is ≤ -1 , 0 otherwise.
- ▶ *PruC2*: same as above, but all individual instruments are adjusted to have maximum and minimum changes of 1 and -1 in a given quarter.
- ▶ *sscb*: sum of changes in sector-specific capital buffers across the residential, consumer, and other sectors.

▶ **Missing values:** entries are recorded as missing if

- ▶ there is no information for an instrument in a country
- ▶ the instrument is not available to policymakers
- ▶ [These missing values are explicitly coded in the database]

SOURCES & AVAILABILITY

▶ Sources:

Primary sources: National authorities either through the IBRN or the IMF or country webpages

Secondary sources (partial list): IMF's GMPI 2013 survey, Cerutti, Claessens, and Leven (2016), Kuttner and Shim (2013), Akinci and Olmstead-Rumsey (2015), and Reinhardt and Sowerbutts (2015).

▶ Each regulatory change is documented in the internet appendix (brief description, source, etc.)

▶ Link to the dataset:

<https://www.newyorkfed.org/ibrn>

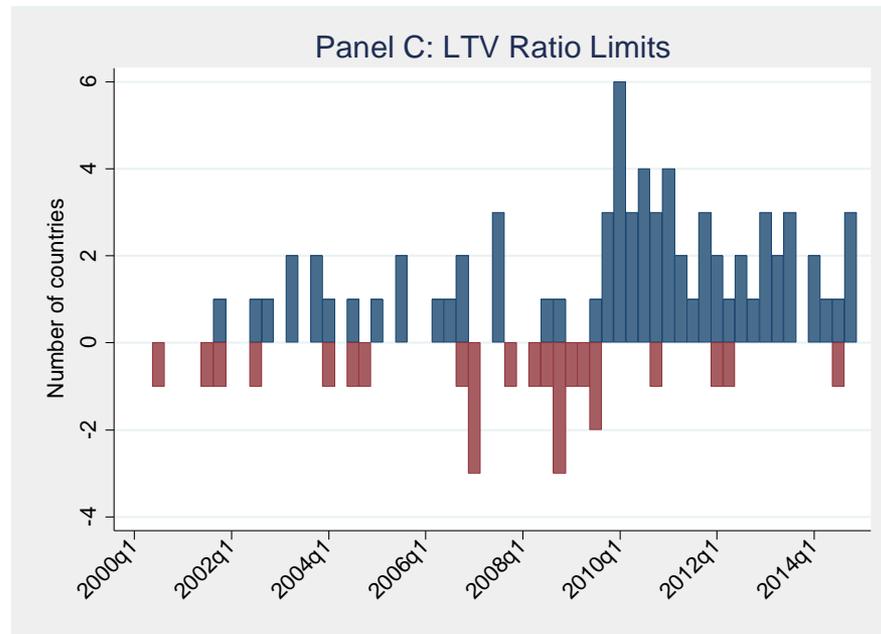
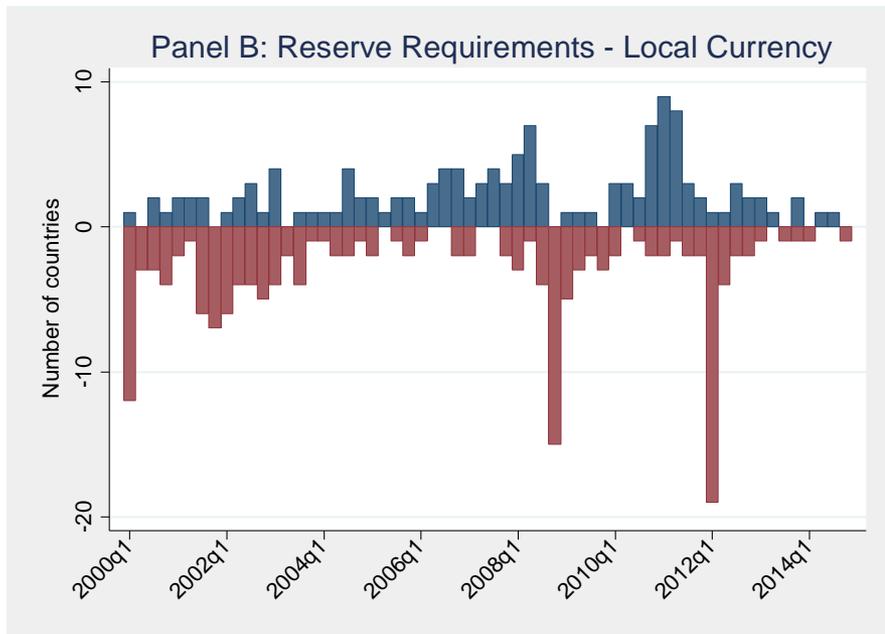
RECORDED USAGE OF PRUDENTIAL POLICIES (I)

- ▶ RR and LTV have the largest number of tightening and loosening episodes
- ▶ CONC and INTER not often adjusted in intensity
- ▶ Cap. Req. tightened especially after GFC

	Distinct countries with instrument changes	Countries with tightening episodes	Countries with loosening episodes	Countries with instrument
SSCB Real estate loans	22	20	9	64
SSCB Consumer loans	9	7	3	64
SSCB other loans	12	11	3	64
Concentration limits	22	21	2	36
Interbank exposures	14	13	1	22
RR foreign currency	21	20	17	64
RR local currency	46	29	44	64
Loan to value ratio limits	36	33	14	38
General capital requirements	55	55	0	57

RECORDED USAGE OF PRUDENTIAL POLICIES (II)

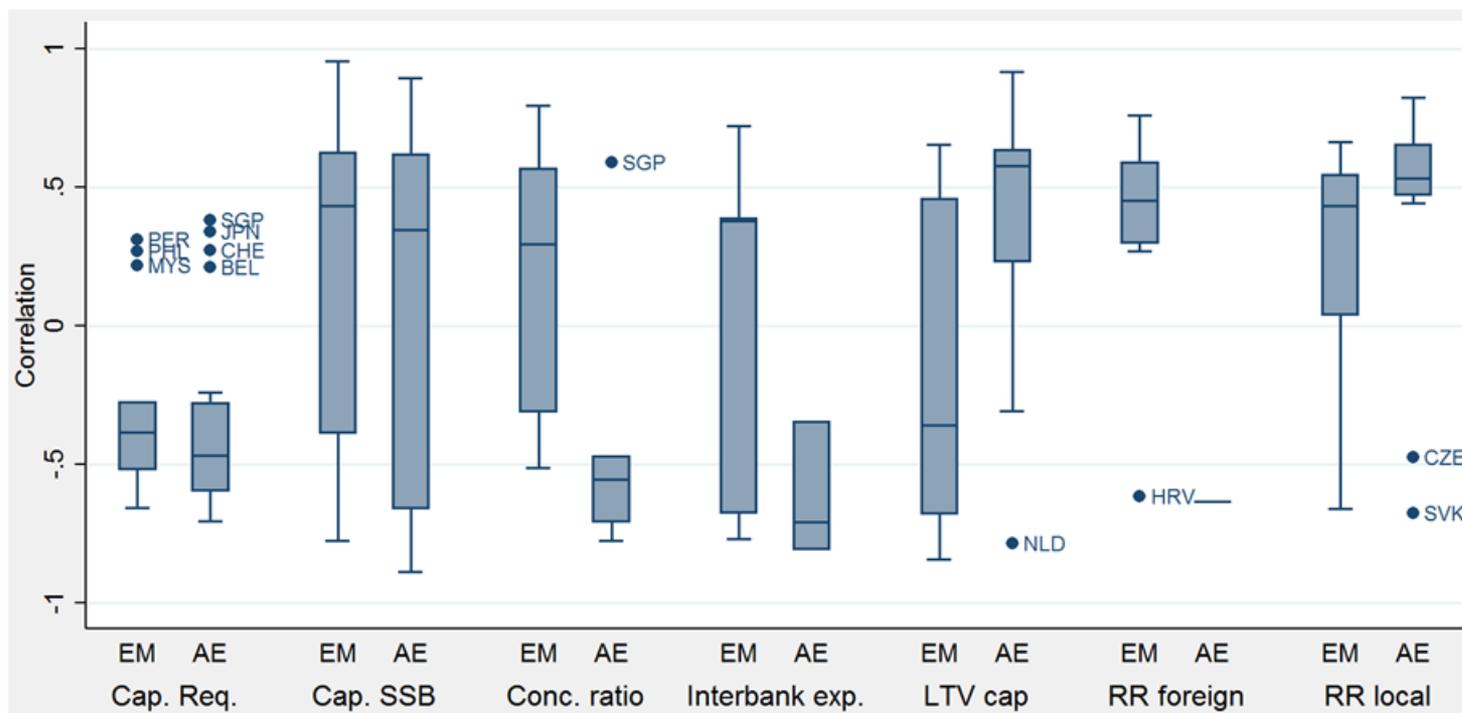
- ▶ RR loosening coincided with GFC and the European sovereign debt crisis
- ▶ LTV tightened often after GFC (counter acting loose monetary policies in several countries)



Cyclical or counter-cyclical usage w.r.t. credit?

- ▶ Cap. SSB, CONC, INTER: not many statistically significant correlations and broadly distributed
- ▶ LTV and RR show more counter-cyclical usage

Distribution of correlations between intensity changes in prudential instruments and real credit growth

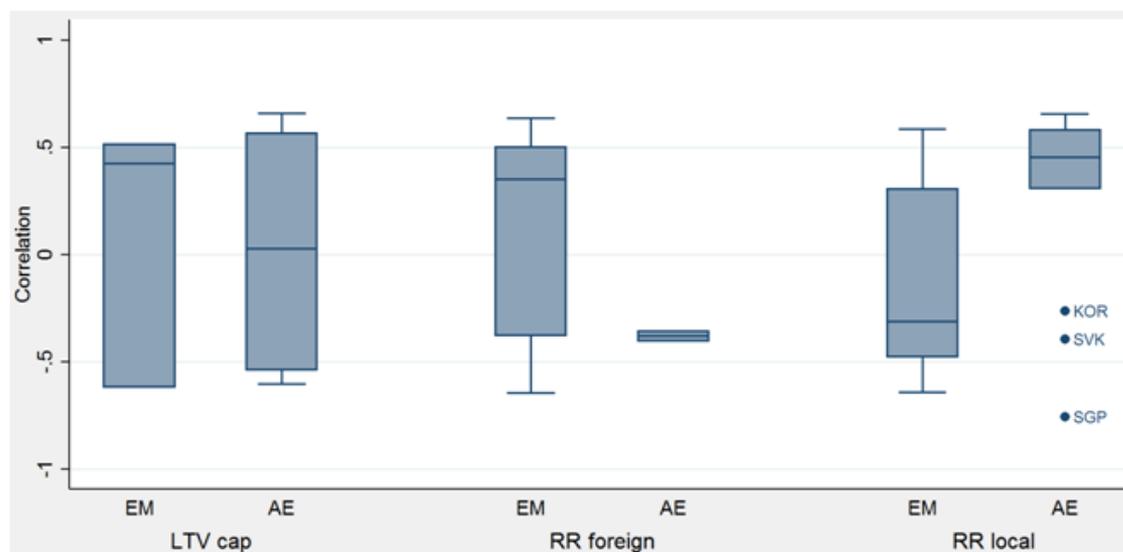


Note: Only statistically significant correlations at the 10 percent level or less are plotted.

Complementary usage with policy rates?

- ▶ LTV used with higher policy rates in some AEs, but also to tighten while lowering policy rates (e.g., Canada, Hong Kong)
- ▶ RR (Local) show more counter-cyclical usage, but there is general heterogeneity

Distribution of correlations between intensity changes in prudential instruments and policy rates



Note: Only statistically significant correlations at 10 percent or less are plotted.

LIMITATIONS

- ▶ These indexes capture the time-series variation of a prudential instrument for a country.
- ▶ Differences in the intensity of prudential indexes across countries are not well captured, as we do not explicitly code cross-sectional differences in the levels of these instruments when they are introduced.
- ▶ Prudential instruments are multidimensional (not captured by a single number), some of the mappings to the indexes may be subjective. Users can adjust these mappings with the detailed description of the changes reported in the internet appendix.

COMPARISON TO OTHER DATABASES

- ▶ **Cerutti, Claessens, Laeven (2015)**
 - ▶ More country and instrument coverage, but without tracking intensity of usage.
- ▶ **Akinci and Olmstead-Rumsey (2015)**
 - ▶ Some overlapping instruments, but a more detailed focus on the housing market.
- ▶ **Reinhardt and Sowerbutts (2015)**
 - ▶ Considerable overlap in terms of instruments. A stronger focus on macroprudential usage rather than overall prudential interventions.

CONCLUSIONS

- ▶ The database contributes to the increasing number of sources available to analyze the impact of micro- and macro-prudential policies.
- ▶ It provides disaggregated data, including the description of instrument changes and sources, that will allow researchers to adapt the indexes to their research question.
- ▶ In particular, given its quarterly frequency, the database can be used to analyze “high-frequency” movements in indicators affected by these instruments.
- ▶ Its comprehensive coverage of 64 countries and the inclusion of country codes (IFS and BIS), facilitates the integration of this database with other sources.

BACKGROUND SLIDES

FINDINGS USING THE DATASET (IBRN PROJECT)

- ▶ **International Banking Research Network (IBRN)**
 - ▶ Created in 2012 by researchers interested in international banking.
 - ▶ Currently composed of researchers from more than 20 central banks, the International Monetary Fund, and the Bank for International Settlements.
 - ▶ Researchers work on policy-relevant questions using confidential information on banks' international activities.
- ▶ **Current project:** analyzes the effects of regulatory changes on global banking activity.
 - ▶ Includes papers from 15 central banks and 2 international organizations.
 - ▶ Interbank exposure limits, loan-to-value caps, and reserve requirements are the instruments that more frequently spill over internationally.