

# Capital Flow Management Measures: A New Dataset

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# Renewed debate on capital controls

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- Key policy questions:
  - Are capital controls effective in managing volatile capital flows?
  - Do capital control actions have spillover effects?
  - Are capital controls macroprudential or mercantilist?
- Need datasets that better capture how policy has evolved over time, to assess its motivations and impact

# A new dataset on capital flow management measures

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- Captures *changes* in capital account regulations, or policy actions
  - Close to instrument level precision
  - Higher frequency than existing datasets on capital controls
  
- 21 EMEs, 2001Q1- 2015Q4\*

\*Currently posted online for 17 EMEs, 2001Q1-2011Q4 as data appendix to Pasricha, Falagiarda, Bijsterbosch, Aizenman (2015). Data from 2012-2015 updated in Pasricha (2017), not yet posted online.

# Outline of presentation

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- Dataset
- Some trends
- Comparison with other datasets
- Some examples of data usage
- Conclusions

# The dataset captures policy actions

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- **A policy action:** Easing or tightening of a regulation affecting *international* transactions in assets
  - **Capital controls:** Discriminate based on residency
  - **Currency based-measures:** Discriminate based on currency of transaction
- Policy announcements often contain actions on multiple regulatory instruments. We split these and count each action separately.

# Identifying policy actions at granular level

Example: RBI A.P.(DIR Series) Circular No.43; 1 announcement, 2 actions

Country	India	India
Announcement Date	29 May 2008	29 May 2008
Effective Date	29 May 2008	29 May 2008
Policy Action	<b>Indian firms' foreign borrowing</b> subject to <b>new all-in-cost ceiling</b> of 200 bps above LIBOR (increased from 150 bps), and 350 bps for longer maturity loans (increased from 250 bps)	Infrastructure firms allowed to borrow abroad for certain purposes, up to 100 million USD and other firms up to 50 million USD ( <b>enhancement of limits</b> ).
1. Inflow/Outflow	Inflows	Inflows
2. Easing/Tightening	Easing (+1)	Easing (+1)
3. Capital Control/ Currency Based?	Capital Control	Capital Control
4. Prudential Type?	No	No
5. IIP Category	Other Investment liabilities	Other investment liabilities
<b>6. Quant/Price/Monitoring</b>	<b>Price-based</b>	<b>Quantitative</b>

# Dataset contains 1164 policy actions for 21 EMEs, 2001Q1- 2015Q4

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- Sources: IMF AREAER, Central Banks/Regulators' websites, OECD reports, news sources, other research papers
- Frequency:
  - Original data is daily, with both announcement and effective dates of policy actions.
  - Dataset posted online is quarterly, and uses effective dates of changes
  - **Aggregation methodology:** Count the number of actions per quarter, by type (Inflow easing, Outflow easing, etc.)

# Two versions: Unweighted and Weighted

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- **Unweighted data:** Equal weight to every action (1)
  - Example: Number of inflow tightenings per quarter
- **Weighted data:** To capture intensity, policy actions are weighted by the share of foreign balance sheet they target
  - Example: A tightening of FDI outflows is weighted by  $\text{FDI assets} / \text{total international assets}$



# Aggregated Quarterly Data: Summary

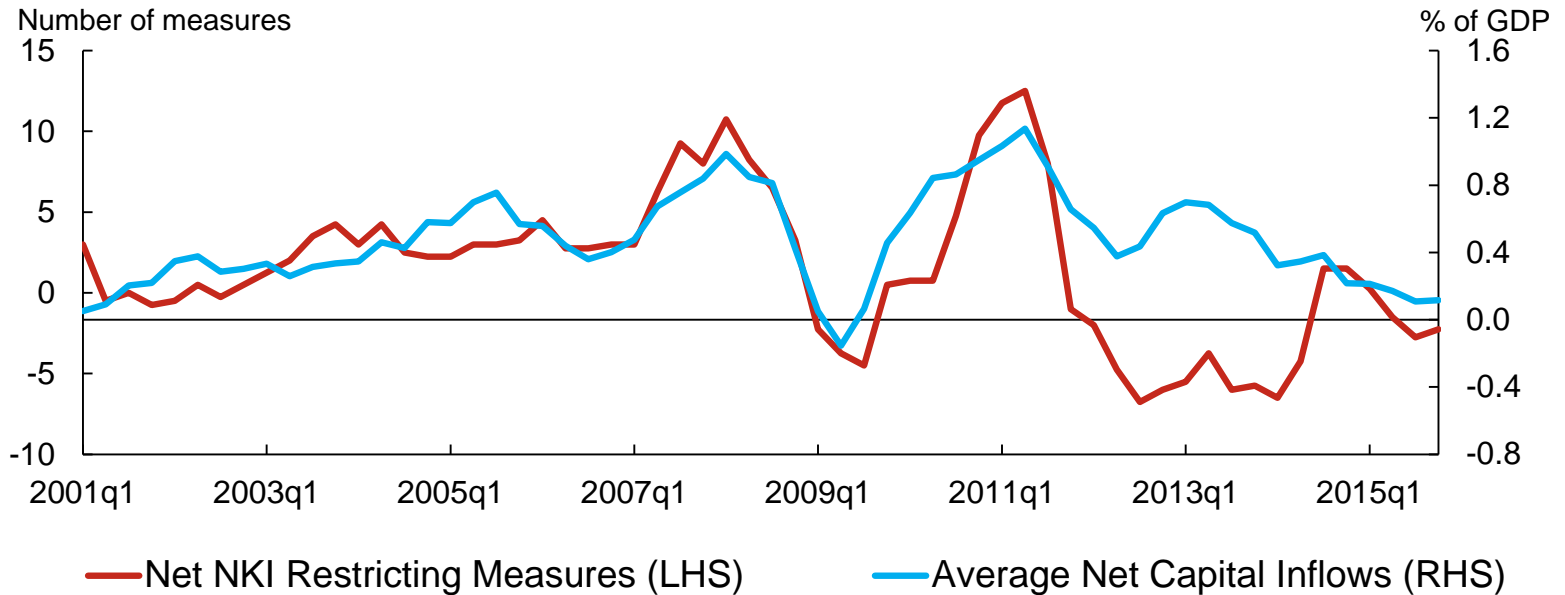
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- Posted data has 24 basic series: 12 unweighted and 12 weighted. Examples:
  - ❖ No. of Inflow Easings per quarter
  - ❖ No. of non-FDI Inflow Easings per quarter
  
- And some summary measures, for example:
  - ❖ Net Inflow Tightening = Inflow Tightenings – Inflow Easings
  - ❖ Net Outflow Easings = Outflow Easings – Outflow Tightenings
  - ❖ Net NKI Restricting Measures = Net Inflow Tightening + Net Outflow Easings

# Net NKI Restricting Measures (Net Inflow Tightening+ Net Outflow Easing) respond strongly to Net Capital Inflows

## 21 Emerging-Market Economies

4-Quarter moving averages



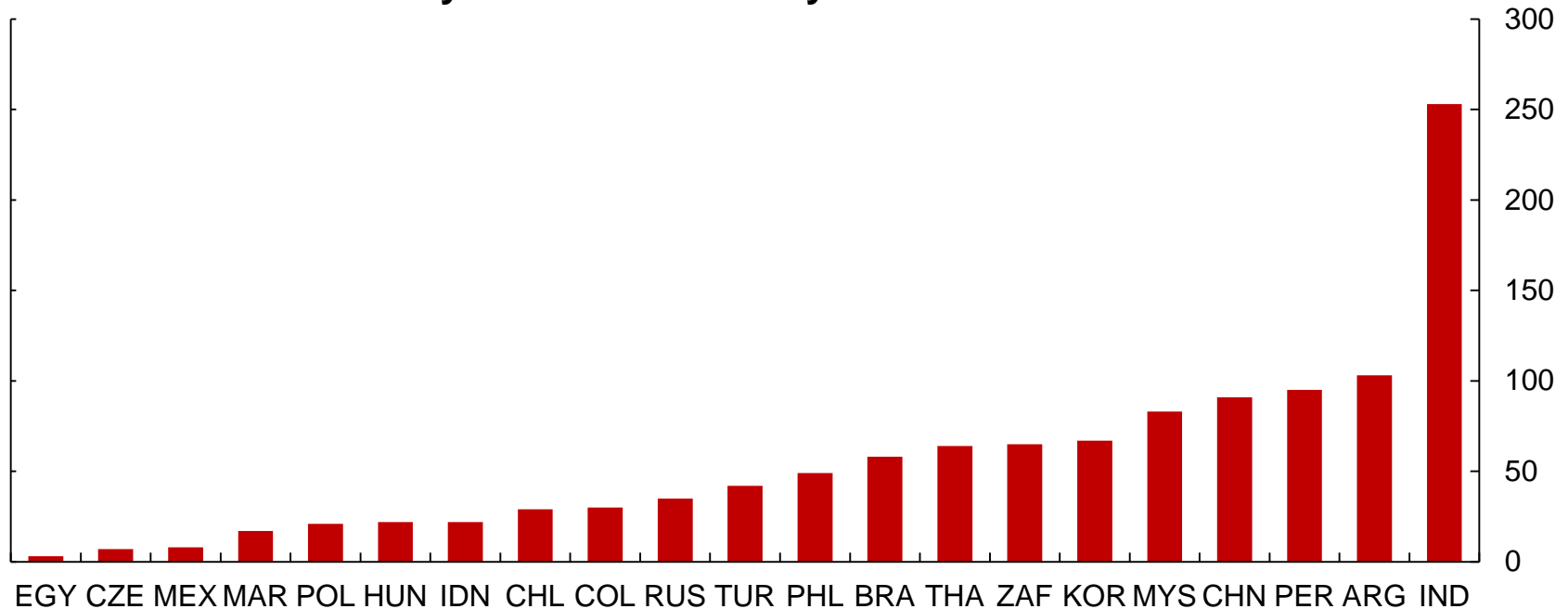
Source: Authors' calculations and IMF BOPS

Last observation: 2015q4

Note: Net NKI Restricting actions are computed as ( Inflow Tightenings - Inflow Easings) + (Outflow Easings- Outflow Tightenings). The measures are unweighted and include currency-based measures.

# Countries rely on capital flow management measures to different degrees

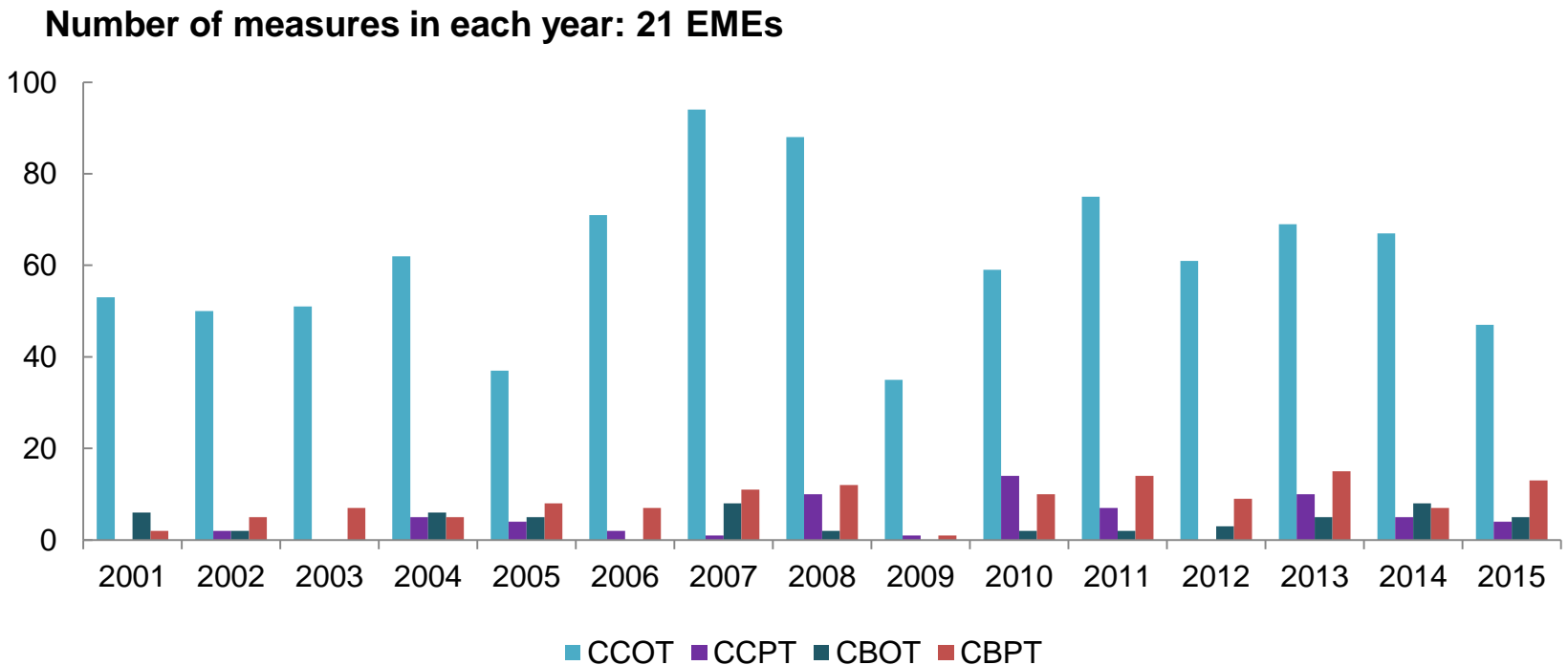
**Total Number of Policy Actions: 1 January 2001 to 31 December 2015**



Last observation: 31 December 2015

Source: Pasricha, G. K. (2017) "Policy Rules for Capital Controls" Paper presented at Canadian Economic Association Meetings, 2017.

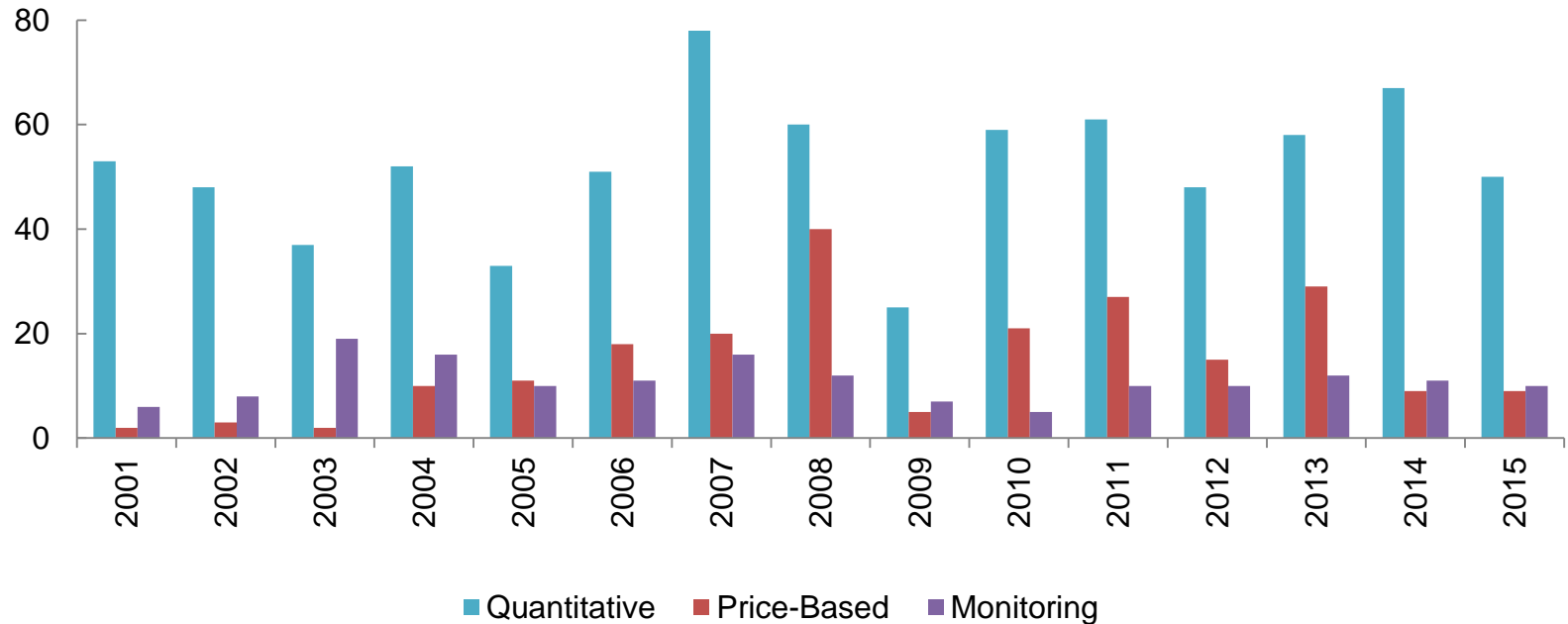
# Most policy actions were non-prudential type capital controls



Note: Abbreviations used are: CCOT - capital control, non-prudential type; CCPT - capital control, prudential type; CBPT - currency-based measure, prudential type; CBOT - currency-based measure, other

# Most policy actions were quantitative in nature

Total number of policy actions: 21 EMEs



Source: Authors' calculations

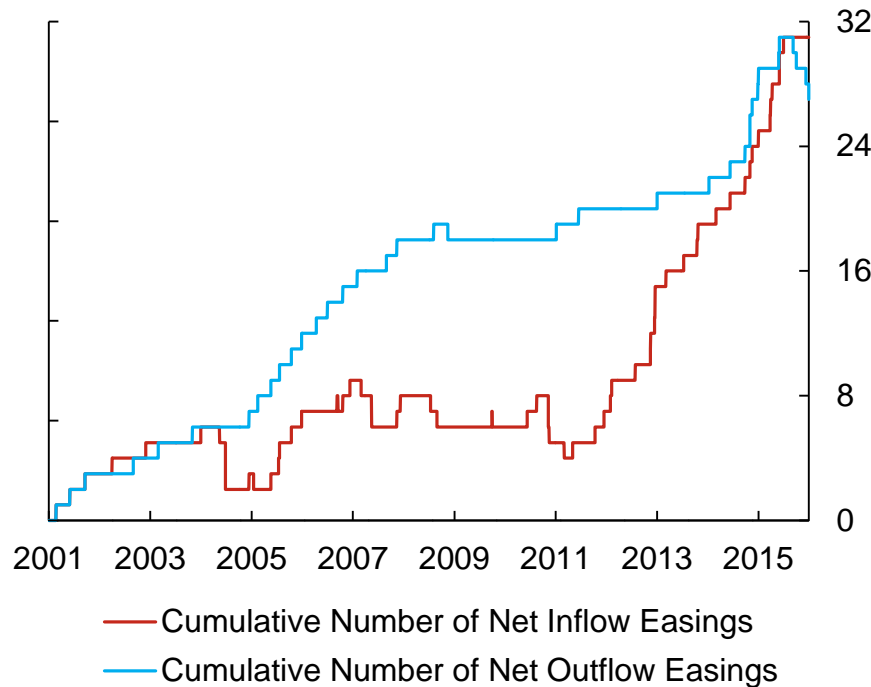
# Comparison with indices of capital account openness

	Chinn-Ito (2006)	Fernandez et al. (2016)	Pasricha et al. (2015)
Level or Change	Level	Level	Change
Direction of Flows	No	Inflows and Outflows	Inflows and Outflows
AREAER Capital	1	10	N/A
Transactions Asset Classes			
Frequency of Observation	Annual	Annual	Daily
Frequency Available Online	Annual	Annual	Quarterly
Number of Countries	182	100	21
Period of Coverage	1970-2014	1995-2015	2001-2015
Best use	Cross-country comparisons of levels of openness; Identifying "Walls" vs. Gates"		Capturing evolution of policy
Caution!	First differences may not capture policy actions		Cumulative changes not capture level of openness

Notes: N/A = Not applicable, as the Pasricha et al. (2015) dataset uses a different classification scheme. Chinn-Ito (2006) index uses only 1 category under "capital transactions" but 4 other categories.

# Indices of capital account openness do not capture all the variation in policy

**China: Pasricha et al. (2015) Index**  
Higher values = More openness

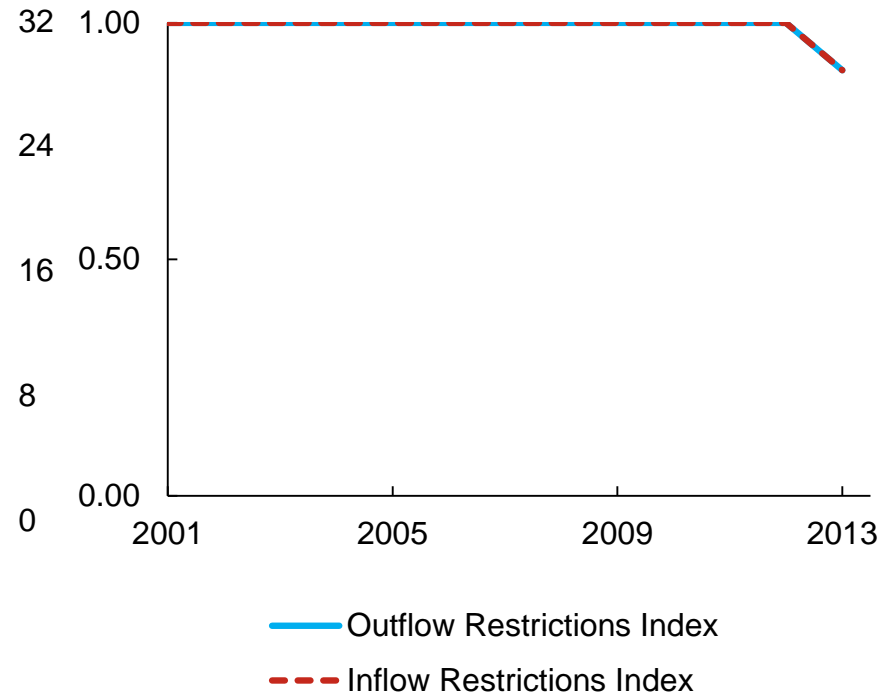


Note: The actions include currency-based measures and others not specific to in/outflows

Source: Pasricha (2017)

Last observation: 31 December 2015

**China: Fernandez et al. (2016) Index**  
Higher values = More restrictions

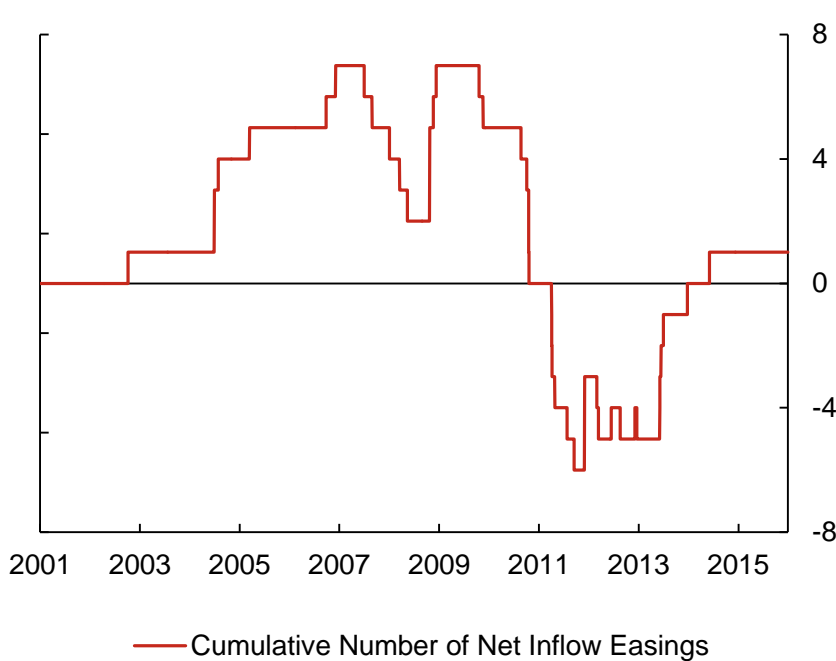


Source: Fernández, Klein, Rebucci, Schindler and Uribe (2016)

Last observation: 2013

# Indices of capital account openness do not capture all the variation in policy

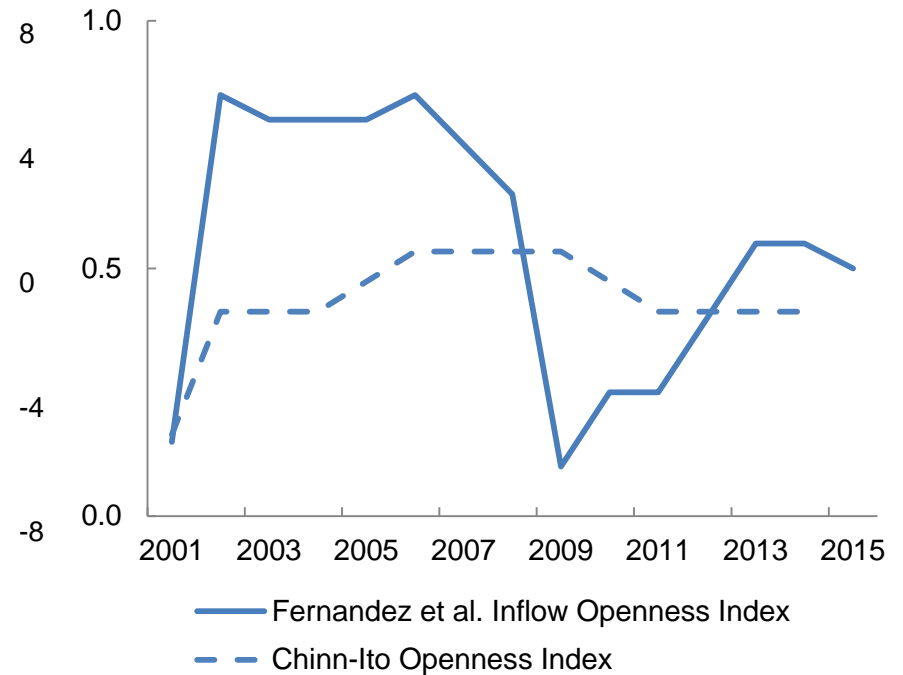
**Brazil: Pasricha et al. (2015) Index: Unweighted**  
Higher values = More openness



Source: Authors' calculations

Last observation: 31 December 2015

**Brazil: Chinn-Ito and Fernandez et al. Indices**  
Higher Values = More Openness



Sources: Fernandez et al. (2016), Chinn-Ito (2006)

Last Observations: 2015 (Fernandez et al), 2014 (Chinn-Ito)

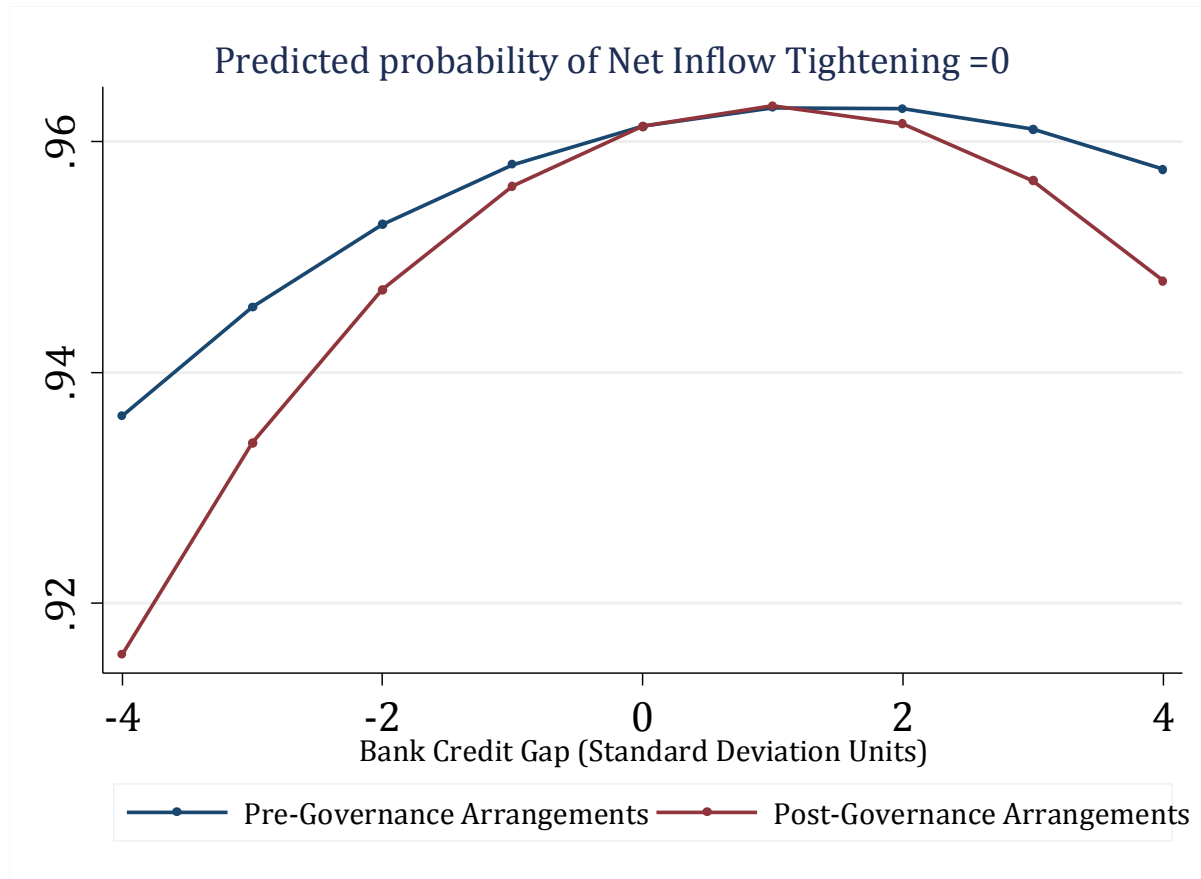


# Comparison with other datasets on policy actions

	<b>Pasricha et al. (2015)</b>	<b>Forbes et al. (2015)</b>	<b>Ahmed et al. (2015)</b>	<b>Chantapacdepong and Shim (2015)</b>
Level or Change	Change	Change	Change (cumuated)	Change
Direction of Flows	Inflows and Outflows	Inflows and Outflows	Inflows	Inflows
Currency-based Measures	Yes	Yes	No?	No
Type of Instrument I	Prudential- Non-Prudential	Prudential- Non-Prudential	No?	No
Type of Instrument II	Price-Quantitative- Monitoring	No	No?	No
Frequency of Observation	Daily	Daily	Daily	Daily
Frequency Available Online	Quarterly	N/A	Quarterly	Daily
Number of Countries	21	60	19	12
Period of Coverage	2001-2015	2009-2011	2002-2012	2004-2013
Number of Policy Actions	1164**	220	235	364

\*\* Data for 2012-2015 updated in Pasricha (2017), not yet posted online.

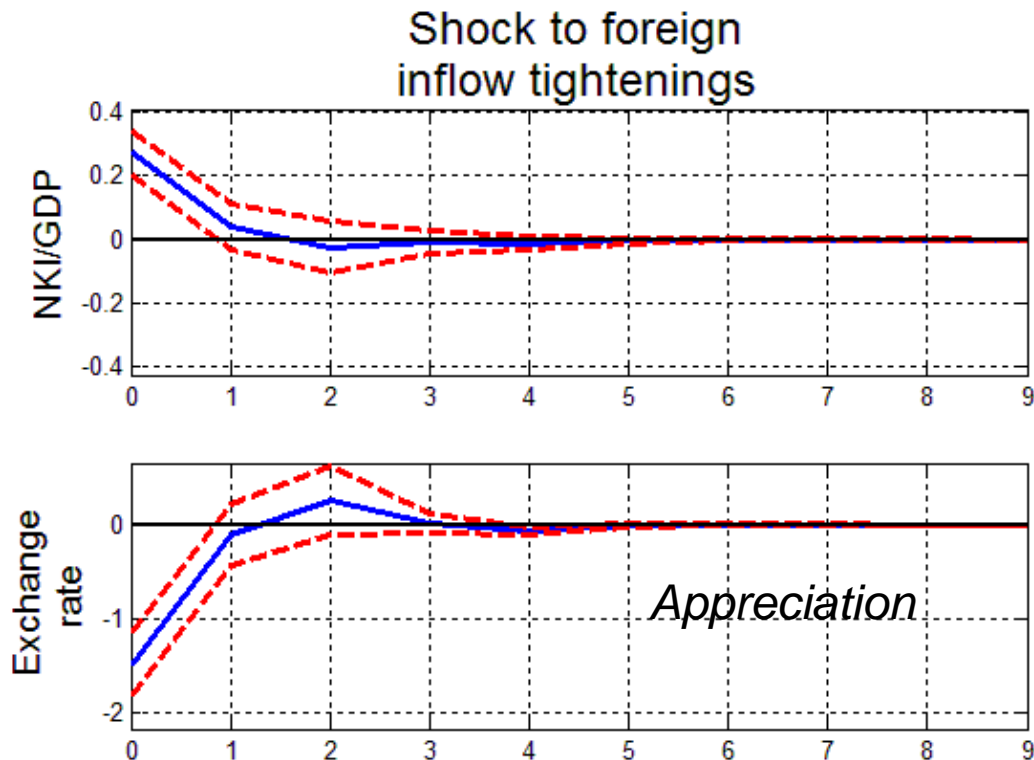
# Capital controls respond to macroprudential concerns, particularly after strengthening financial stability governance arrangements



Source: Pasricha, G.K. (2017) "Policy Rules for Capital Controls", paper presented at Canadian Economic Association Meetings, June 2017

Note: The graph summarizes the marginal effects of the post-governance arrangements time dummy in a model predicting non-FDI weighted net inflow tightening measures. For details, please see the paper.

# Capital controls in BRICS have spillover effects



Notes: Note: Net capital inflows exclude FDI and flows to official sectors. CCAs exclude those corresponding to FDI. Results shown correspond to figure 12 in the NBER version of the paper, with a one-unit shock to foreign net inflow tightening. Time periods are quarters. NKI/GDP and Exchange rate changes are expressed as percentages.

Source: Pasricha, Falagiarda, Bijsterbosch, Aizenman (2015) " Domestic and Multilateral Effects of Capital Controls in Emerging Economies" NBER Working paper No. 20822

# Conclusions

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- Dataset captures changes in capital account regulations at a close to instrument level precision
- Allows researchers to better capture how policy has evolved over time, and assess its motivations and impact
- Coming soon:
  - Monthly data
  - Extension to advanced economies
- Dataset available online at:

<http://www.nber.org/data-appendix/w20822/>

# Thank you



# List of base variables: Unweighted

easing	No. of Easings
easingin	No. of Inflow Easings
easingout	No. of Outflow Easings
easingio	No. of other Easings (not in/out specific)
tightening	No. of Tightenings
tighteningin	No. of Inflow Tightenings
tighteningout	No. of Outflow Tightenings
tighteningio	No. of other Tightenings (not in/out specific)
hoteasing	No. of non-FDI Easings
hoteasingin	No. of non-FDI Inflow Easings
hoteasingout	No. of non-FDI Outflow Easings
hoteasingio	No. of non-FDI other Easings (not in/out specific)
hottightening	No. of non-FDI Tightenings
hottighteningin	No. of non-FDI Inflow Tightenings
hottighteningout	No. of non-FDI Outflow Tightenings
hottighteningio	No. of non-FDI other Tightenings (not in/out specific)

# List of summary measures: Unweighted

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nkired	No. of NKI Reducing Measures
nkiincr	No. of NKI Increasing Measures
nettighteningin	No. of Net Inflow Tightenings
neteasingout	No. of Net Outflow Easings
nettighteningio	No. of other Tightenings (not in/out specific)
netnkirestr	No. of Net NKI Restricting Measures
hotnettighteningin	No. of non-FDI Net Inflow Tightenings
hotneteasingout	No. of net non-FDI Outflow Easings
hotnettighteningio	No. of net non-FDI other Tightenings (not in/out specific)
hotnkired	No. of non-FDI NKI Reducing Measures
hotnkiincr	No. of non-FDI NKI Increasing Measures
hotnetnkirestr	No. of non-FDI Net NKI Restricting Measures