

Discussion of

# **Spillovers at the Extremes:**

## **Macroprudential Tools and Vulnerability to the Global Financial Cycle**

by A. Chari, K. Dilts-Stedman, K. Forbes

A. Cesa-Bianchi \*

Bank of England, CEPR, and CfM

**BGSE Summer Forum**

**Financial Shocks, Channels, and Macro Outcomes**

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\*The views expressed here do not necessarily represent those of the Bank of England or of any of its Committees.

# This paper

▶ **Question** What is the impact of macropru policies?

▶ Answer theoretically ambiguous

- \* Macropru limits the build-up of risks in targeted sectors...

- \* ... but could shift those risks to unregulated (and possibly riskier) sectors

▶ Two key challenges

[1] Macropru stance endogenously responds to build-up/crystallization of risks

[2] Macropru could be effective at the 'extremes' but have little impact on mean outcomes

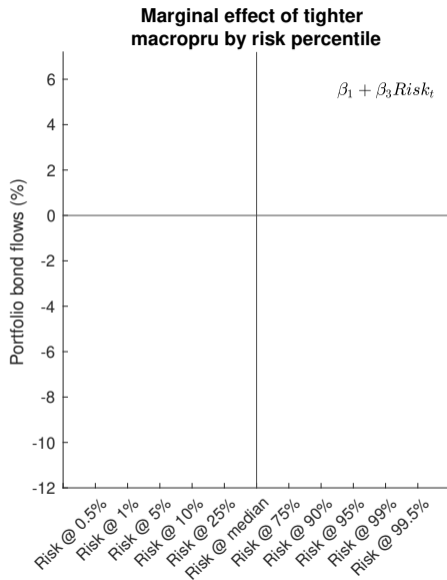
▶ **This paper**

- \* Develops a methodology to address both [1] and [2]

- \* Shows that the effect of macropru is state-dependent, highly non-linear, and asymmetric

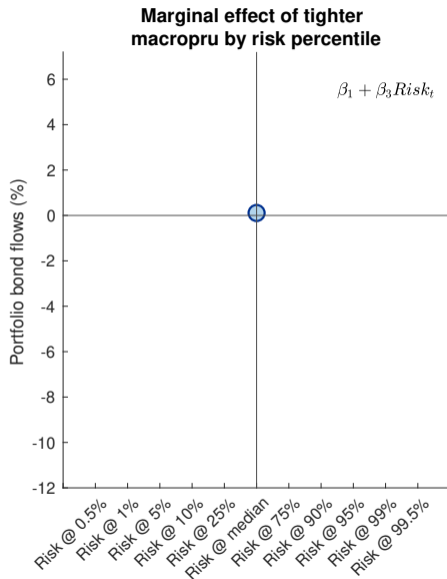
# This paper in a picture

- ▶ A macropru tightening...



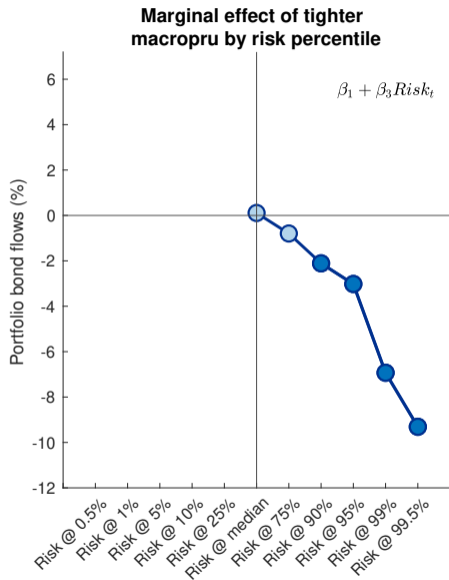
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  - \* Has no effects when risk is normal



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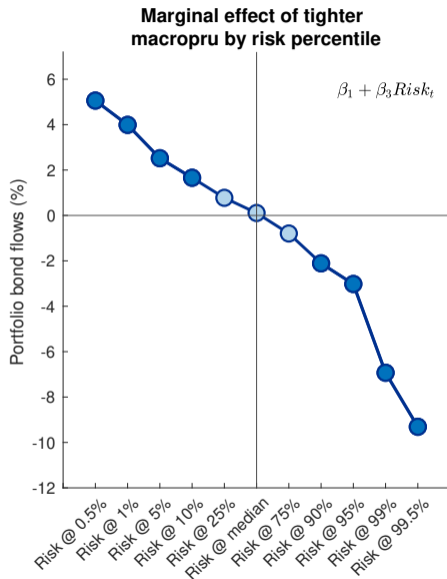
- ▶ A macropru tightening...
  - \* Has no effects when risk is normal
  - \* Leads to outflows when risk is off → Good news



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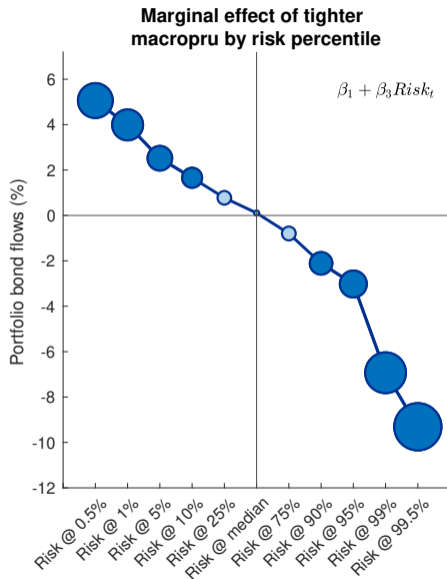
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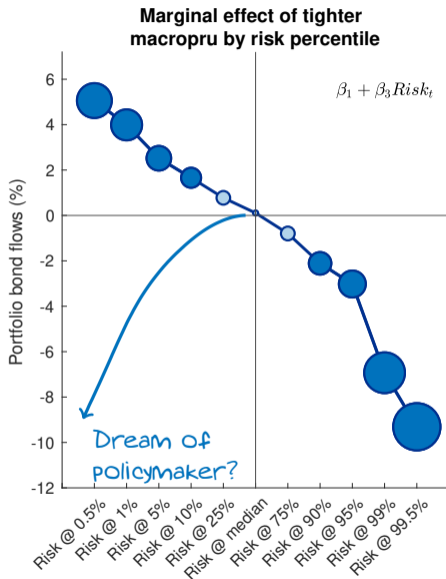
# This paper in a picture

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- ▶ Strong non-linearity
  - \* Especially for risk-off



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# [#1] Taking macropru 'shocks' seriously

- ▶ Macropru stance reflects a combination of

$$MP_{it} = f(\epsilon_{it}^{Risk}, \epsilon_{it}^{MP})$$

- \* Endogenous response to crystallization / build-up of risks ( $\epsilon_{it}^{Risk}$ )
  - \* Policy shocks ( $\epsilon_{it}^{MP}$ )
- ▶ Pervasive assumption in empirical work  $MP_{it} \equiv \epsilon_{it}^{MP} \rightarrow$  Reverse causality bias
  - ▶ **This paper** Controls for determinants of  $MP_{it}$  by estimating a macropru 'reaction function'

$$MP_{it} = \beta \cdot \underline{X_{it}} + \underline{\widetilde{MP}_{it}}$$

Observables  $f(\epsilon_{it}^{Risk})$       Residuals  $f(\epsilon_{it}^{MP})$

# [#1] Taking macropru 'shocks' seriously

- ▶ Macropru reaction function reminiscent of a recursive VAR with  $MP_{it}$  ordered first

$$MP_{it} = \alpha_1 + \beta_1 Crisis_{i,t-1} + \beta_2 Credit_{i,t-1} + \beta_3 Growth_{i,t-1} + \beta_4 Controls_{i,t-1} + \widetilde{MP}_{it}$$

## ▶ Questions

- \* Why panel specification (common  $\beta$ s)?
  - \* How about persistence in policy stance ( $MP_{i,t-1}$ )?
  - \* How about the role of contemporaneous controls ( $X_{it}$ )?
- ▶ Alternative (more conservative) specification

$$MP_{it} = \alpha_i + \phi_i MP_{i,t-1} + \gamma_{i0} X_{it} + \gamma_{i1} X_{i,t-1} + \widetilde{MP}_{it}$$

## [#2] Macropru at the extremes

- ▶ Empirical model

$$PI_{it} = \alpha_i + \alpha_t + \beta_1 \widetilde{MP}_{it} + \beta_2 RISK_t + \beta_3 (\widetilde{MP}_{it} \cdot RISK_t) + \dots + u_{it}$$

- ▶ Marginal effects of macropru on portfolio flows

$$\frac{\partial PI_{it}}{\partial \widetilde{MP}_{it}} = \underbrace{\beta_1}_{\approx 0} + \underbrace{\beta_3}_{< 0} \cdot RISK_t$$

- ▶ **Question** Is the approach the most appropriate one for what the paper wants to do?

## [#2] Macropru at the extremes

- ▶ **Issue** Effect of macropru is assumed to be linear in risk
  - \* Any non-linearity is due to the distribution of  $RISK_t$ , not to the transmission mechanism  $\beta_3$
  - \* Non-monotonicity is ruled out by assumption
- ▶ Relaxing the assumption of linearity seems crucial for what the paper wants to achieve
- ▶ A simple alternative (of many available)
  - [1] Sort realizations of  $RISK_t$  into quartiles  $\mathcal{R}_k$  with  $k = 1, 2, 3, 4$
  - [2] Estimate heterogeneous  $\beta_1 + \beta_3 \cdot RISK_t$  by risk quartile

$$PI_{it} = \alpha_i + \alpha_t + \beta_1 \widetilde{MP}_{it} + \beta_2 RISK_t + \sum_{k=1}^4 \beta_3^k (\widetilde{MP}_{it} \cdot RISK_t) \cdot \mathcal{R}_k + \dots + u_{it}$$

## [#3] Macropru: Shock or state?

- ▶ Some confusion about what is a shock and what is a state

- ▶ From the abstract (and many other parts of the paper):

*“A tighter ex ante macroprudential stance can amplify the impact of global risk shocks”*

- ▶ If the focus is on risk shocks, then the derivative of interest should be

$$\frac{\partial PI_{it}}{\partial Risk_t} = \beta_2 + \beta_3 \cdot \widetilde{MP}_{it}$$

- ▶ More appealing to think of  $MP_{it}$  as shock and  $Risk_t$  as a state

- \* Motivating ambiguity is on the causal effect of macropru
- \* Effort in identifying  $\widetilde{MP}_{it}$

# Conclusions

- ▶ Great paper, lots of interesting results
- ▶ Effort to identify macropru shocks very welcome → More to be done?
- ▶ Macropru at the extremes
  - \* Linearity assumption seems overly restrictive
  - \* Can we get more out of the data?
- ▶ Theoretical framework to think about the results