FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

MACROECONOMICS, POLICY & ECONOMETRICS RESEARCH GROUP

Lara Coulier & Selien De Schryder

USING INTENSITY-BASED INDICES TO MEASURE MACROPRUDENTIAL POLICY EFFECTIVENESS

ANALYZING MACROPRUDENTIAL EFFECTIVENESS

INTRODUCTION

- Since the GFC, advanced countries have increasingly implemented macroprudential policy instruments to reduce the sensitivity of the financial system to shocks and curb the build-up of systemic financial risks
- The macroprudential toolkit is **large, divergent, and applied differently across countries**
  - Borrower-based measures (e.g. LTV, LTI, D(S)TI limits)
  - Lender-based measures (e.g. capital buffers, liquidity requirements, and reserve requirements)

PROBLEM

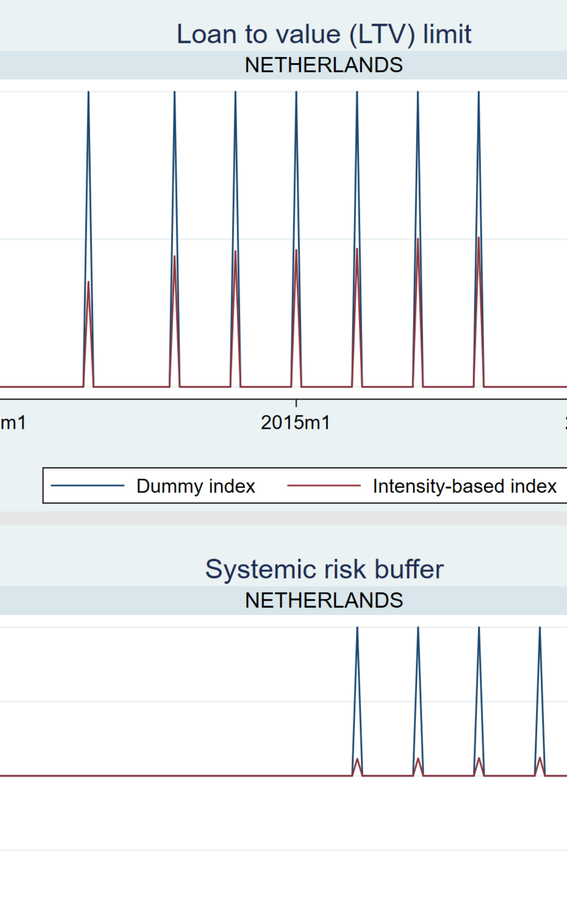
- The existing literature uses dummy variables for any macroprudential implementation
- What about difference in instruments, implementations, and **restrictiveness**?

SOLUTION

- Constructing **data – driven intensity-based indices** for each type of macroprudential policy instrument starting from the MaPPED database by Budnik & Kleibl (2018) and ESRB database on macroprudential policy.

CONTRIBUTION 1: DATA-DRIVEN INTENISTY-BASED INDICES

BORROWER-BASED AND LENDER-BASED INSTRUMENTS



→ **Comparable restrictiveness of the implementation across countries and time for a given macroprudential instrument**

(a)

(b)

Graphs show examples of the indices for implementations of (a) LTV limits and the (b) systemic risk buffer in the Netherlands.

CONTRIBUTION 2: EMPIRICAL SET-UP

GOAL

Use these indices to analyze the effectiveness of borrower-based macroprudential instruments in **curbing credit and house price growth** in EU countries and **assess complementarities between borrower-based and other macroprudential policy instruments.**

METHODOLOGY

$$\Delta_h Y_{i,t+h} = \gamma^h(L)\Delta Y_{i,t-1} + \beta^h \widetilde{MAP}^{borr}_{i,t} + \tau^h(L)\tilde{X}_{i,t-1} + \delta^h \widetilde{MAP}^{other}_{i,t} + \rho^h\left(\widetilde{MAP}^{other}_{i,t} * \widetilde{MAP}^{borr}_{i,t}\right) + \mu^h \widetilde{MAP}^{CC}_{i,t} + \alpha^h_i + \theta^h_t + \varepsilon_{i,t+h}$$

- Local projections with impulse response functions (IRFs) (Jordà, 2005)
- Interaction terms to assess complementarities
- Standard control variables
- Country- and time-fixed effects
- Time frame from 2010 (due to availability of intensity-based indices) until latest date available

IDENTIFICATION

- Narrative approach: remove countercyclically motivated implementations (mentioned in MaPPED) → include as control variable
- Announcement dates → 'news shocks'

References

Jordà, O. (2005). Estimation and Inference of Impulse Responses by Local Projections. *The American Economic Review*, *95*(1), 161-182.

Budnik, K., & Kleibl, J. (2018). Macroprudential regulation in the European Union in 1995-2014: introducing a new data set on policy actions of a macroprudential nature. *ECB Working Paper Series No. 2123*.

Contact

lara.coulier@ugent.be
www.ugent.be/eb/economics/en

Universiteit Gent
@ugent
Ghent University

GHENT UNIVERSITY