



Macroprudential Policy Effects—Evidence and Open Questions

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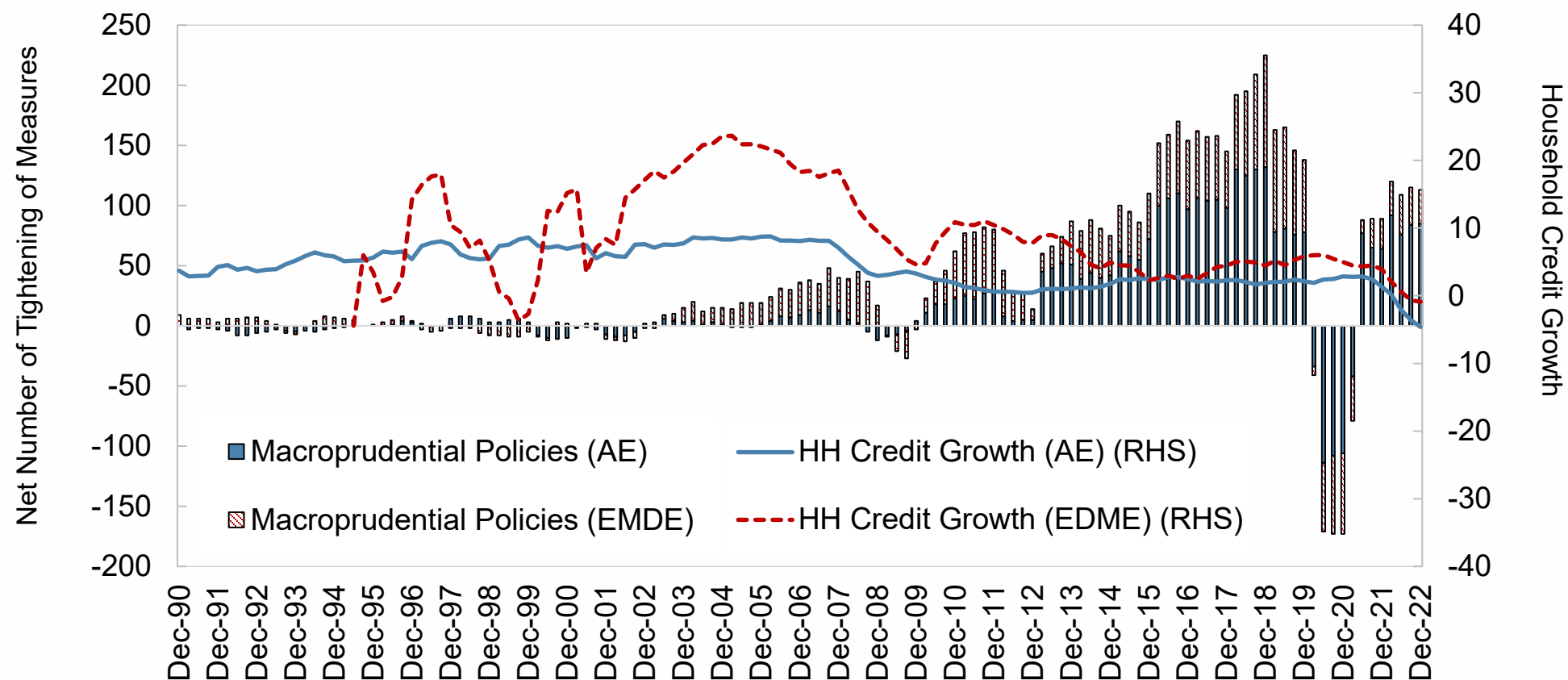
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Macroprudential Policy Tools—How Well do They Work?

Macroprudential policy still relatively new.

- EM early adopters. In many advanced economies, adoption only after the Global Financial Crisis.
 - ▶ New capital and liquidity tools—CCyB, LCR, NSFR—part of banking reform.
 - ▶ Borrower-based tools—LTV and DSTI—also more widely used since then.
- After years of tightening: COVID-19 shock was test of countries' readiness to relax tools in stress periods.
- Rising interest rates pose new resilience test for the financial system.

Use of Macroprudential Policy through Time

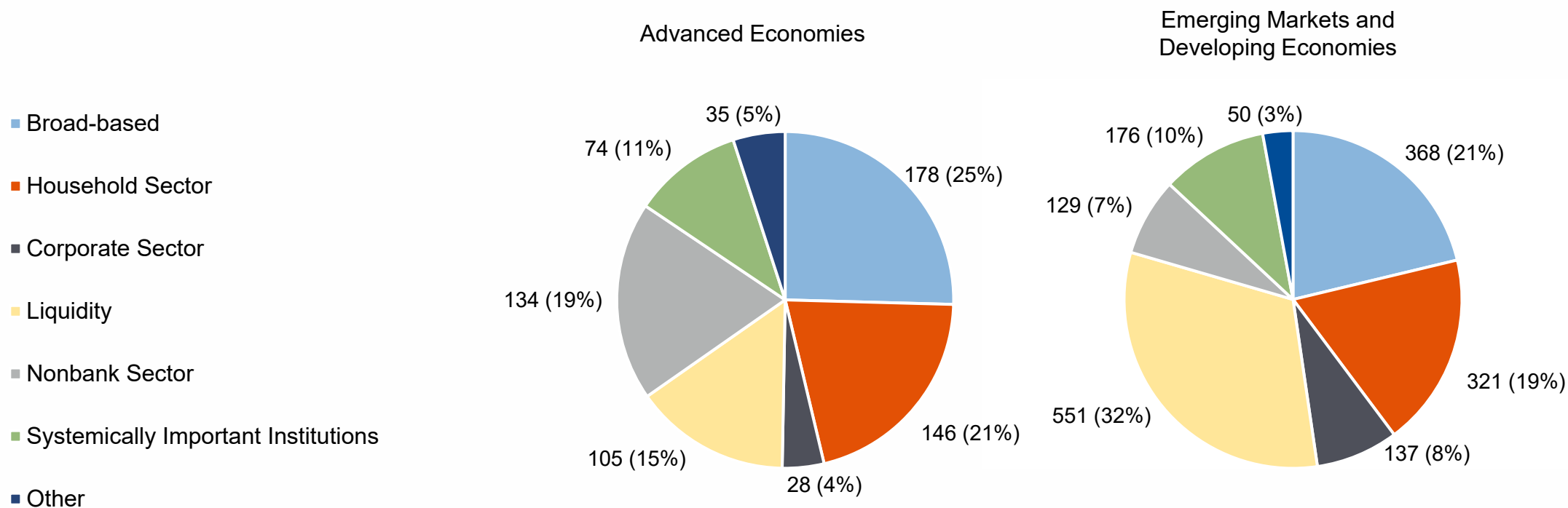


Sources: iMaPP database, BIS, and the authors' calculations.

Notes: This figure is based on 27 advanced economies and 15 emerging market and developing economies for which quarterly data on household credit are available from the BIS. The bars indicate the cumulative sum of the net number of tightening actions of any macroprudential policy instrument over the current and past three quarters and the lines indicate the average household credit growth. AE = advanced economy; and EMDE = emerging market and developing economy. Lines indicate credit growth at the quarterly frequency, separate for AEs (blue) and EMDEs (red)

Range of Macroprudential Tools in Use

Total number of tools: 2432, in use in 183 countries, as of June 2022



Sources: IMF Macroprudential Policy Survey Database, IMF staff calculations.

Note: Numbers denote the frequency of measures reported. Percentages denote the share among total measures reported. Data is as of at least end June 2022: 117 countries reported data through June 2022, and 66 beyond 2022 Q2.

Scope of the Paper "Macroprudential Policy Effects: Evidence and Open Questions", IMF Departmental Paper 23/002.

Questions:

- Can macroprudential tools counter a procyclical build-up of vulnerabilities?
- Do they increase financial system resilience to adverse shocks?
- How do effects vary with tool calibration, and over time?
- How bad are side effects on output and from leakages?
- How do tools interact with other policies?

Answers based on:

- Meta-study of existing research (Araujo and others, 2020).
- Survey of more recent studies of nonlinear and resilience-building effects.
- Novel analysis of interactions.

Strong Effects on Credit and Asset Prices

Macroprudential policy tightening has strong effects on credit and asset prices.

- Estimation needs to take account of endogeneity.
 - ▶ when policy responds to increase in credit and asset prices.
- Recent studies do so—e.g., by using micro-data or policy surprises—and generally find large and highly significant effects.
 - ▶ especially for borrower-based tools.
- ✓ Macroprudential policy succeeds in reducing the build-up of vulnerabilities.

Macroprudential Tightening—Effects on Credit



Source: The iMaPP database, Bloomberg, BIS, OECD, others (see Appendix III), and authors' estimation.

Note: This figure shows the average effects of tightening macroprudential measures on credit obtained through weighted least squares regressions where the weights are proportional to the precision of each result. The dependent variable in such regressions is the coefficients collected by Araujo and others (2020) from studies where macroprudential policy is measured through -1,0,1 dummy variables at a horizon of up to one year, normalized by the standard deviation of the outcome variable (in this case total bank credit or transformations of it). All effects are statistically significant.

Emerging Evidence of Effects on Resilience

Macroprudential policy can increase resilience: reduce the force of adverse macro-financial feedback from adverse shocks.

- New evidence: capital buffers can support credit through stress periods
 - ▶ especially when buffer is explicitly releasable (Couaillier and others, 2022).
- Borrower-based tools can increase borrower resilience.
 - ▶ DSTI reduces propensity to default in the event of shocks (Nier and others, 2019).
- Evidence based on “growth at risk” shows that macroprudential tools can reduce tail risks to output (Brandao-Marques and others, 2020).
 - ▶ In EMDEs, tighter regulation reduces sensitivity of GDP to VIX and capital flow shocks (Bergant and others, 2020).

Resilience-Building Effects are Non-Linear, but Appear to Hold Up Through Time

Capital buffers can support lending when their release generates additional “headroom” over- and above minimum requirements.

- Policy space needed for capital buffer release to work well.

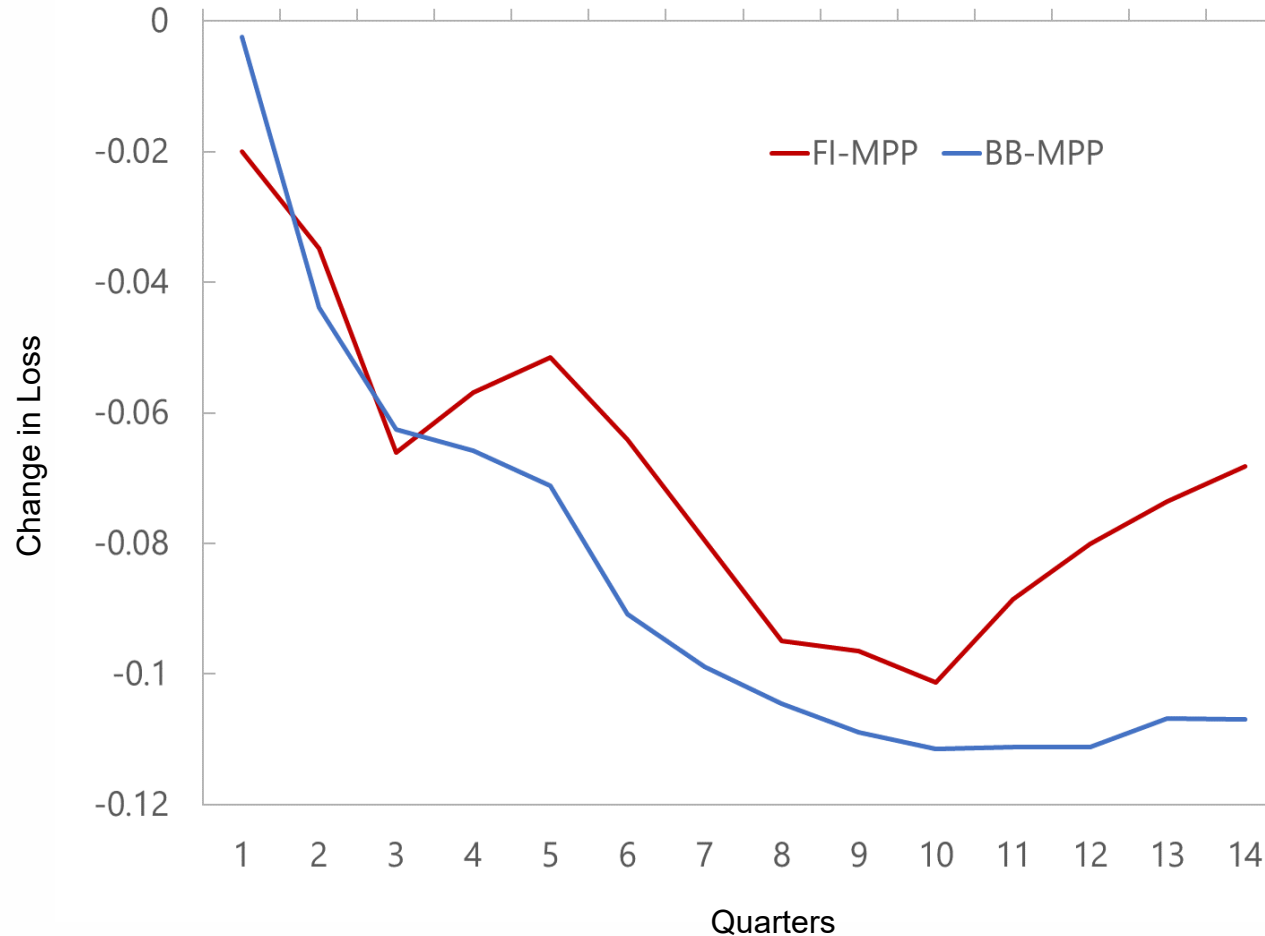
Tightening of borrower-based tools has diminishing marginal returns for resilience when calibration becomes tight.

- DSTI ratio caps reduce default probability, but no additional benefit when tightening beyond certain thresholds.

Resilience-building effects appears to hold up and strengthen over time

- Especially for borrower-based tools.

Reduction in Loss Function from Use of MPP



Source: Brandao-Marques and others (2020).

Note: The figure shows the cumulated change in the loss function when comparing a scenario of loose financial conditions without policy tightening to one where policy is tightened. BB-MPP = borrower-based macroprudential policy; FI-MPP = financial-institutions-based macroprudential policy. The horizontal axis shows the number of quarters since the time of the loosening shock of financial conditions and macroprudential tightening.

Side Effects and Interactions Need to Also Be Considered

Side effects on consumption and output of a macroprudential tightening are weak.

- Even for borrower-based tools, where stronger effects might be expected, Alam and others (2019)

Leakage effects important, with strong evidence of shifts to non-banks and foreign borrowing, e.g., Cizel and others (2019)

→ benefits of expanding perimeter of macroprudential action

Interaction effects mostly weak—marginal effect on credit of tightening one policy does not depend much on policy action for the other.

- Some evidence for EMs of interactions between monetary policy, macroprudential policy, and foreign exchange intervention
 - ▶ in line with the “Integrated Policy Framework”

What Does Evidence Imply for Policy?

Overall, evidence of strong macroprudential policy benefits.

In light of benefits, macroprudential policy may still be **underused**.

- Many countries have not yet built up macroprudential capital buffers, and more countries should consider this.
 - ▶ Including through **positive neutral CCyB**.
- Borrower-based tools not used everywhere and toolkit often incomplete.
 - ▶ often still lacking **income-based tools**, such as debt service ratio caps.

Further research can help policymakers better **calibrate tools**.

- Requires data on size of change in the policy setting.

Expansion of macroprudential policy to **non-banks** important.

- Based on evidence, and when looking further ahead (FinTech, etc.)

Thank you