Comment: Setting Cyclical and Structural Capital Buffers through Banks stress tests

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The paper in a nutshell: main questions

- Since Basel III, financial regulation should strengthen banks' resilience against
  - cyclical risks: risks related to the evolution of the financial conditions
  - structural risks: risks related to the structure of the banking system.
- Stress tests help regulators set capital requirements according to banks' potential losses in case of adverse shocks, but they do not distinguish between cyclical and structural risks
- Can stress tests be designed to discriminate between structural and cyclical risks to the banking system?

The paper in a nutshell

- Generate macroeconomic scenarios that depend on the level of cyclical risk:
  - a baseline scenario at the historical median level of cyclical risk $\rightarrow$ standard risk environment
  - a scenario at the current level of cyclical risk
- Use these scenarios as inputs in stress-tests models to produce counterfactual capital ratios
- Use counterfactual capital ratios to calibrate cyclical and structural capital requirements

What is new here? Risk-to-Buffer framework

- Standard approach:

$$Buffers_t = h(f(g(Shocks_t)))$$

where $Macro_t = g(Shocks_t)$

- This paper:

$$Buffers_t = h(f(g(Shocks_t, CycRisk_t)))$$

where $Macro_t^{Risk} = g(Shocks_t, CycRisk_t)$

Main comments: outline

- General comments
- Characteristics of the ideal exercise
- Characteristics of the current exercise
- A proposal

General comments

- Very nice paper, clearly articulated and well-written
- It proposes a simple yet powerful solution to an important issue
- Could be accompanied by a "toolkit" and a "user's manual" for widespread adoption

Characteristics of the ideal exercise

An ideal exercise should:

- Achieve the desired outcome:
  - identify and quantify cyclical risks
  - quantify capital losses under cyclical risk scenarios
  - deliver structural and cyclical adequate capital requirements
- Be simple to compute, transparent and easy to communicate
- Be (relatively) stable
- Be robust to changes in macroeconomic conditions, also in the presence of extreme tail events

Characteristics of the current exercise

- Achieve the desired outcome:
  - identify and quantify cyclical risks ✓
  - quantify capital losses under cyclical risk scenarios ✓
  - deliver structural and cyclical adequate capital requirements ✓
- Be simple to compute, transparent and easy to communicate ✓
- Be (relatively) stable ×
- Be robust to changes in macroeconomic conditions, also in the presence of extreme tail events ×

Is the exercise stable?

- The macroeconomic model is estimated with available macro data (2002Q1 - 2019Q2 in the example)
- Not many economic cycles for accurate results, especially for high risk scenarios
- Adding new data may substantially change the estimated coefficients and, ultimately, the estimated buffers
- This could result in too volatile buffers

Is the exercise robust?

As it is, the exercise is subject to the Lucas critique:

Given that the structure of an econometric model consists of optimal decision rules of economic agents, and that optimal decision rules vary systematically with changes in the structure of series relevant to the decision maker, it follows that any change in policy will systematically alter the structure of econometric models.

Is the exercise robust?

- Given previous comment, we might be tempted to use a structural macro model for $Macro_t = g(Shocks_t)$
- Even if the macro model is structural and deep parameters are estimated, we might be estimating optimal decision rules in a region of the state space (normal times) that might not be the one of interest (financial crisis)
- If the model does not behave linearly between these states, then

$$Macro_t^{Risk} = g(Shocks_t, CycRisk_t)$$

might be a bad representation of the economy

A proposal

- Use a macro model with financial instability built in
  - Bernanke, Gertler and Gilchrist (*Handbook of Macro*, 1999) type of model
  - Gertler, Kiyotaki and Prestipino (*REStud*, 2020)
  - Amador and Bianchi (*mimeo*, 2023)

- Non-linearities in these models might be crucial, and tractability and ease-of-use is lost easily

- Use a regime-switching approach that achieves accurate representation of non-linearities while retaining simplicity in the estimation and solution of the model
  - Benigno, Foerster, Otrok and Rebucci (*mimeo*, 2021): *Estimating Macroeconomic Models of Financial Crises: An Endogenous Regime-Switching Approach*
  - Harding and Wouters (*mimeo*, 2021): *Risk and State-Dependent Financial Frictions*

Final comments

- Proposed method is definitely a step forward
- Improvements in terms of the macro model to map shocks into macro variables may be (relatively) easy to implement
- Considerations of stability of the buffers delivered by the analysis should be addressed, maybe through the adoption of intervals rather than point estimates
- Coordination with other regulatory agencies is key, as well as transparent communication of the framework to the financial sector