Capital Regulation: Lessons from a Macroeconomic Model

Kalin Nikolov
Research Department – European Central Bank

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Introduction

- Financial crisis has led to large changes in financial regulation and new demands for models that can be used in macroprudential policy analysis.


- 2015-2016: under the **OMRTF** (Task Force on Operationalization of Macroprudential Research) the 3D model was estimated on all SSM countries in order to be used for macroprudential policy analysis:
  - Collection of a large consistent cross-country data set
  - Estimation using financial and banking data as well as more conventional National Accounts data
  - Careful consideration of specific features of each country’s financial system
Structure of the presentation

(1) 3D model framework

(2) Long run effects of capital requirements

(3) Short run dynamics to a capital requirements change

(4) Impact of capital requirements on shock resilience

(5) Conclusions
KEY DISTORTIONS AND TRADE-OFF

(1) Limited Liability of Banks/Safety net guarantees

(2) Deposit risk premium based on average (rather than individual) bank risk behaviour

(3) Limited participation in the bank equity market.

POLICY ASSESSMENT

Depending on which of the two channels dominate, varying impact of changes in capital requirements (CR, RW, CCB) on lending, activity and welfare.

Ultimately is a QUANTITATIVE question: MODEL CALIBRATION crucial!
Higher TCR: Reduce banks’ ability to over-leverage
1. **Lower leverage and probability of bank default** ⇒ Increased perception of more solid banks, lower cost of bank funding ⇒ reduces the social cost of bank default increasing C and GDP at first
2. **Reduces the supply of credit** ⇒ dominates when def prob bank low!
Long-run impact of CR changes in the EA

Euro Area - Comparative Statics wrt Capital requirement

- GDP
- Household Consumption
- Business Investment

- Residential Investment
- Welfare Savers Level
- Welfare Borrowers Level

Comparative Statics, Calibrated CR (0.08) \( \rightarrow \) Buffer=0.05275, Optim CR (0.1014)
Transition to Higher Capital Requirements

Euro Area Transition to 1 pp higher CR and RW = 0.5

- Capital Ratio (phi F)
- RW
- Loans NFC
- Loans HH
- GDP
- Spread NFC
- Spread HH
- Avg Bank Default
- Deposit Premium
- Default NFC
- Default HH
- DIA/GDP

4 quarters, 8 quarters, 12 quarters, 16 quarters
Higher CRs: Resilience to Financial Shocks

Resilience to Financial Shocks: Normal times vs High Financial Distress

Bank default prob Normal Financial Conditions

Bank default prob High Financial Distress

GDP Normal Financial Conditions

GDP High Financial Distress

Total credit Normal Financial Conditions

Total credit High Financial Distress

Benchmark — Desired CR&RW
Conclusions

- 3D model for the analysis of capital measures

- Cost of financial instability
  - Excessive cost of uninsured bank debt
  - Excessive deadweight losses from bank and borrower default

- Cost of capital requirements
  - Bank equity is expensive

- Optimal minimum capital requirement for the EA around 10% of RWA
THANK YOU!