



EUROPEAN CENTRAL BANK

EUROSYSTEM

Capital Regulation: Lessons from a Macroeconomic Model

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Chicago, 3 November 2016

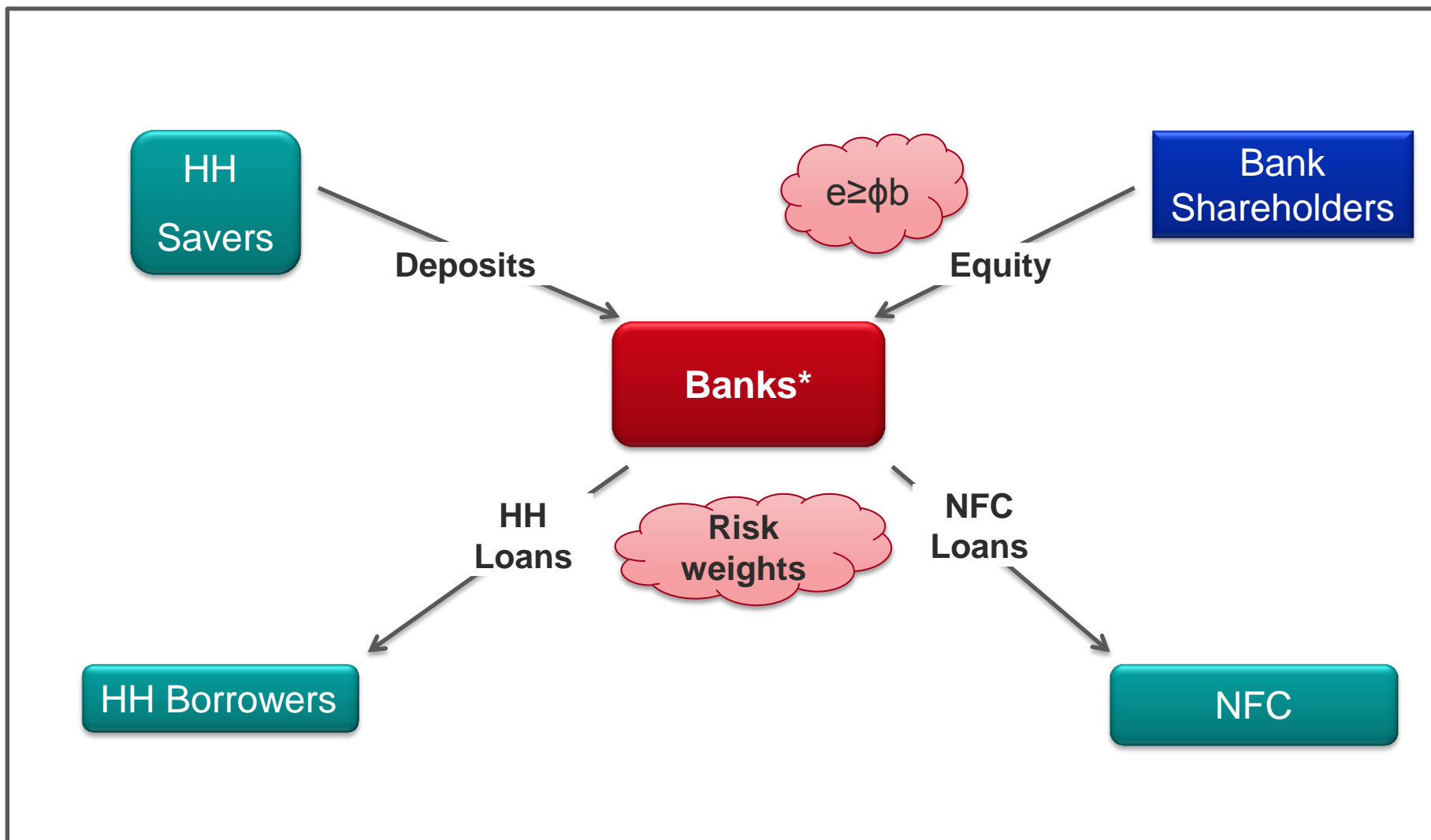
Introduction

- Financial crisis has led to large changes in financial regulation and new demands for models that can be used in macroprudential policy analysis
- In 2013-2014, a team of ESCB researchers operating under the **MaRs** (macroprudential research) network, developed a macro model (3D model) for the analysis of capital regulation
Clerc, L., Derviz, A., Mendicino, C., Moyen, S., Nikolov, K., Suarez, J., Stracca, L. and Vardoulakis, A. (2015), 'Capital Regulation in a Macroeconomic Model with Three Layers of Default', *International Journal of Central Banking*
- 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

3D Framework



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.

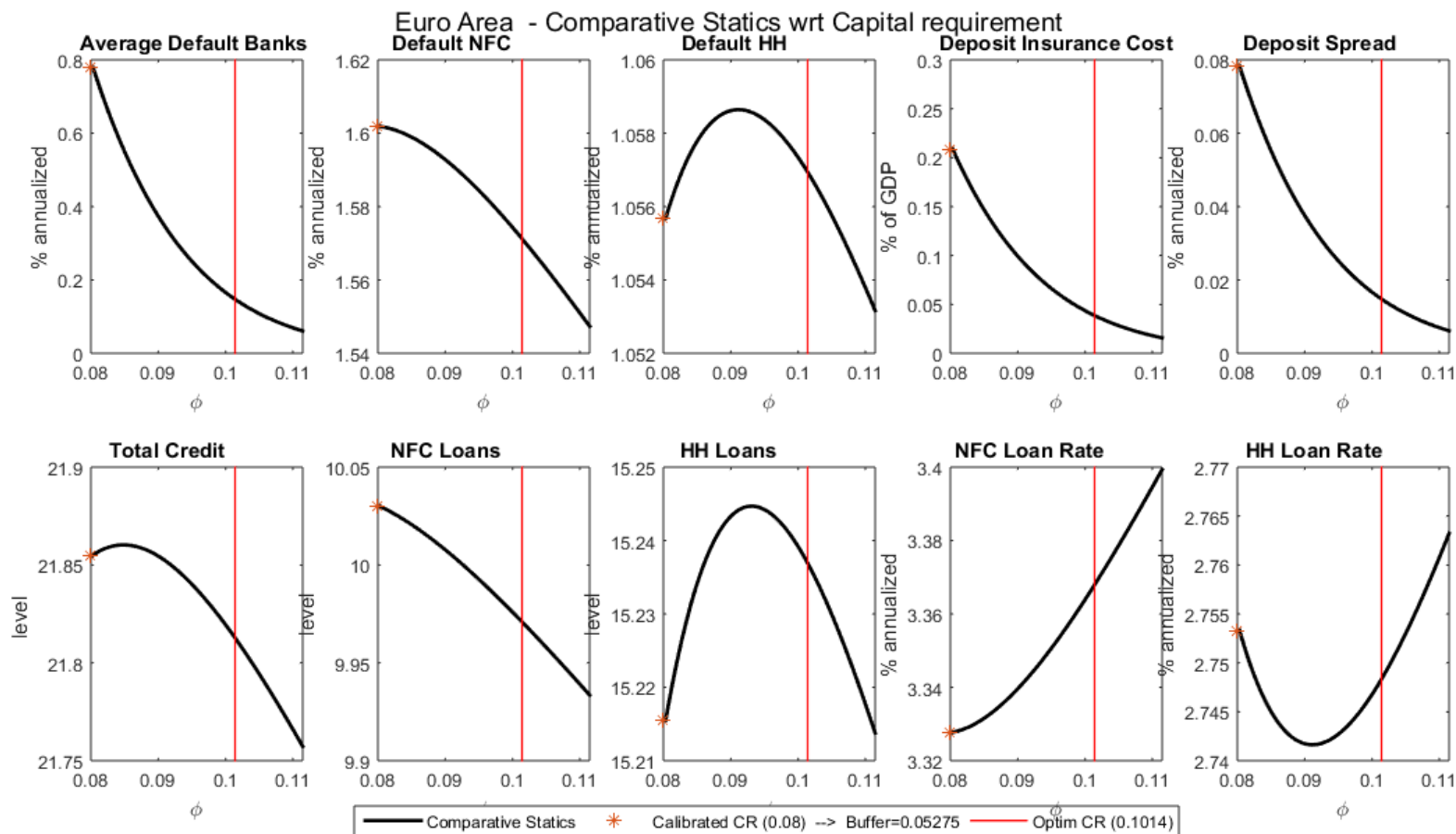
POLICY ASSESSMENT

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!

Long-run impact of CR changes in the EA



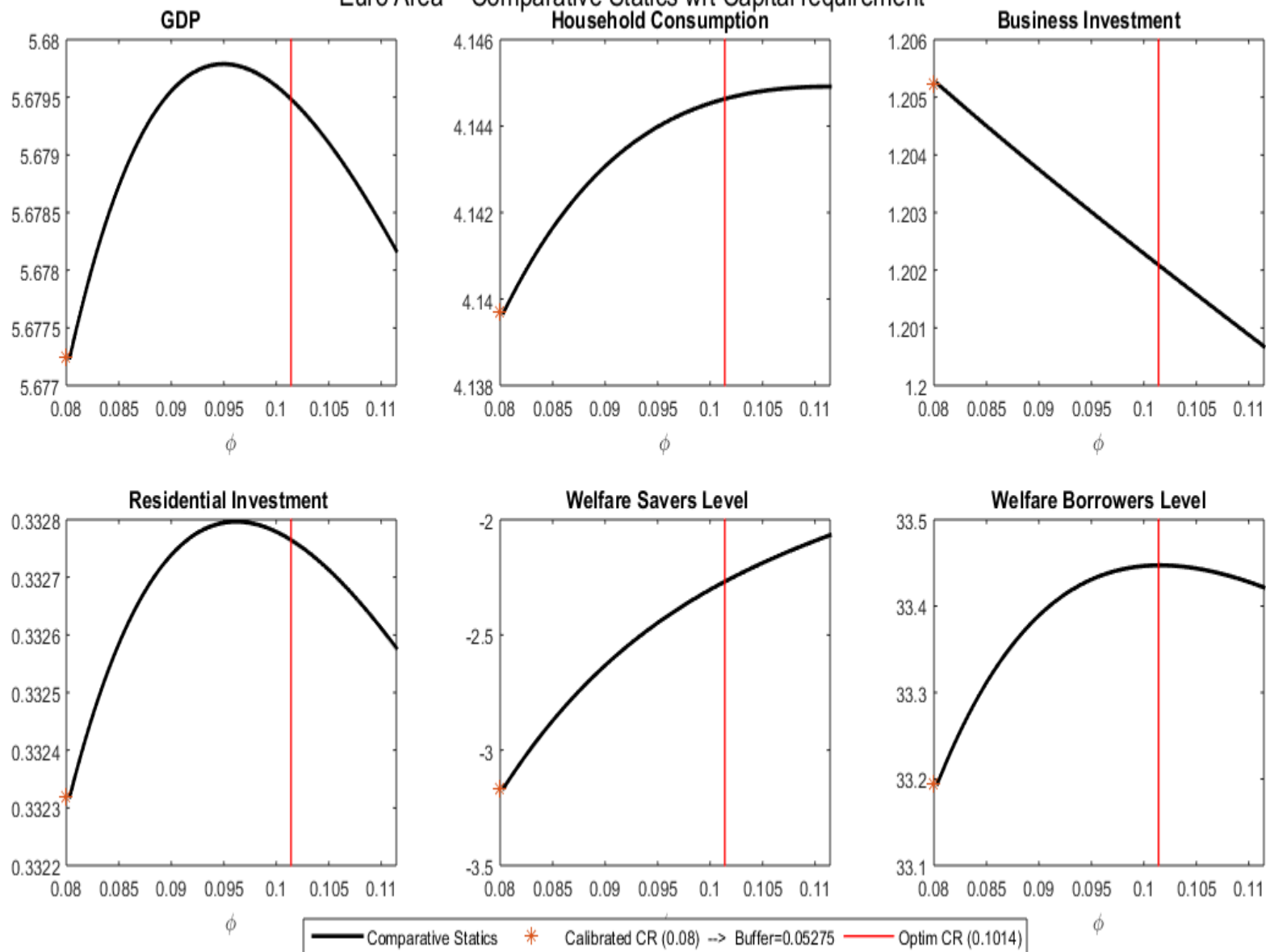
Higher TCR: Reduce banks' ability to over-leverage

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!

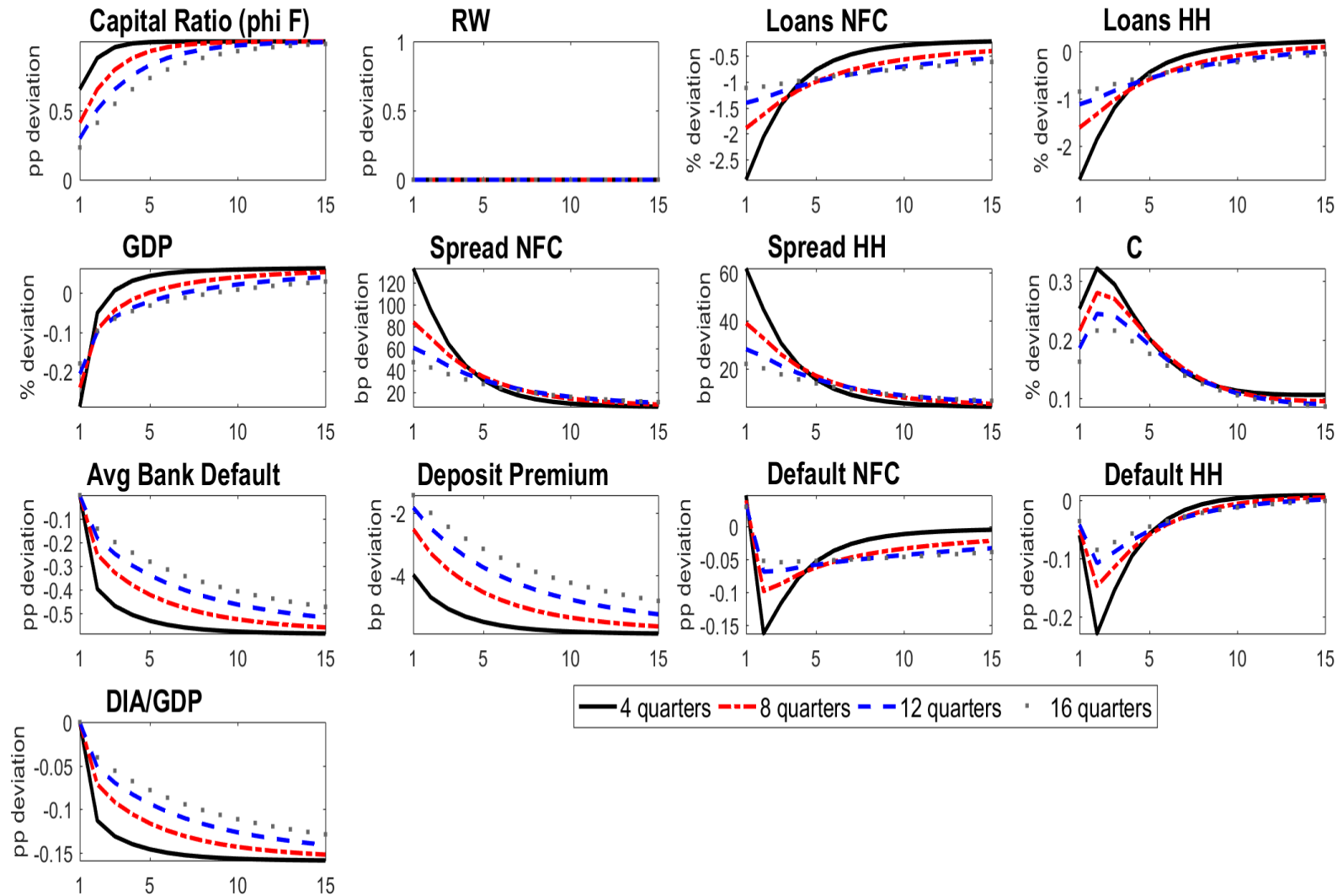
Long-run impact of CR changes in the EA

Euro Area - Comparative Statics wrt Capital requirement



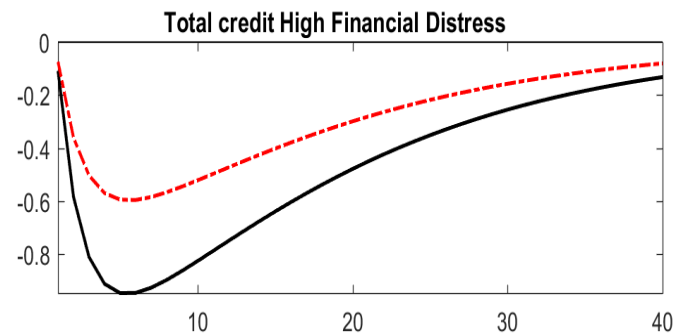
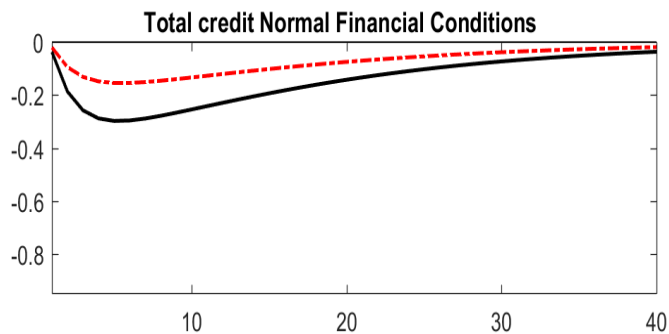
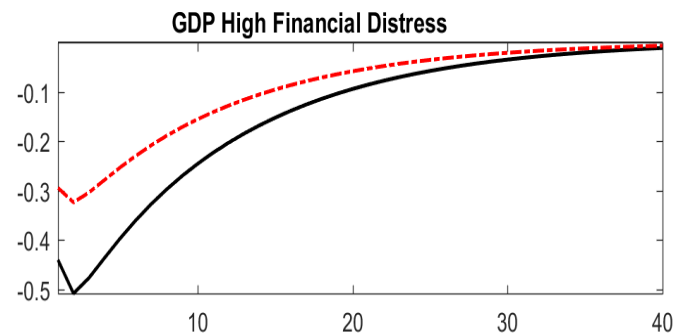
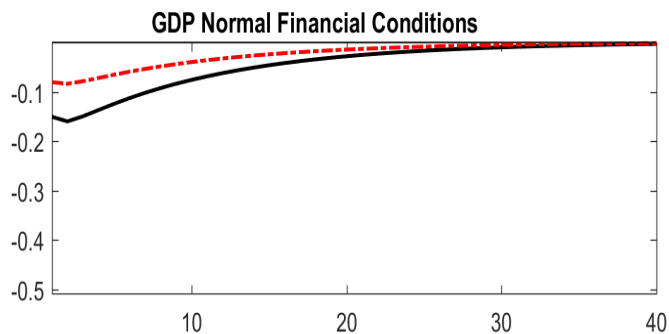
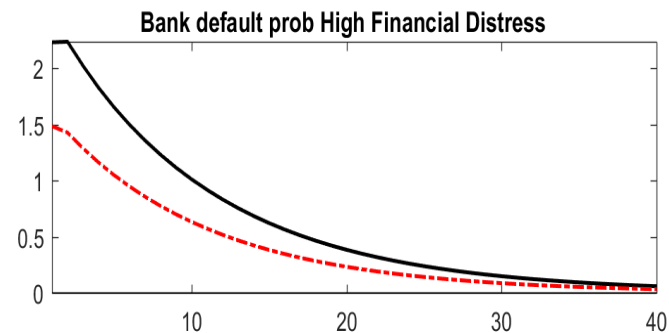
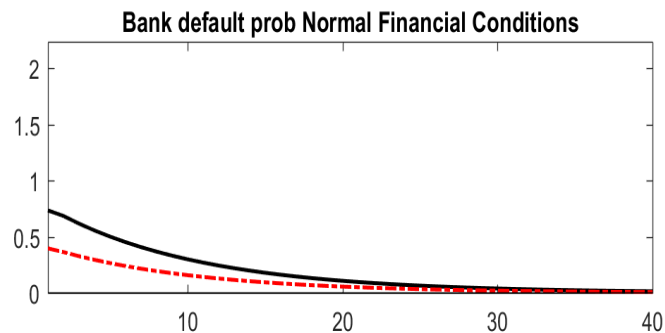
Transition to Higher Capital Requirements

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



Higher CRs: Resilience to Financial Shocks

Resilience to Financial Shocks: Normal times vs 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!