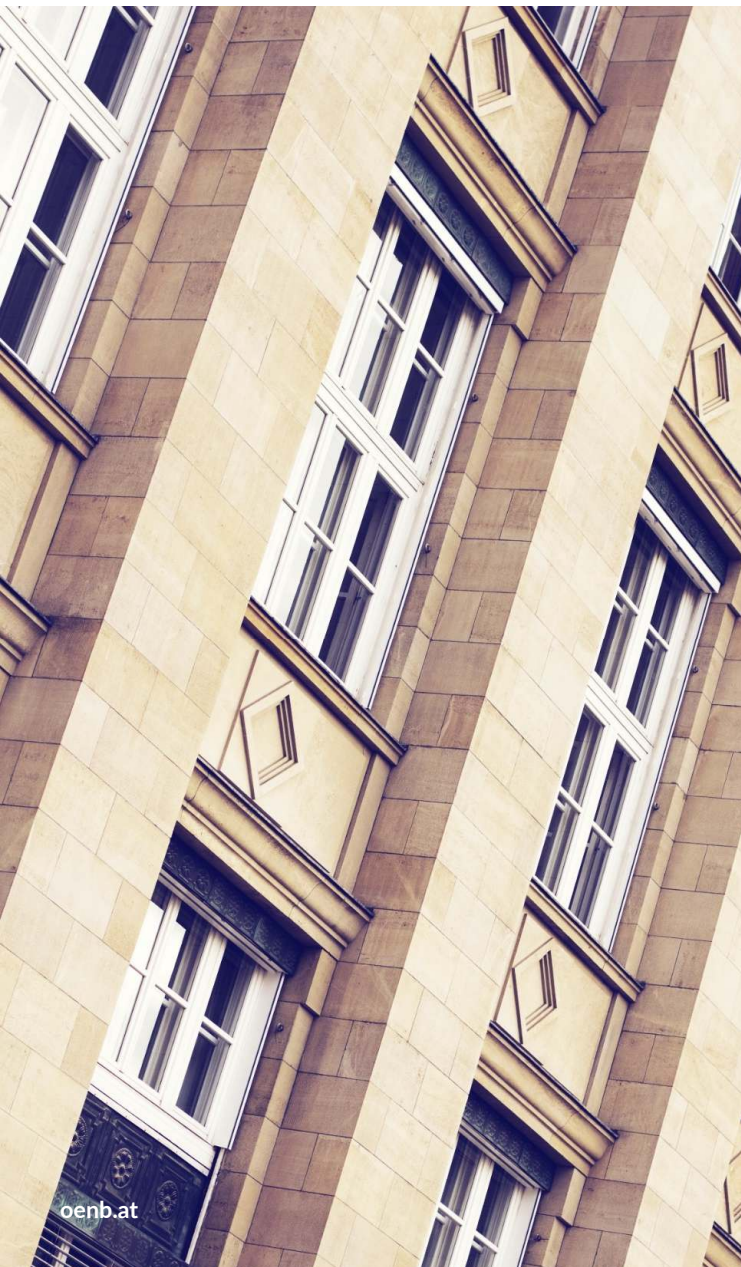




Discussion of “Macroprudential Regulation: A Risk Management Approach”

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Conference on Simplifying banking regulation and supervision without
sacrificing safety

BCBS Research Group & CEPR

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*Opinion of the discussant and not of the OeNB.

Sicherheit durch Stabilität

Overview

- Summary
- Discussion
 - Model of the regulator(s)
 - The social cost function(s)
 - › Buffers and bank behavioural reactions
 - › Elasticity of GDP to credit
 - › Buffers, bank behavioural reactions & GDP
 - Other issues
 - Conclusion

Summary

- Paper models macroprudential supervision as optimization problem
- Benefits of regulation: lower costs of systemic risk
 - Systemic risk modelled as credit exposure w/ exposure to a set of supervised banks w/ correlated risks
 - CDS spreads on subordinated debt employed to proxy bank PDs
 - Model to estimate systemic risk contributions of banks
- Social costs of regulation: lower GDP
 - Buffers affect bank behaviour
 - Bank behaviour has an impact on GDP
- Optimal buffer
 - Benefits of regulation $\geq$ social costs of regulation
- Calibrate model results to euro area banks
 - Market-based optimal buffers $\gg$ actual buffers
 - Suboptimality results from cross-country variation

Model of the regulator(s):

Assumption of homogeneity risks to predetermine main finding

- Model assumes single regulator w/ single welfare function

$$W_c(\bar{k}) = \underbrace{\lambda \cdot ESS(\bar{k})}_{\text{GDP Loss in Crisis}} \cdot \underbrace{P(\bar{k})}_{\text{Probab. of crisis}} + \underbrace{\eta \cdot \bar{k}}_{\text{Social cost of buffers}} \cdot \underbrace{(1 - P(\bar{k}))}_{\text{Probab. of no crisis}} \quad (19)$$

- But macroprudential supervision a national mandate plus ECB = 28 regulators w/ different

- $\lambda \equiv$ multiplier translating expected tail losses to GDP growth
- $ESS(k) \equiv$ Expected systemic shortfall
- $P(k) \equiv$ Probability of crisis
- $\eta^*k \equiv$ social costs of buffers

(To a large extent) subjective & heterogeneous across 28 regulators

- Assumption of homogeneity $\rightarrow$ buffers must be suboptimal for many countries, esp. for those w/ relatively low λ , low $ESS(k)$, and high η^*k

The social cost function(s):

1. Buffers and bank behavioural reactions: Calibration issues

- Calibration massively overestimates the elasticity of credit to capital buffer

$$\eta = -\frac{dY/d\bar{k}}{Y} = - \underbrace{\left(\frac{dY}{dC} \cdot \frac{C}{Y}\right)}_{\text{Elasticity: GDP to Credit Supply}} \underbrace{\left(\frac{dC}{d\bar{k}} \cdot \frac{1}{C}\right)}_{\text{(semi-)Elasticity: Credit to Capital Buffer}} \quad (20)$$

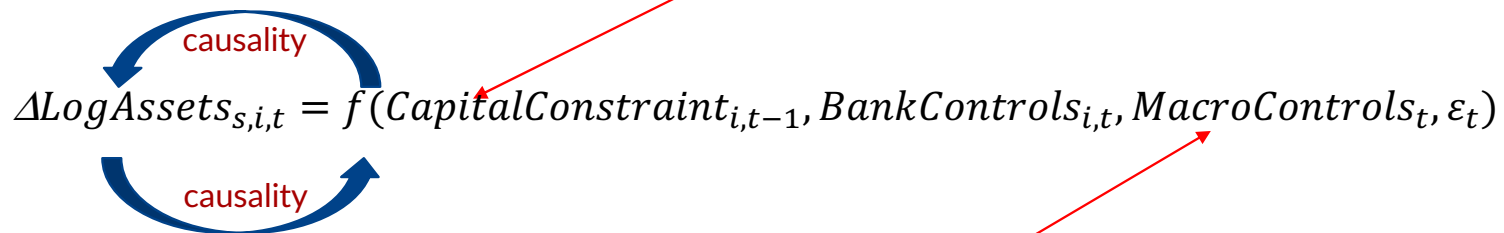
- Tenuous database (reliance on 1 paper) to estimate elasticity of credit to capital buffer increases at - 0.04
 - Elasticity heterogeneous across banks & MS & across time
- Social cost function focuses on 1-year horizon
 - Should include longer horizon (structural, non-cyclical systemic risk) & intertemporal dimension
 - Longterm impact of buffers on credit positive

The social cost function(s):

1. Buffers and bank behavioural reactions: Methodological problems

Identification problem: Model assumes that $CapitalConstraint_{i,t-1}$ is determined before and independently of $\Delta LogAssets_{s,i,t}$ – direction of causation only from $CapitalConstraint_{i,t-1}$ to $\Delta LogAssets_{s,i,t}$ but implausible and inconsistent w/supervisory requirements.

Reverse causality: Banks that want to exploit profitable growth opportunities manage their P&L and their balance sheet accordingly and have a different $CapitalConstraint_{i,t-1}$

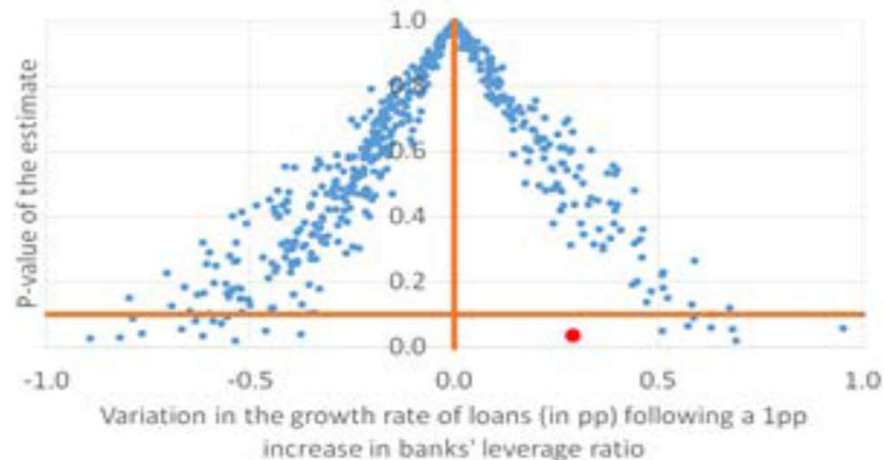


Omitted variable bias: Model assumes that $\Delta CET1_{i,t} \equiv 0$ – banks cannot take management action on capital in t . This is a confounding variable related to, both, $\Delta Assets_{s,i,t}$ and $CapitalConstraint_{i,t-1}$. → Biased and unreliable results. The effect of the omitted variable is incorrectly attributed to the included variables, distorting the true relationship between the independent and dependent variables. Likely to increase the macro-financial feedback-effect, as banks w/ lower $CapitalConstraint_{i,t-1}$ have higher $\Delta CET1_{i,t}$.

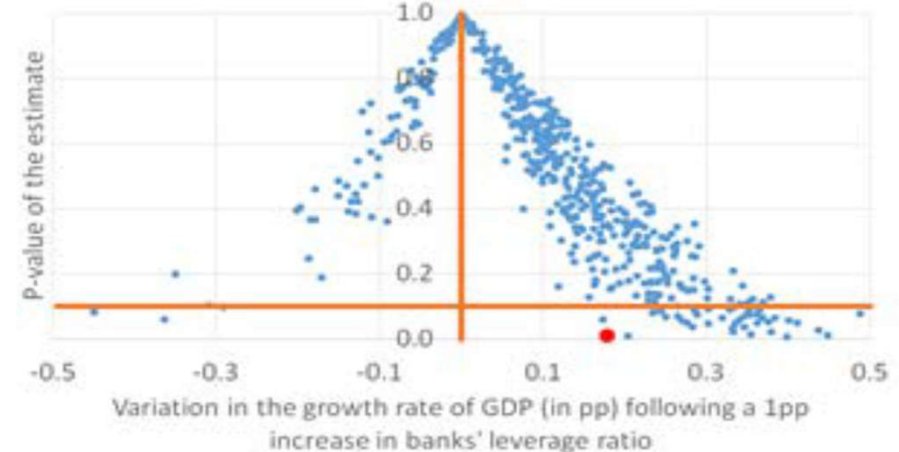
The social cost function(s):

1. Buffers and bank behavioural reactions: Results highly sample dependent

Loan growth



GDP growth

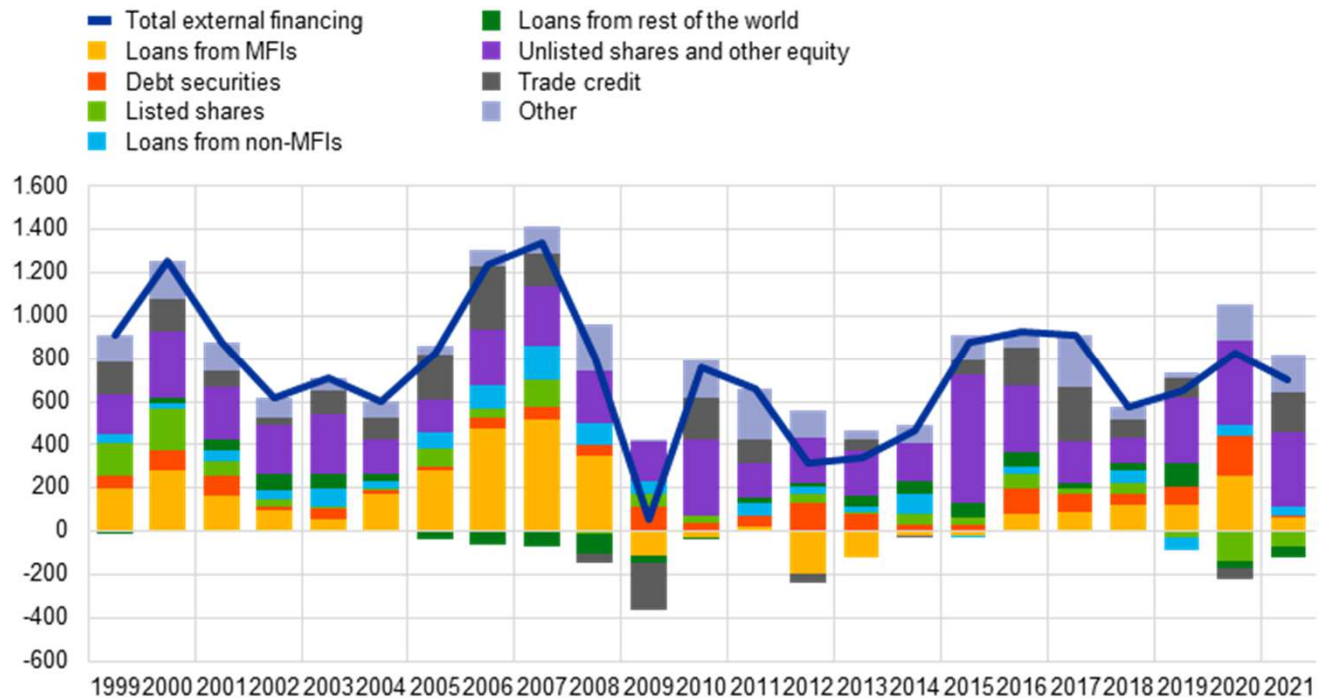


- 500 loan growth estimates based on same model – different samples (RTF BCBS (2019) “The costs and benefits of bank capital – a review of the literature”, BCBS WP 37)
- Most of the estimates for loan growth (left panel) are statistically not significant.
- Only thirteen of the 500 loan growth estimates in the left panel are negative and statistically significant at the 10% threshold, ie below the orange, horizontal line.
- This contrasts with the positive effect during crises (red dot) and emphasizes the differential impact of bank capitalization in normal and crisis times.
- The right-hand panel shows that most of the estimates for GDP growth are positive but are rarely statistically significant.
- Econometric estimates are unstable and depend on the sample & the specification

The social cost function(s):

2. Elasticity of GDP to credit: Credit substitution I

- Elasticity depends on structure of NFC funding & structure of intermediation → heterogeneous across EA MS
- E.g. in AT domestic banks fund only about 20% of NFC liabilities
- Credit substitution w/ bonds, promissory notes, leasing, factoring, trade credit, NFC-to-NFC credit along the value chain, loans from non-domestic banks, internal funding...
- E.g., in the EA – as of end-2024 – banks are no longer the single largest creditors of NFCs

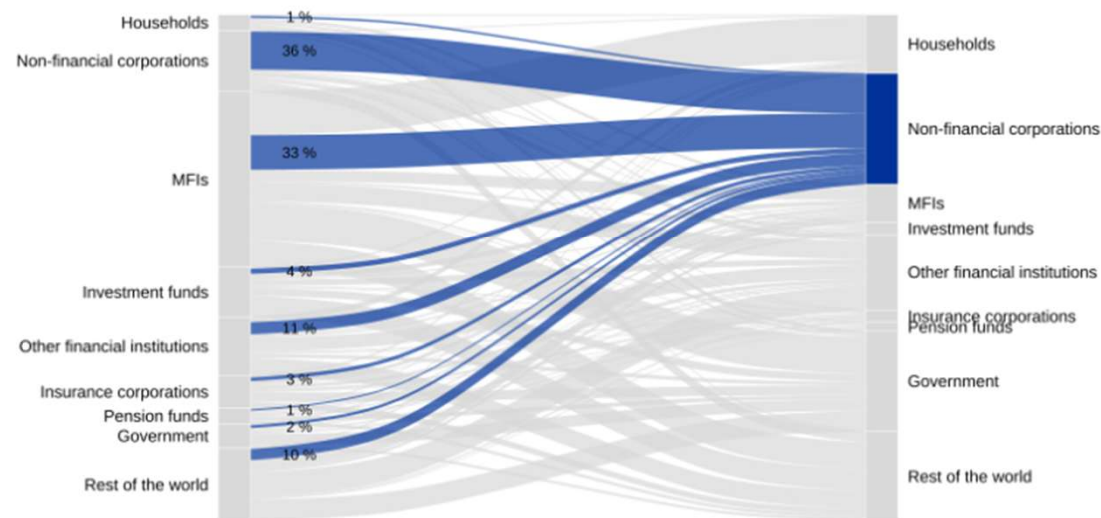


The social cost function(s):

2. Elasticity of GDP to credit : Credit substitution II

The main components of NFC debt (loans and debt securities) by counterpart sector

(2025 end of period stocks)



Source: ECB.

Discrepancies between totals and their components may arise from rounding.

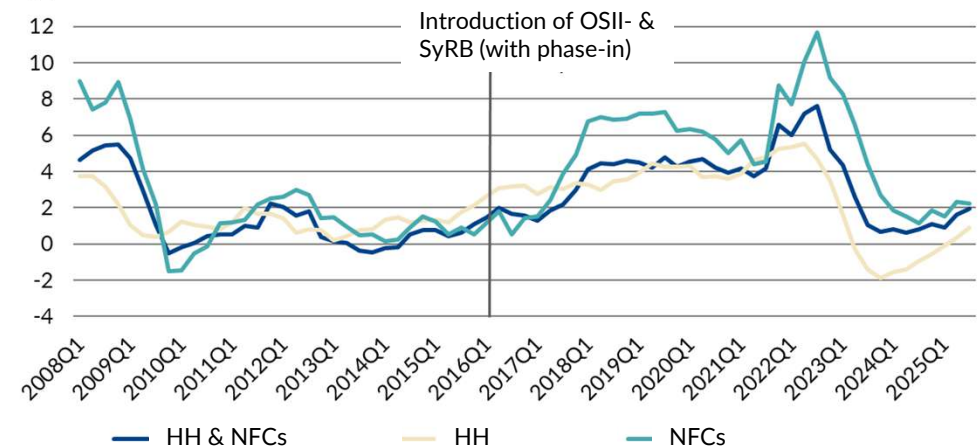
The social cost function(s):

2. Elasticity of GDP to credit: High credit growth not always GDP positive

- High credit growth not an economic policy objective
 - After the introduction of OSII & SyRB in AT (2016) credit growth accelerated [no causality implied]
 - Credit growth was too high → RRE & CRE boom → housing affordability crisis & deteriorating lending standards
 - 2016+: BBMs recommendation
 - 2022-25: legally binding BBMs
 - 2022+: Interest rate increase & CRE-induced systemic risk & high NPLs → sSyRB
 - Boom-bust costly & inefficient

Loan growth in AT (2008-25)

Yearly growth rate adjusted for FX effects, write-offs, and reclassifications



Source: OeNB.

The social cost function(s):

3. Buffers, bank behavioural reactions & GDP: Alternative ways of estimating social costs of buffers- opportunity cost approach

Optimal bank capital and components, estimated or inferred, by study: 2010–2018										Table 1
		BCBS (2010)	Miles et al (2013) (Economic Journal)	Brooke et al (2015) (BoE)	Fender and Lewrick (2016) (BIS)	Firestone et al (2017) (FRB)	Cline (2017) (Peterson Institute)	Barth and Miller (2018) (Journal of Financial Stability)	FRB Minneapolis (2017)	Almenberg et al (2017) (Sveriges Riksbank)
Coverage		BCBS members	UK	UK	BCBS members	US	US, Japan, Western EU	US	US	Sweden
Assumptions	MM offset (%) ¹	0	45	50	0	50	35–60	0	50	0
	Discount rate (%)	5	2.5	3.5	5	2.7	1.5	5	5	0 to 3
	Permanent crisis effects?	Range	Mostly (75%) temporary	Yes	Yes	Range	Yes	Mostly (75%–90%) temporary	Yes	Yes
	Other reforms incorporated	Liquidity	TLAC, resolution	Liquidity, TLAC, resolution, ring-fencing	TLAC, resolution	Liquidity, TLAC, resolution	TLAC, resolution	None	None	TLAC
Approximate marginal benefits and costs of capital ²										
Benefits	Reduced crisis probability (annual, %) ³	1.6 (0.1–2.6)	–	0.03–0.1 ⁴	1.3	0.6–1.7	0.9	1.7	0.8	0.7
	Cost of crisis (discounted, annual GDP %)	19–158 (median: 63)	140	43	63–100	41–99	64	47	158	180
Costs	Increase in loan spreads (bp) ³	13	2.5	5–10	13	3–7	–	2.3	6	6
	Cost of higher spreads (annual GDP bp) ³	9	2	1–5	12	4–7	15	16	6	9–13
Optimum (TL/RWA % unless indicated)		10–15 ⁵ (TCE/ Basel II RWA)	16–20	10–14	10–11 (CET1/RWA)	13–25	12–14 (CET1/RWA)	25 ⁶	23.5 (CET1/RWA)	10–24 (CET1/RWA)

Source: RTF BCBS (2019) “The costs and benefits of bank capital – a review of the literature”, BCBS WP 37

The social cost function(s):

3. Buffers, bank behavioural reactions & GDP: Plausibility of model results

- Calibration overestimates social costs of a 1 ppt buffer increase
 - Calibration = 2.4 ppt of GDP growth
 - Plausible = 0.04 to 0.3 ppt of GDP growth
- W/ much lower social costs, optimal buffers by country are likely to be higher than the current version of the paper suggests.
 - Current calibration already suggests high buffers
 - Moderate cost of crisis: e.g., 12.90% instead of current 6.02% (DE), 14.35% instead of current 6.48% (IT)
 - Buffer rates k^* seem to include P2G, CCyB, SyRB, CCoB, sSyRB?
 - W/ plausible calibration of the social costs of buffers model results likely to be implausible – though sensitivity analysis on slide 12 shows that the model is immune to large changes of calibration?
 - Treatment of buffer magnitudes confusing: for k^* a wide range is fine (9.5-11.6%) – deviations of actual buffers from model-based buffers of same magnitude (-1.42 to 1.15%) → but here it is an economic problem and warrants a change of the institutional set-up of macroprudential policy?!
- Questions external validity of the approach

Other issues

- Use of CDS spreads to proxy structural systemic risk contribution
 - Focus of macroprudential supervisors: resilience under system-wide stress
 - Crisis periods in the sample dominated by significant public support for HH & NFCs → bank CDS spreads underestimate impact of crisis on bank asset quality under stress
 - Underestimation of risk versus structural nature of structural systemic risk → e.g., EGB AT1 yield at issuance in early 2020 $\approx$ 3.5% cost of equity
 - TBTF: credibility of BRRD questionable – continuous calls for public backstops – political will to resolve large banks?
- Assumption of independence of management buffer wrt to macroprudential buffers not plausible
 - Size & motivation for management buffer heterogeneous across banks & business models & corporate structure
- Systemic loss threshold triggering crisis = 10% (of total bank liabilities/assets)
- Table 5: PD estimates → discuss plausibility
 - RABO, BBVA & ERSTE w/ highest PDs & CRAG, BNP & SOCG w/ lowest PDs

Conclusions

- Very interesting & timely & well written paper
- Shows that heterogeneity of macroprudential buffer requirements a consequence of heterogeneity of systemic risk & of sound macroprudential supervision & not a bug of the system
 - Likely more pronounced when heterogeneity of national systemic risk preferences & national financial structures & positions in the business / financial cycles are considered
 - National mandate necessary in a monetary union w/ heterogeneity – many other policy tools already centralized
- Epistemological challenges question external validity
 - Large number of calibrated parameters
 - Recalibration based on more realistic social costs of buffers necessary + scenario analysis wrt other parameters that are calibrated (combination of sensitivity analysis in the paper)
 - Sensitivity of results wrt to calibration of L , λ & η in isolation very low
 - Falsifiability questionable