Implications of Bank regulation for Credit Intermediation and Bank Stability:

A Dynamic Perspective

Discussion

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Agenda

Summary of paper

- **Objective and policy recommendations**   **<=**
- **Model set-up**
- **Analysis of counterfactual/baseline scenario**
- **Analysis of impact four regulatory measures**

Comments and suggestions   **<=**

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Paper objective

Dynamic banking model to analyse the effects of introducing

- **A risk-weighted capital-to-asset ratio (CAR)**
- **A countercyclical capital buffer (CCB)**
- **A liquidity coverage ratio (LCR)**
- **A regulatory margin call (RMC)** - Hart and Zingales (2011): equity injected if CDS thresholds breached.

On (trade-off between)

- **Bank stability**: can instruments yield stability?
- **Loan supply (efficiency)**: cost of ensuring stability?

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(Strong) Policy recommendations

LCR and RMC are superior regulatory instruments over CAR and CCB in ensuring bank stability and limiting credit volatility, but possibly at the cost of halting credit intermediation for large credit risk.

Small credit risk

- CAR and CCB cannot prevent bank runs.
- LCR and RMC measures perform best at ensuring stability and limiting credit volatility.

High credit risk

- CAR and CCB cannot prevent bank runs.
- LCR and RMC perform best at ensuring stability, but possibly at the cost of halting credit intermediation.

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Model set-up

"No regulation" baseline scenario

Banker decides

- **Liability side**
  - How much equity? Buffer for liquidity problems, but agency/asym.info problem.
  - How much deposits? Addresses agency problem, but at cost of bank fragility (absence of deposit insurance).
  - Internal funding? No fragility and no agency problem, but depends on past decisions.
- **Asset side**
  - How much risky loans?
  - How much safe/liquid assets?

Banker maximises profits by optimising over "Mode":

- **"Safe" Mode**: no run of deposits possible in any scenario (note: when riskiness of loans is too high=> safe mode is impossible)
- **"Risky" Mode**: only run possible in worst possible scenario at t=1 <u>and</u> t=2.
- **"Failure" Mode**: run in bad scenario possible already at t=1.

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Description of "no regulation" baseline (counterfactual)

Profit-maximising choice of "Mode":

- **"Safe Mode"**
  - T=0: deposit funding + equity funding
  - T=1:
    - Good state: internal funding + deposit funding (given absence of risk)
    - Bad state: internal funding + external funding
- **"Risky Mode"**: only run in worst possible scenario at t=1 <u>and</u> t=2
  - T=0: deposit funding + equity funding
  - T=1:
    - Good state: internal funding + deposit funding (given absence of risk)
    - Bad state: <u>(less)</u> internal funding + <u>deposit</u> funding (fragility)
- **"Failure Mode"**: run in bad scenario already at t=1
  - T=0: <u>(less)</u> deposit funding + <u>(less)</u> equity funding
  - T=1:
    - Good state: <u>(less)</u> internal funding + deposit funding (given absence of risk)
    - Bad state: failure/run

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Model results depend on riskiness of first period loan riskiness Δ

L_{1g} will be first best across strategies. L_0 and L_{1b} will depend on strategy chosen by bank.

Credit risk "very low": best of both worlds possible – "safe mode"

- ⇒ **Bank stability never a concern.**
- ⇒ **Loan supply always efficient: even in bad state, first period loans can be pledged to roll over existing debt and support new loans.**

Credit risk "low" => still "safe mode"

- ⇒ **Bank stability still not a concern.**
- ⇒ **Loan supply still efficient: in bad state now a liquidity problem arises. Possible funding constraint problem anticipated by banker at start: more loans made initially => volatility in loan supply (procyclicality)**

Credit risk "high" => switch to "risky mode"

- ⇒ **Opt for deposit issuance in bad state. Implies more fragility. Hence (much) less lending in the first place.**

Credit risk "very high" => switch to "fail mode"

- ⇒ **Failure in bad state at t=1. Loan supply will be suppressed even more.**

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Conclusion from counterfactual (no regulation)

Bankers may risk a bank run if credit risk is sufficiently high.

=> Key question: Can regulatory instruments avoid bank runs without negatively affecting loan supply?

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Analysing the effect of introducing regulation

Introducing a CAR

- **Procyclical impact: More loans initially and less in second period in bad state.**
- **No improvement in bank stability, or only at prohibitive costs in terms of bank lending reductions.**

Introducing a CCB

- **Procyclicality can be mitigated only by choking off lending, for considerable credit risk and when CCB is not too strong.**

Introducing a LCR

- **Will not change loan supply, as requirement will be met by issuing deposits to be invested in risk-free asset.**
- **Trade-off bank stability and loan supply.**

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Analysing the effect of introducing regulation

Introducing a RMC

- **For no or low risk: no implications, hence does better than CAR as it does not impact loan supply.**

- **For significant risk: stability will be improved, at a cost to loan supply**

- **For very high risk: credit intermediation stops, because banks will only hold liquid assets**

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In sum

Interesting paper. Relevant research topic.

But policy recommendations seem quite strong, given stylised nature of modelling exercise and the numerous underlying assumptions.

Model may need to be revised in order to better reflect reality.

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Are model assumptions innocuous?

Impact of single instrument? (silo-thinking)

⇒ **Basel 3's strength is being a multiple-measure framework.**

⇒ **Liquidity and solvency requirements partially substitutable?**

Counterfactual?

⇒ **No instability in baseline scenario (S&R-mode), despite absence of deposit insurance, because of runs occurring only due to fundamental reasons and risk-neutrality.**

Risk-neutral utility curves for bankers and investors?

⇒ **In Diamond and Dybvig (1983), the classic model to explain deposit runs, risk-averse savers are of critical importance, as model results break down otherwise.**

"Risk free assets yield exactly the return required by depositors."

⇒ **Why do banks even exist, if deposit account return does not smooth ST and LT asset**   **return?**

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Are model assumptions innocuous? (continued)

"Raising funds for risk-free asset investments does not affect bank profits nor bank ability to grant risky loans (given perfect competition among investors)."

⇒ **Volume of risk-free assets can be disregarded in baseline scenario**

⇒ **Reality suggests that banks will leverage up and increase their profitability through (allegedly) risk-free asset investments.**

"We assume that the regulatory instruments cannot be made contingent on the bank-specific risk Δ but only on the economic state in which a bank finds itself at the beginning of the second period."

⇒ **Please explain. In reality, we do have bank-specific CAR, LCR, etc.**

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Are model assumptions innocuous? (continued)

Are dividend pay-out ratios constant over scenarios?

⇒ **Prompt corrective action: profit retained should depend on state of the world or bank's solvency?**

Can market discipline be neglected (in absence of safety nets)?

⇒ **Complete withdrawal of (implicit TBTF) government support assumptions would lower a GSIB's PD with 33% (e.g. from 1.5% PD to 1% PD), as banks would chose more conservative investment strategies.**

Partial equilibrium model: "dynamic model"?

⇒ **No feedback effects, interconnectedness, systemic risk, etc.**

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In sum

Interesting paper. Relevant research topic.

But policy recommendations seem quite strong, given stylised nature of modelling exercise and the numerous underlying assumptions.

Model may need to be revised in order to better reflect reality, such as:

⇒ **Regulatory framework is a multiple-measure framework.**

⇒ **Investors are risk-averse. Panic-driven deposit runs can and do occur.**

⇒ **Dividend-pay-out ratios may not be constant over time.**

⇒ **Risk-free asset investments cannot simply be neglected.**

⇒ **Safety nets have an impact on bank risk-taking (market discipline).**

⇒ **Trade-off between stability and lending: ST vs LT.**

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