

Capital Requirements in a Quantitative Model of Banking Industry Dynamics

Dean Corbae & Pablo D'Erasmus

*Discussion by Javier García-Cicco
Central Bank of Argentina**



Workshop IDB/BCCh

"Basel III in the context of the macroprudential approach"

*The views expressed are those of the author and do not necessarily represent official positions of the Central Bank of Argentina or its Board members.

- ▶ *Tour de force* on banking industry and regulation.
- ▶ Careful in modeling empirically-relevant features of banking industry.
- ▶ Deals with many of the computational challenges required to provide a quantitatively-relevant policy analysis.

- ▶ *Tour de force* on banking industry and regulation.
- ▶ Careful in modeling empirically-relevant features of banking industry.
- ▶ Deals with many of the computational challenges required to provide a quantitatively-relevant policy analysis.
- ▶ Main model features:
 - ▶ Banks help to reduce monitoring costs. Limited liability.
 - ▶ Counter-cyclical markups in banking due to entry and exit.
 - ▶ Non-trivial size distribution of banks; relevant for policy analysis.
 - ▶ Costly, state-dependent equity issuance.
 - ▶ Asset side includes loans and other liquid assets.
 - ▶ Policies: capital and liquidity requirements. Deposit insurance.
 - ▶ “Partial” equilibrium: muted macro feedbacks.

- ▶ Substitution between loans and liquid assets.
 - ▶ Capital requirements are supposed to affect loans.
 - ▶ Effects heavily depend on the degree of substitution between loans and liquid assets.
 - ▶ Model implications for correlation between loans and liquid assets?
 - ▶ Conditional correlation after monetary policy shocks?
 - ▶ Role of same maturity for loans and liquid assets?

- ▶ Substitution between loans and liquid assets.
 - ▶ Capital requirements are supposed to affect loans.
 - ▶ Effects heavily depend on the degree of substitution between loans and liquid assets.
 - ▶ Model implications for correlation between loans and liquid assets?
 - ▶ Conditional correlation after monetary policy shocks?
 - ▶ Role of same maturity for loans and liquid assets?
- ▶ Implementation of counter-cyclical capital requirements.
 - ▶ In the model, they change automatically given exogenous states of nature.
 - ▶ Basel III recommendations:
 - ▶ Based on the evolution of some observable (eg. credit/GDP).
 - ▶ They are announced but implemented after some time (anticipated).
 - ▶ Robustness to changes along these lines?

- ▶ Monetary policy and bank lending.
 - ▶ Most of the empirical literature uses data in which changes in monetary policy are perceived as temporary.
 - ▶ In the exercise the rate rises permanently.
 - ▶ Robustness to transitory shock (eg. using average duration of rate changes or identified policy shocks in the data)?

- ▶ Monetary policy and bank lending.
 - ▶ Most of the empirical literature uses data in which changes in monetary policy are perceived as temporary.
 - ▶ In the exercise the rate rises permanently.
 - ▶ Robustness to transitory shock (eg. using average duration of rate changes or identified policy shocks in the data)?
- ▶ Dividends vs. equity and capital requirements.
 - ▶ Reducing dividends is free while issuing equity is costly. After small shocks they are substitutes.
 - ▶ The fit regarding the frequency of equity issuance and dividend payments is not that good.
 - ▶ How is the relationship between these two in the data, besides just the frequency? How does the model replicate these facts?
 - ▶ Robustness to an alternative version trying to isolate the effect?
e.g. a model in which equity issuance is just equal to negative dividends (cost only with $div < 0$).

- ▶ Self-imposed capital buffer:
 - ▶ Banks in the model hold more capital than required.
 - ▶ They do so to insure against the possibility of exit.
 - ▶ The effect of capital req. is non linear and size dependent:

Bank type	Extra capital ratio		
	$\varphi_\theta = 0$	$\varphi_\theta = 0.4$	$\varphi_\theta = 0.85$
Top 10	1.95	2.10	3.27
Fringe	10.16	6.54	10.68

- ▶ It would be interesting to understand this non-monotonicity.

- ▶ Self-imposed capital buffer:
 - ▶ Banks in the model hold more capital than required.
 - ▶ They do so to insure against the possibility of exit.
 - ▶ The effect of capital req. is non linear and size dependent:

Bank type	Extra capital ratio		
	$\varphi_\theta = 0$	$\varphi_\theta = 0.4$	$\varphi_\theta = 0.85$
Top 10	1.95	2.10	3.27
Fringe	10.16	6.54	10.68

- ▶ It would be interesting to understand this non-monotonicity.
- ▶ Policy and bank concentration.
 - ▶ The model predicts more concentration after higher capital requirements.
 - ▶ In the model, this is desirable as it reduces monitoring costs.
 - ▶ But a relevant feature (not in the model) is that higher concentration rises the probability of “systemic” banks, increasing the chances of required bailouts. This may lead to moral hazard problems and more risk taking.

- ▶ Financial frictions in the corporate sector:
 - ▶ Investment and fisherian deflation.
 - ▶ Default probability depending on endogenous variables.

- ▶ Financial frictions in the corporate sector:
 - ▶ Investment and fisherian deflation.
 - ▶ Default probability depending on endogenous variables.
- ▶ Welfare:
 - ▶ Risk aversion: HH and Entrep. vs. Banks.
 - ▶ What social problem is regulations solving?

- ▶ Financial frictions in the corporate sector:
 - ▶ Investment and fisherian deflation.
 - ▶ Default probability depending on endogenous variables.
- ▶ Welfare:
 - ▶ Risk aversion: HH and Entrep. vs. Banks.
 - ▶ What social problem is regulations solving?
- ▶ Risky liquid assets? Particularly relevant in EMs.

- ▶ Financial frictions in the corporate sector:
 - ▶ Investment and fisherian deflation.
 - ▶ Default probability depending on endogenous variables.
- ▶ Welfare:
 - ▶ Risk aversion: HH and Entrep. vs. Banks.
 - ▶ What social problem is regulations solving?
- ▶ Risky liquid assets? Particularly relevant in EMs.
- ▶ Bank size and interest rate dispersion.