



9TH JACQUES POLAK ANNUAL RESEARCH CONFERENCE
NOVEMBER 13-14, 2008

The Procyclical Effects of Basel II

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Presented at the 9th Jacques Polak Annual Research Conference
Hosted by the International Monetary Fund
Washington, DC—November 13-14, 2008

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IMF, Washington, DC, November 14, 2008

Objective and Results

- Analysis of loan-supply cyclicality: Basel II vs I
 - borrowers locked into lending relationships; as a result,
 - balance-sheet quality impedes access to equity market
- Endogenous capital structure under exogenous shocks
 - ambiguous impact of capital requirements: buffer effect vs. future lending capacity depends on loan-loss distribution
 - numerical calibration: banks hold 2% to 5% excess capital
- Tradeoff between loan supply and bank failure
 - capital/loans: Basel II more/less cyclical than I or laissez-faire
 - small adjustments to IRB rules have large effects: QIS 3 to 5

Procyclical Capital Standards

- The conjecture: capital now determines future lending
 - default risk positively correlated with business cycle
 - IRB approach explicitly links bank lending to capitalization
- The fear: Basel II amplifies lending cycles
 - built-in feedback effects exacerbate business cycles
- The (not so hidden) agenda: “say it ain’t so”
 - linkages between capitalization, lending, and business cycle
- The doubt: banks hold more capital than required
 - empirical fact: capital more stable than lending over cycle

Comments: Model

- Endogenous dynamic capital-structure design
 - tractability: stylized equity, deposit, and credit market
- Key assumption: limited access to capital market
 - OLG matching model between firms and banks
 - banks need to hoard capital for bad times or go bust
- Static cross-sectional model: any dynamics?
 - banks access capital with time-varying probability
- Competition: various barriers to (free) entry?

Numerical Assumptions

- Given ambiguous comparative statics, use Basel II's IRB rules (1/3) for parameterization
 - regulatory assumptions frame numerical analysis
 - taking into account endogenous reaction by banks
- From failure rate to default probability and back
 - failure distribution: Vasicek (2002), default rates
 - calibrated to Basel I standards, not actual defaults
- AH (2006, 2007): 2.7% to 5.8% delinquent
 - why not use FDIC or QIS data on delinquency?

Comments: Numerical Results

- Very high capitalization: in excess of 11%
 - excess capital higher and more volatile under BII
- Initial capitalization higher under Basel II than I
 - reflection of IRB or inability to raise external funds?
- Loan pricing very similar under Basel I and II
 - free-entry equilibrium: number of banks should vary across the (i) two Basels, (ii) business cycle
 - capital standards as a barrier to entry?

A Timely Reinterpretation

- Banks face extreme funding constraints caused by variations in asset quality over the cycle
 - hard to value assets, common exposures: lock-in
 - interbank market seizes up due to adverse selection
- Downturn increases default risk: capital crunch
 - banks' inability to raise funds leads to credit crunch
 - inefficient bank failures: depends on state
- Solvency or liquidity crisis?
 - consequences depend on scenario assumptions

Policy Conflict and Welfare Question

- Paper suggests tension between monetary policy and prudential supervision
- Monetary policy makers
 - smooth out lending cycles
 - to avoid cyclical feedbacks
- Prudential supervisors
 - smooth out capitalization
 - to avoid bank failures
- Time inconsistency



“Those who would give up bank soundness to purchase a little temporary growth deserve neither soundness nor growth” (Benjamin Franklin)

More Suggestions

- Capitalization: aggregation across time and banks
 - lending cycles: availability of funds as a function of current default
 - capitalization cycles: access to other forms of funding?
- Equilibrium number of banks: what about fixed costs/barriers?
- Bank failures and rescues: function of transition probabilities
- Fishing the pond empty (Gehrig and Stenbacka on screening cycles)
 - what about time-varying lending opportunities along the cycle?
- Relative size and importance of effects: rationing vs pricing
 - interpretation: “equilibrium buffers insufficient to neutralize effects of recession”
 - extension: welfare tradeoff w/ bank failure
- Exposition: written in FNs
 - more of the derivation into the Appendix, focus on numerical results
 - do we really care about interest rates?
 - terminology: credit rationing, expansion-recession
 - index t vs s : abuse of notation suggestive of the true static nature of model