Mitigating the Procyclicality of Basel II

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Discussion by

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This paper

• Procyclicality of Basel II: in a recession VaR increases, driving up risk-sensitive capital requirements and potentially amplifying the recession.
• However, there is also a potential benefit from risk-sensitive capital requirements: anticipating tighter requirements in recessions, banks build up capital buffers in good times.
• The paper compares both channels and finds that first one dominates: effect of tighter regulation in recession outweighs the buffer effect, making credit crunches more likely.
• Suggestions for improving Basel II: varying confidence interval over the cycle reduces credit crunches without undermining bank solvency.
The model

- Fully dynamic model: overlapping generations of entrepreneurs who each live for two periods
- While perfect competition in first period, entrepreneurs are locked-in in the second period and cannot switch banks
- A bank cannot raise capital after it has financed an entrepreneur
- Model solved numerically using a plausible parameters
- Main finding: risk sensitive Basel II capital requirements indeed increase buffer in good times but not enough to offset effect of tighter regulation in recession
• ambitious paper: model captures a relatively complex dynamic problem
• elegant modelling choices
• produces convincing results which are important for regulation
• general tool to assess impact of different policies in dynamic context

My comments will for most part take a more general perspective, focusing on welfare aspects of procyclicality
Comments on model

• Banks live only for two periods. Thus, loss of franchise value is limited in case of failure. Introducing long-lived banks would increase the franchise value and should lead to higher capital buffers. This may substantially reduce the disadvantages of Basel II.

• Average capital holdings under simulated policy exercises are different (higher under Basel II)
  – This makes it difficult to compare the desirability of the different policies (in particular, since capital induces deadweight losses)
  – Alternative: choose parameters such that average capital holdings (instead of average capital requirements) are constant
Other modelling comments

• Deadweight loss from raising equity may be higher in crises. This would suggest that banks want to hold even higher buffers.

• How does optimal regulation in the model look like? The latter should aim at correcting externalities. The main externality in the model seems to be the one on depositors (or the DI fund) arising in case of bank failure (there should be no externalities on entrepreneurs as bank and entrepreneur can negotiate bilaterally). Does this externality vary over cycle such that it warrants a dampening of procyclical capital requirements?

• Credit rationing is computed as expected percentage of projects that cannot be continued. However, expected return from projects differs across states. Thus should consider computing expected output loss from discontinuations.

• PD are chosen to produce 8% capital requirements, shoulnt we take historical PDs?
Welfare implications

• Welfare effects of policies are unclear
• At least three sources of inefficiencies:
  1. deadweight loss from raising capital
  2. worthwhile projects may not be undertaken in interim period
  3. bank failures (though not costly in model)
• Basel II does worse (relative to Basel I) in terms of 1. and 2. but not in terms of 3., net effect thus unclear
• Furthermore: externalities typically associated with 3., hence would expect banks to make more efficient choice under Basel II
Welfare-based analysis of procyclicality

• Undesirability of procyclicality is often taken as axiomatic
• However: should be result of welfare-based reasoning
• Note that existence of negative feedback loop not sufficient because:
  – there may be a (potentially) offsetting positive feedback mechanism in a boom
  – As long as there are no externalities banks should anticipate feedback and choose optimal buffers
• In order to show inefficiency of procyclicality need externality that varies with the cycle
Example I: Inefficient Procyclicality

• firms are borrowing-constrained by the value of their collateral (as in Kiyotaki and Moore, 1997)
• this should introduce a positive externality from bank lending in boom, and a negative in recession
• the latter externality may be higher than the former because in a recession firms are more constrained, potentially justifying regulation that smoothes lending
Example II: Optimal procyclical regulation

- consider a single bank with standard risk-taking externality: bank does not take into account losses to depositors in case of default and hence invests too much in risky projects
- regulation corrects externality by setting (binding) capital requirements (static model)
- in a boom productivity of assets is high and default risk is low, thus socially efficient level of investment increases
- optimal capital requirements hence have to be loosened in boom, and, conversely, be tightened in a recession
Smoothing at all points in the cycle?

- Even if smoothing lending over cycle is on average optimal, not clear whether smoothing should be done at all points in the cycle.
- For example: at start of a boom an increase in lending may be socially desirable and hence capital requirements should not be tightened.
- However, later during the boom (when bubbles may form) a smoothing of lending may indeed be optimal and capital requirements should be tightened.

This suggests that efficient path capital requirements over the cycle may be more complex.
• Very interesting and well done paper which allows to analyze procyclical effects of capital requirements

• Need for welfare-based analysis of procyclicality