Procyclicality of some regulations

Brunnermeier et al. Section 1

Insufficient Reach Vs Regulatory Failures

There is a widespread view that the Credit Crunch of 2007-9 was, in part, a result of insufficient reach of regulation and that a solution is to take existing regulation and spread it more comprehensively across more institutions and jurisdictions.

That would be an incorrect diagnosis.

At the heart of the crisis were highly regulated institutions in regulated jurisdictions.

The crisis has involved a regulatory failure as much as anything else.

CAPITAL ADEQUACY REQUIREMENTS (CARS)

Capital Adequacy Requirements (CARs)

- The reason why we try to prevent banking crises is that the costs to society are invariably enormous and exceed the private cost to individual financial institutions.
- We regulate in order to internalize these externalities.
- The main tool which regulators use to do so is capital adequacy requirements (CARs).
- The approach implicitly assumes that we can make the system as a whole safe by simply trying to make sure that individual banks are safe.

3. Capital Requirements

- Reduces moral hazard: banks have more to lose when have higher capital
- More capital can also cushion bad shocks
- Can be regulated in 2 ways:
  - Based on leverage ratio (equity capital/assets)
    - The ratio must exceed 5%
    - Does not concern risks and off-balance-sheet activities (activities that affect bank profits but do not appear on bank balance sheets, e.g. loan sales, fees, securities trading)
  - Basel Accord: Risk-based capital requirement

3. Capital Requirements

- **Basel Accord:**
  - Banks are required to hold as capital at least 8% of their risk-weighted assets
  - Assets and off-balance-sheet activities are allocated into 4 categories, each with different weight
    - 1st category: zero weight, covering reserves and government bonds
    - 2nd category: 20% weight, covering claims on banks in OECD countries
    - 3rd category: 50% weight, covering municipal bonds and residential mortgages
    - 4th category: max. 100% weight, covering loans to consumers and corporations

3. Capital Requirements

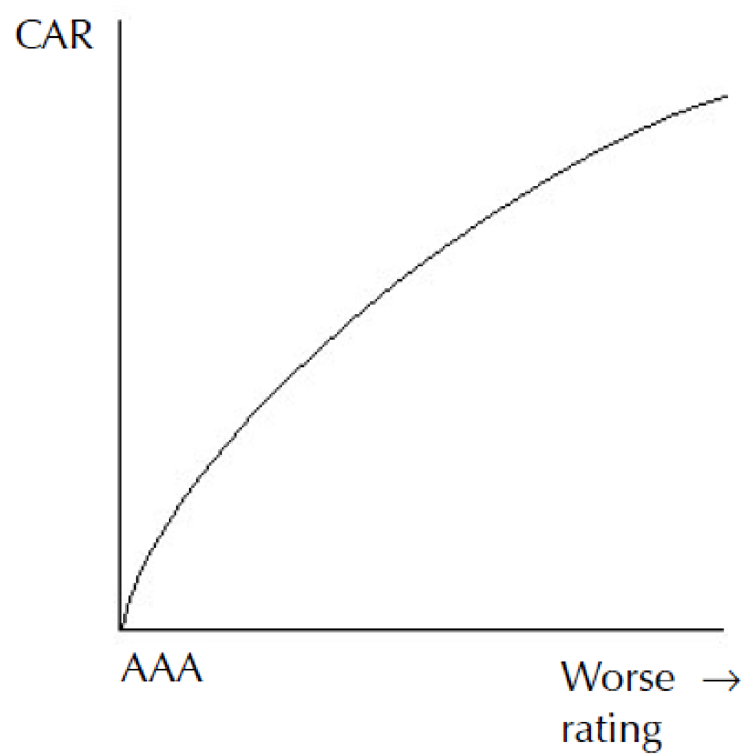
- Overtime, limitations of the Basel Accord have become apparent
- Regulatory arbitrage: a practice in which banks keep on hold assets that have the same risk-based capital requirement but are relatively more risky
- This leads to Basel 2

3. Capital Requirements

- **Basel 2:**
  - Based on 3 pillars
  - Pillar 1 links capital requirements for large, internationally active banks more closely to actual risk of three types: market risk, credit risk, and operational risk
  - Pillar 2 focuses on strengthening the supervisory process in banking institutions and evaluating the process to determine how much capital they need
  - Pillar 3 focuses on improving market discipline through increased disclosure of information

3. Capital Requirements

Figure 1 The Relationship between Credit Ratings and Capital Adequacy Requirements



Source: Brunnermeier et al. page 8

Procyclicality of CARs

- But the regulatory capital is held against ***unexpected*** loss, not against expected loss.
- The rating of assets measures the expected probability of default, whereas what matters is the likelihood of migration (downwards) of the rating (which is *unexpected*).
- Banks that hold more AAA assets have more systemic risk (negative externalities) for 3 reasons:
  - AAA assets are truly systemic, in the sense that they only lose value in a system-wide crisis, whereas BBB assets generally incorporate considerable idiosyncratic risk.
  - The decline in value of AAA assets from migration is greater.
  - An equivalent horizontal migration leads to a greater proportionate requirement for extra capital buffer.
- Bad economy sends greater impacts to banks that hold AAA assets, under the current CARS.

MARK-TO-MARKET

Mark-to-Market

- Often in the name of transparency and modernity, the increasing role of current market prices on behaviors of financial institutions are intensified.
- This can be seen as another tool to internalize negative externalities.

6. Disclosure requirements

- Individual depositors and creditors do not have enough incentive to produce private information about the quality of a financial institution's assets
- Regulators require banks to adhere to certain standard accounting principles and disclose a wide range of information
- More public information can better enable stockholders, creditors, and depositors to monitor financial institutions and act to deter excessive risk taking behaviors
- This can also improve the ability of financial markets to allocate capital to most productive uses

6. Disclosure requirements

- **Mark-to-market accounting** (assets are valued in the balance sheet at what they could sell for in the market) is implemented
- The rationale is that market prices provide the best basis for estimating the true value of assets, and hence capital, in the firm
- Before mark-to-market accounting, firms rely on traditional cost basis. But present conditions have not been taken into account
- However, mark-to-market accounting is procyclical

Procyclicality of Mark-to-Market

In the up-phase of an economic cycle

- price-based measures of asset values rise, volatility-based measures of risk fall, and competition to grow bank profits increases.
- Most financial institutions respond by
  1) expanding their balance sheets
  2) trying to lower the cost of funding by using short-term funding from the money markets
  3) Increasing leverage

When the boom ends

- Asset prices fall and short-term funding dries up.
- Forced sales of assets drive up their measured risk, and the boom turns to bust.
- The sales drive down the current market price of the same assets held on other banks' books, when these are valued on a mark-to-market basis.
- This further drives down asset prices and financial intermediaries' assessed profit and loss and balance sheet net worth