Lecture 5 – Bank Capital Adequacy Regulation

Rationales for Capital Regulation

Role of Equity Capital

- Banks equity capital must be sufficient to absorb unanticipated losses
- The write-offs decrease the profit, therefore is recorded as a decrease in the cumulated retained profits
- Shares capital cannot be taken away for loss but 1) allow retained profit to go negative and 2) can rebuild cumulated profits by not distributing dividends
- The objective is to **protect creditors** (depositors and other lenders to the bank) and to maintain the stability of the financial system

Rationale for regulation and international regulation

- Banks underestimate the safety aspect (private cost of failure lower than social cost), and therefore would tend to choose a level of capital lower than socially desirable
- The harmonisation of the rules is a necessity when financial markets are global to avoid banks to choose the less demanding countries

Principles of Regulation

- Main regulation imposed on banks, and takes a pre-emptive approach
- Enforces a minimum capital level for banks as a proportion of some measurement of the assets

Basel Accords

- Has become an international regulation applicable to all industries countries
  - Basel I (1998)
  - Basel II (2004)
  - Basel III (2010)

Basel Accords: first pillar

- Imposes a minimum size to the regulatory capital of the bank as a % of the risk-weighted asset side

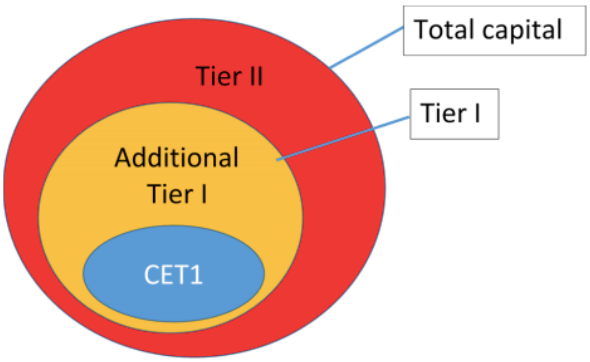
$$\text{Risk Asset Ratio} = \frac{\text{regulatory capital}}{\text{risk weighted assets}} \geq \text{miniumum ratio}$$

$$\begin{aligned}\text{regulatory capital} &\geq \text{minimum capital requirement} \\ &= \text{minimum ratio} \times \text{risk weighted assets}\end{aligned}$$

- The regulation is interested in the quality not the quantity, contrary to the leverage ratio

3 minimum ratios

	CET1	***Tier 1***	***Total Equity***
Basel III	*4.5%*	*6%*	*8%*
Basel I&II	*2%*	*4%*	*8%*



Minimum Leverage Ratio

- In Basel III revisions, additional basic minimum Tier 1 leverage ratio as a backstop at 3%
    - Tier 1/Total Asset >/= to 3%
- This constraint may bite even when the RWA ratios are met

Other risks covered by minimum ratio

- Market risk (amendment during Basel I)
- Operational risk (Basel II)
- Interest rate risk in Australia

Other pillars of regulation (since Basel II)

- **Second pillar** – supervisory review process where supervisors evaluate bank measurement techniques with respect to credit and operational risks and possibly impose a different (larger) minimum capital ratio
- **Third pillar** – market discipline by which banks are required to increase their information disclosure, especially on the measurement of credit and operational risks and on their regulatory ratios

Regulatory Capital

- Tier1 (highest quality)
    - Common equity Tier 1 (fundamental tier 1): ordinary shares, retained earnings, current year earnings, reserves from revaluation of securities, foreign conversion reserves
    - Additional Tier 1: perpetual non-cumulative preference shares, perpetual non-cumulative capital notes
- Tier II (lower quality)
    - Perpetual cumulative preference shares
    - Term subordinated debt, life limited preference shares
- Tighter Definitions of capital in Basel III
  non-common equity capital definitions are *stricter* in Basel III
- Need for loss absorption feature (conversion into equity when trigger occurs)
- Most capital needed replacing 2011 to 2016
- Explains massive issue of capital notes

RWA in Basel I: ad hoc weights

Asset	Weight
Cash/loans to OECD government	0
Non OECD government loan, local authority lending and interbank lending	0.2
Mortgages	0.5
Commercial Lending	1

Basel I weight not risk-sensitive enough

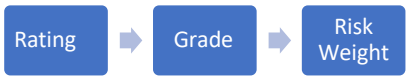
- Only 4 rough buckets, not enough discrimination
    - Subprime mortgages don't require more capital than a prime mortgage
    - Lending to Zimbabwe doesn't require more capital than lending to QLD government

<u>Basel II and III</u>

Two Approaches for risk weights

1) Standardised approach: the weights are imposed by the regulator per category of Basel I and differentiated on the basis of credit rating
2) Internal ratings based approach: using bank home credit risk models

Credit Risk Standardised Approach



- Each borrower's credit risk is given by the ratings of external credit assessment agencies
- Then for each type of rating agency and each type of borrower (sovereign, corporate, banks) the supervisor provides a grid on conversion from the agency's rating to a grade then a risk weight

Basel II and III increase the 'risk sensitivity' of the minimum capital requirements, compared to Basel I