



Enhancing Risk Management and Governance in the Region's Banking System to Implement Basel II and to Meet Contemporary Risks and Challenges Arising from the Global Banking System

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Capital Adequacy Standards and the Role of Bank Capital

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Outline

- What is capital, what role does it play?
- How is capital measured?
- How much capital is desirable?
- How does capital influence bank behaviour?

Bank Capital: Alternative Perspectives

- For the Owner
 - Wealth tied up (measured as share market value)
 - Require adequate return as risk compensation
 - Provides control
- For Customers/Counterparties and Regulator
 - Buffer to absorb risk
 - providers of capital rank below liabilities to customers
 - buffer could consist of equity / subordinated debt / guarantees

Bank Capital: Alternative Perspectives

- For the Bank Manager
 - Funds provided to operate business (accounting value)
 - But must manage “to” stock market value
 - Return on capital achieved is performance measure
 - “Capital risk” is a risk to manage
 - meeting regulatory capital requirements
 - having adequate capital to get desired rating (AA etc) from ratings agencies
 - being able to pursue attractive expansion opportunities

Capital Measurement

- Capital is a balance sheet “residual”
 - difference between value of assets and other liabilities (and allowing for off-balance sheet/contingent liabilities)
- Alternative measurement approaches
 - Book value/historical cost
 - Mark to market/model
 - Stock market value

Example

- NewBank set up with \$10 equity (10 x \$1 shares) and \$90 deposits, buys \$100 of CDO's
- Subsequently
 - Stock market price of shares = \$1.50
 - Market for CDO's freezes, and mark to model value is \$80
- Size of bank's capital is
 - (a) \$10; (b) \$15; (c) -\$10; (d) other ?
- Valuation technique matters for measuring capital
 - How does the Basel Accord calculate capital?
 - How do International Accounting Standards calculate capital?

Capital Measurement Problems

- Bank Failures often involve sudden recognition of long standing, but unrecorded, losses
 - Write down of asset values to “true” value
 - Corresponding write down of capital
- US Examples
 - The Farmers Bank & Trust of Cheneyville
 - Closed December 17, 2002, fraudulent loans
 - Reported assets \$35.4 m, liabilities \$32.9 m
 - Cost to FDIC \$11 m
 - The Bank of Alamo
 - Closed November 8, 2002, Poor lending, insider abuse
 - Reported assets \$59.8 m, liabilities \$56.5 m
 - Cost to FDIC \$ 8 m

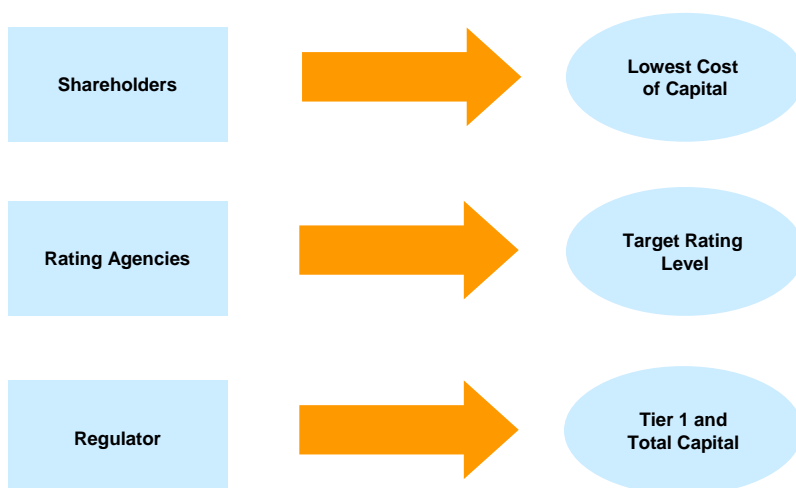
How Much Capital?

- Regulatory Capital requirements:
one or both of
 - Minimum Capital/Assets (leverage / gearing)
 - Minimum Capital/(Risk Weighted Assets) – Basel
 - Relate capital required to riskiness of activities
- May allow some non-equity liabilities as capital
 - Rank behind, and provide protection to, depositors
- Measurement by a mix of book and mtm value

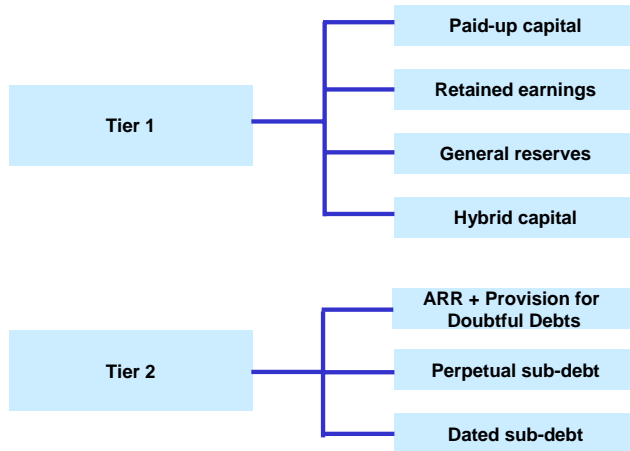
How Much Capital?

- Economic Capital
 - Banks determine economic capital based on preferred risk tolerance/appetite
 - Choose “acceptable” probability that losses over one year could exceed equity capital and lead to bankruptcy
 - Major banks appear to operate to risk tolerance of less than 1 in 500 (99.5% confidence interval)
 - Based solely on equity capital
 - Actual capital level may be higher to meet ratings agency requirements for target rating.
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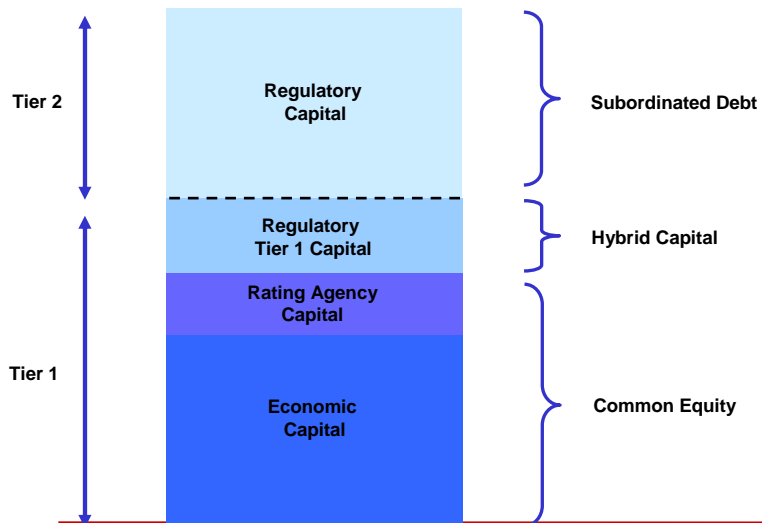
What Drives the Capital Structure?



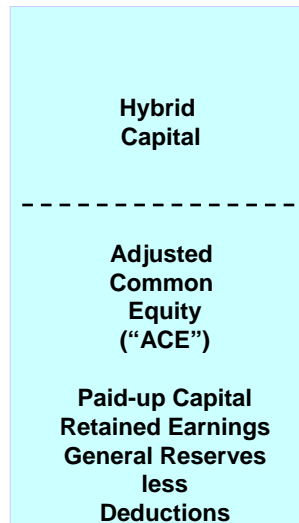
Components of the Capital Structure



Balancing the Competing Requirements



Tier 1 Capital Mix



- Generally provides funding gap between ratings and regulatory capital
- Provides increased capacity for LT2 capital
- Minimal cost differential between hybrid T1 and UT2.



Determining Economic Capital: Example

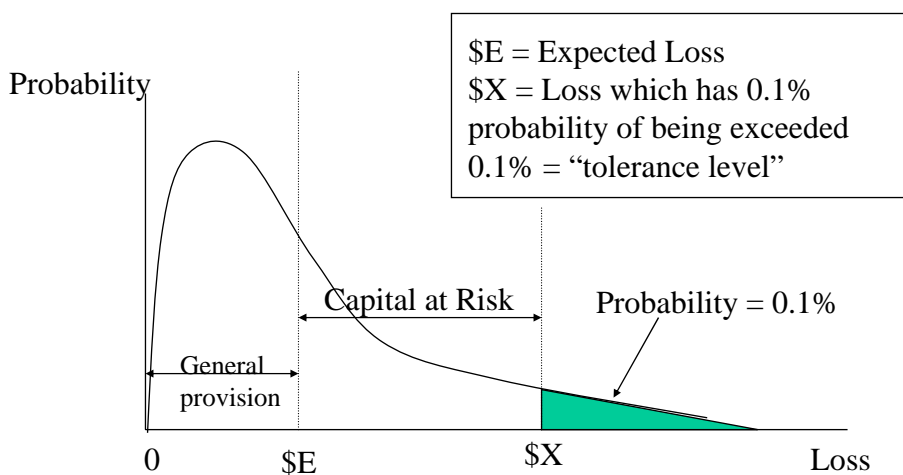
- Consider a bank making a loan of \$100 to be repaid with interest in one year at an interest rate of 10% p.a.
 - Funded by \$90 of deposits and \$10 of equity
- Promised repayment = \$110, but
 - Assume probability of default = 10%
 - Recovery if default = \$80
- Expected repayment = $0.1 \times \$80 + 0.9 \times \$110 = \$107$
- “Expected (Average) Loss” = \$3
 - Possibility that loss could be greater or less
 - 10% chance of \$30 and 90% chance of \$0)



Bank Balance Sheet Effects

- Depend on accounting practices, for example:
- Assets
 - Loan (less provision) = $100 - 3 = 97$
- Liabilities
 - Deposits = 90
 - Equity (less provision) = $10 - 3 = 7$
- Note:
 - Expected losses should be “absorbed” by provisions and by loan pricing
 - Accounting values differ from economic values
 - Equity capital (after provisions) is the buffer to absorb unexpected losses – referred to as economic capital or capital at risk

Loss Function and Economic Capital



Capital and Bank Behaviour

- Capital constrains size of balance sheet
 - Current crisis situation: Losses reduce capital, low equity prices make equity raisings difficult, lead to restriction of loans
- Capital is costly, loan pricing reflects cost of capital (and of deposits)
 - Current crisis situation: high cost of equity capital (low bank share prices)

Conclusions

- Bank Capital Management involves managing both economic and regulatory capital
- Capital planning is critical
- Measurement and management of capital position requires correct accounting and valuation processes