



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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Current Issues in Bank Capital Planning

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The international credit crisis has seen many banks around the world suffer significant declines in their capital positions, reflecting the fact that capital is the difference between the value of assets and other liabilities. Thus when banks make losses, increase provisions for doubtful debts, or write down the value of assets held, their capital position declines.

That reduction in capital as measured on the balance sheet (book value), has been accompanied by reductions in bank share prices, such that the market value of banks has also declined. In general, the decline in market values has far exceeded the decline in book values. The reason is that market values reflect expectations of future earnings, and investors have reduced their expectations of future bank profits and resulting dividends. When expectations turn from high growth to no (or negative) growth, the effect on share prices can be particularly severe.

This is creating a major problem for world economies, because reduced bank capital is one key factor preventing expansion of credit to restimulate economic activity. Under the Basel capital accord rules, and subject to a few qualifications, bank capital needs to grow at a similar rate to lending and deposit growth. Unless banks can rebuild their capital, their willingness and ability to lend is limited.

But the banks face a major challenge of raising the equity (or other allowable forms of regulatory) capital to underpin growth.

Bank capital is unlikely to grow organically at anywhere near the rate required to meet expanded demand for bank services. Higher wholesale funding costs are eating into bank profits, increasing interest rate competition for retail deposits, and forcing them to increase loan interest rates. Greater provisions for losses from loans to now distressed companies are also going to eat into available capital.

One of the dangers for world economies is that attempts by banks to grow capital organically can adversely affect economic growth. If banks widen interest rate spreads in an attempt to increase profit (and thus generate capital internally) economic activity will be dampened. And in many countries, bank shareholders have become used to high and stable dividends from banks, which means that bank managers will be reluctant to decrease dividends (and retain earnings to boost capital) for fear of further depressing their bank's share price.

And with bank equity values already having been trashed by the stock market, this is not a good time to make new share issues. The cost of equity capital has increased significantly. This can be seen, for example, in lower price-earnings (P/E) ratios. Investors are demanding much higher earnings levels than previously to make them willing to hold existing bank shares, or buy additional shares, at the current share price. The consequent need to issue many more shares to raise a given amount of capital dilutes the interests of existing shareholders.

More generally, the potential share market reaction is a problem for any bank seeking outside capital. Is it in need of capital because of its poor financial position or because it has significant opportunities for profitable expansion of business? Great care needs to be taken to ensure that the market interprets any equity raising as growth-oriented good news rather than recapitalization bad news.

Here, fortuitously, the financial engineering skills that spread the sub-prime mess, may help resolve the problem. The Australian experience of the early 1990s, when large losses meant that at least two of the four major banks needed recapitalization, and share prices of some major banks had sunk dramatically, provides a good example.

That situation sparked the development in Australia of converting preference shares. This innovation enabled banks to issue permanent capital which, provided share prices recovered over the next few years, avoided the dilution costs arising from the (then) low share price. The “trick” was that investors received a fixed dividend for (say) five years, at which time the securities converted automatically into a fixed value of ordinary shares. If the bank’s share price had increased, a small number of shares would be received, but if it had fallen, a large number of shares would be received. Those securities had their deficiencies, and second and third generation variants have since emerged, and we should anticipate further such innovations as banks seek alternative forms of capital to underpin business growth.

Certain debt securities issued by banks can also count towards regulatory capital. While this is not a good time to issue debt (given the credit spreads prevailing in debt markets), its limited maturity may make it a cheaper solution than raising equity capital, particularly for banks whose low risk debt securities would prove attractive to many pension fund portfolios.

Another (simple) piece of financial engineering can help to resolve the conflicting demands of shareholders wanting high dividends and bank management wanting to retain earnings to build up capital. Dividend reinvestment schemes, whereby shareholders are given the option to take dividends in the form of additional shares (perhaps at a discount to the market price) rather than cash, reconcile these demands. However, because some shareholders may not exercise that option, the bank faces the risk of only partial participation leading to cash outflows. Thus a further response, as well as providing discounts on dividend reinvestment schemes, is to have them underwritten by securities firms and/or institutional investors, who take up any shares not purchased by dividend recipients.

A further problem facing banks, regulators, and the economy, is the tendency for bank capital requirements under the Basel Accord to operate pro-cyclically, involving increases in capital requirements in periods of recession. If ratings decline in a recession, as tends to happen, the capital charges for banks with existing loan exposures to customers with deteriorating ratings will increase. The need to improve capital positions may cause banks to cutback new lending, aggravating the economic downturn.

Hence, recapitalization of banks is an important current issue, and a number of countries have pursued this by way of government providing capital and taking equity stakes in banks. As a short run solution, this may have merit. However, it brings with it significant potential governance problems, as well as moral hazard and competitive neutrality concerns arising from public perceptions that such institutions are government guaranteed.

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Bank Capital Management Practices

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Outline

- Bank capital planning – the drivers
- Meeting capital targets – techniques
- The cost of bank capital – its importance
- Optimizing the capital mix



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Capital Planning

- Capital/Asset (leverage / gearing) target
 - enforced by regulators or voluntary
 - regulatory capital standards based on accounting / actuarial measurements
- optimal leverage reflects cost, risk, information, tax issues
 - government guarantees to other stakeholders (policy holders / depositors) etc. gives incentive to increase leverage and/ or risk of activities
 - risk related capital ratios reflect this concern
 - But may not be adequately calibrated!

Capital Planning

- Expected Growth in Activity determines required growth in capital
- Growth in Capital = Earnings less Dividends plus External Capital Raisings
 - poor past performance creates difficulties in growing capital
 - And losses reduce existing capital base!
 - mutual organizations restricted in accessing external capital

Capital Planning and Allocation

- At aggregate level
 - Alternative forms of capital (in addition to equity) may be suitable for regulators
 - Optimal capital planning requires financing choices to minimize overall cost of capital
- At business unit level
 - Capital needs to be allocated across business units
 - So that product pricing reflects cost of capital
 - For business unit performance assessment

A workshop example

For bank A:

Start of year 0

Total Assets = \$100 (unchanged during year 0)

Risk weighted assets = 0.75(Total Assets)

Capital = 0.060 (Total Assets)

Regulatory Capital Requirement = 8% of Risk weighted assets

For year 0

Return on Assets = 0.2%

For year 1

Expected growth in total assets = 20%

- (i) Does bank A meet the minimum capital requirements at the start of year 0?
- (ii) Explain the dilemma faced by bank A at the start of year 1 and suggest possible solutions?

Workshop solution

Capital Position

Risk weighted assets = \$

Capital/ RWA =

For coming year Earnings =

End of year capital (if full retention) = \$

Expected Assets = \$, expected RWA = \$

Expected Capital/RWA = \$ = %

> or < minimum required?.

Solutions:

What is the cost of bank capital?

- The rate of return which shareholders (& other capital providers) require to compensate for risk
- The bank must meet their expectations that it will deliver this rate of return or else
 - The bank's share price will fall
- Example: required return = 20% p.a.
 - Interpret as an earnings/price ratio
 - If share price is \$10 and expected earnings are \$1 per share, the outcome is ?
 - Share price tumbles to \$5 (earnings/price = 1/5 = 20%)

The cost of capital as a key driver

- Important driver of bank earnings targets
 - Need to meet market expectations of return on both existing assets and franchise value (growth opportunities)
- Crucial for divisional performance assessment
- Fundamental to pricing decisions
 - Interest rates etc need to be set to generate adequate rate of return on capital allocated to that activity

Pricing Decisions

- RAROC (risk adjusted return on capital) Loan Pricing
 - “Break even (required)” quoted loan interest rate

Quoted loan interest rate	=	Expected default loss (%)	+	Operating cost (%)	+	Average Cost of funds
						= Weighted average of Cost of deposits + Cost of Equity
						92% deposit funding @3% 8% equity funding @15%
Example						
0.099 (9.9%)	=	0.01	+	0.05	+	0.92x0.03+0.08x0.15

Pricing Decisions and Credit Techniques

- Managerial objective: price loans at higher rates than RAROC required loan rate
- Market constraint: what are competitors charging
- Better credit assessment techniques may allow competitors to cherry pick good customers
 - A bank which can't distinguish high and low risk customers must charge an "average" interest rate to both
 - Knowledgeable competitor sets higher rate for high risk customers and low rate for lower risk customers
 - Bank gets high risk customers, charges "average" interest rate
 - Not a good strategy for future survival!
- Implication: banks not able to implement "best practice" risk assessment (or without special knowledge) at risk of exit

Performance Measurement

- Cost of Equity is a fundamental input
- Some approaches
- RAROC = risk adjusted return on capital
 - Benefit: can be compared directly with cost of capital
 - Problem: ignores scale of activity (if judged on RAROC, businesses may pass up profitable business which reduces their RAROC even though it returns above the required rate of return)
- EVA = economic value added
 - Earnings – required return on capital employed
 - Needs careful accounting adjustments to convert earnings into a "cash flow" concept comparable to required return
 - Problems of allocating EVA across life of multi-year project

Bank Capital Innovations

- Optimal capital structure involves mix of funding instruments
 - Minimize cost of capital
 - Hybrid instruments have a mix of debt and equity characteristics
 - Preference shares
 - Convertible debt
 - Mandatory converting securities
 - Undated debt “stapled” securities
 - Alternative funding arrangements
 - “Covered” bonds
 - Off Balance Sheet Securitisation
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Bank Capital Innovations: motivation

- Regulatory capital: Basel Accord
 - permits certain non-equity instruments to count as regulatory capital
 - Basel 1 created incentives to off balance sheet securitisation
 - Tax arbitrage
 - Tax systems treat debt and equity differently
 - Financial Market Imperfections
 - Hybrid instruments may be cheaper than deposits, straight debt, and equity
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Popular Capital Instruments

- Converting Preference Shares
- Reset Converting Preference Shares
- Convertible Notes
- Income Securities

“Covered Bonds”

- Long standing financing vehicle in Germany known as “Pfandbriefe”
- Recent increase in popularity in Europe
 - Suggested that Basel 2 will further stimulate
 - Lower risk weights for residential mortgages mean less capital benefit from “off balance sheet” securitisation
- “On-balance sheet” securitisation
 - Bonds issued by bank which have position secured against a set of loans on the bank’s balance sheet
 - If issuing bank goes into liquidation, underlying loan assets split off and run as separate pool

“Covered Bonds”

- Risk to investors depends on
 - Risk of issuer failure
 - Risk of asset pool value and quality
- Low rated bank can issue higher rated bonds (at lower cost)
 - over-collateralisation (covering asset pool > bond issue)
 - Limit on max loan to valuation ratio of loans in asset pool

“Covered Bonds”

- Supervisory arrangements need to reflect bank activities
- Legal arrangements need to ensure investor’s preferred status as claimant over asset pool
- Risk features include
 - Bond and asset pool interest rate mismatch
 - maturity mismatch
 - Asset pool substitution risk
 - Liquidity, currency, servicing risks

“Covered Bonds”

- Main motivation appears to be lower cost of funding vis a vis unsecured bonds
 - But what is impact on cost of other sources of finance?
 - Deposits, equity, unsecured bonds
 - What is source of “value added”?

Conclusion

- Basel distinction between Tier 1 and Tier 2 gives incentives to examine alternative hybrid forms of capital
- Banks well placed to issue such instruments
- Need to carefully assess cost of capital benefits from such instruments