BS2551 Money Banking and Finance

Commercial Bank Risk Management

Need for Risk Management

Increased complexity of risks faced by banks since 1970s due to:

- Competition and deregulation
- Asset price volatility (e.g, floating exchange rates).
- Hedging scope – use of delta hedging for interest rate risk.
- Government protection of banks via the lender of the last resort (safety net from the CB) and moral hazard (car insurance that has the same premium regardless of the number of accidents committed).
- Regulation risks, such as erratic change.
- Business risks increased (such as fraud).

Day to Day Risk Management

Managing Credit Risk

Commerical Banks obtain the bulk of their income from managing credit risk on a continual basis.

Key aspects

- underwriting and loan origination (fees paid to banks to set this up).

- Charging a high enough interest rate to cover the risk.

- Funding and servicing (protect bank's claim for repayment)

- Risk processing – monitoring (following borrowers' activities and ensuring funds are not misused) and diversification (avoid concentration of loans on a single asset such as real estate).

- Credit culture – avoid herding of the market and sticking to the rules (not easing credit standards just because other banks are easing theirs).

Liquidity risk and liability management

- Diversification of funding sources to reduce liquidity risk, e.g., long and short term debt, repos.

- Decide on liability mix, traditional deposits incorporating services and risk sensitive investment instruments (such as fixed rate mortgages).

- Maturity Structure – duration matching between assets and liabilities affects the degree of interest rate risk (e.g. mortgage repayments over a 25 year period are more sensitive to interest rate risk then a one year government bond).

<u>Managing Interest Rate Risk</u>

Balancing potential gain against risk of loss.

Matching of maturities

Floating Rate Loans

Use of derivatives such as interest rate futures.

Managing Market Risk

Value at Risk (VAR) models. Defined as the total value of the potential loss in market value that the bank stands to lose from holding a market position.

$$\mathbf{VARx = Vx * dV/dP * \Delta Pi}$$

Where VARx is the market value of position x, dV/dP its sensitivity to price moves per £ market value and ΔPi is the price movement over time.

Assumptions are required on distribution of price changes (e.g. normal), serial correlation and stability of volatility.

Problems "fat tails", excess skewness and kurtosis in distributions. This suggest that normal distribution gives little information on unlikely events such as 1987 equity market crash, 20 standard deviations.

Even for standard events, assumptions of serial correlation may be unrealistic because the future does not resemble the past.

VARS may generate adverse market dynamics by requiring banks to sell all their assets at once.

Assume risk exogenous when it is clearly an endogenous variable.

Stress Test

Stress test is VAR analysis for extreme events. Stress tests involve identification of consequences of portfolios of worst cases. Examples, oil price crash, stock market crash.

Inability to perform a stress test may show accounting limitations.

Controlling Risk Fraud

Solution: external, internal auditing, examinations.

Managing Existing Customers

Easy to neglect existing customers when managing risk and coping with change.

Strategic pricing so existing customers are not disadvantaged (UK mortgage lenders and mobile phone companies do the opposite).

Maturing relationships with existing customers.

Crisis Management

Typical crises – bad loans, fraud, takeovers.

Banks long term build up of reputation (enabling it to borrow large amounts at reasonable interest rates) and profit rates help it to positively cope.

Strategic Planning

Successful banks tend to do well in the following areas:

- Innovation to ensure profitability.
- Risk Management over the long run.
- Human resources, such as managerial talent through the ranks.
- Marketing to specific customer base.
- Organisational design (mix of central and local control).
- Cost accounting
- Incentives to workforce.