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Finance, Banks



## What are the main risks faced by banks and how does a bank attempt to manage these risks?

All companies which have a profit maximising objective hold a certain degree of risk whether through microeconomic or macroeconomic factors. Banks also face a number of risks atypical of non financial companies due to the payment and intermediary function which they perform. Recent changes in the banking environment has lead to an increased pressure to maximise shareholder value, this means that banks take on a higher risk in order to gain a higher return. It is due to this increased pressure and market volatility that banking risk needs such effective management to ensure the banks continued solvency. Risk can be defined as an "exposure to uncertainty of outcome" measured by the volatility (standard deviation) of net cash flow within the firm. Banks aim to add equity to the bank by maximising the risk adjusted return to shareholders highlighting the importance of fully considering the risk and return business equation. Exposure to risk does not always lead to a loss, pure risk only has a downside from the expected outcome but speculative risk can produce either a better or worse result that expected.

Credit risk is the risk that the counterparty will fail to repay the loan in part or full. This includes delayed payments or any default on the loan agreement. It is widely know that credit risk is one of the most damaging risks to banks, for this reason there is usually a separate credit department run around a credit culture of the management's views. The objective of the credit department will be to maximise shareholder value added through credit risk management. To manage credit risk banks do sometimes take a

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security over the loan such as property or shares which the bank can take possession of in the event of default on the loan agreement. If the market prices of the security become volatile the bank may ask for more security to offset the probability of marginal default increasing. Credit constraints are implemented to make sure there is a restriction on certain loan agreements to a specific category of borrower, well defined credit limits will reduce the risk of adverse selection. Pricing the loan is a technique which uses a risk adjusted premium to determine the rate of interest on a loan, with the riskier the loan the higher the premium, although a higher interest rate may increase probability of default so must be monitored regularly. The final credit risk management method is to reduce credit losses by building a portfolio with diversification between low and high risk lending. This essentially offsets high risk and return lending with low risk and return lending to minimise any losses incurred.

A similar but more specific concept to credit risk is sovereign risk involving risk that a government will default on a loan agreement from a private sector bank. This case is unusual because if a government sates that the default is due to movement of resources to resolve domestic issues it can declare the loan agreement void due to immunity in the legal process, this will barrier debt recovery through the taking the possession of assets and often leave the bank with partial or full loss of the loan. Debt repudiation is an extreme case where the government no longer recognises their debt or obligations to creditors. Due to problems and the high risk associated with government

lending a foreign currency sovereign credit rating was defined in an attempt to enable informed investor lending decisions.

An interest rate is a premium paid in order to consume resources in the present rather than at a later date. Interest rate risk is loss or gain in the value of a position due to changes in the interest rate, it is a speculative risk because the changes in interest rates can lead to both a positive and negative result. There are two types of interest rate which are fixed rate and rate sensitive, the simpler form of risk lies with fixed rate assets and liabilities because a change in the interest rate above or below the fixed rate with lead to a loss or gain in capital. Simulation approaches are highly complex and involve an assessment of the potential changes of interest rates on earnings, future economic value and impact on cash flow. Static simulations assess only the cash flow of on and off balance sheet activity, whereas dynamic simulations build a model predicting the future changes of interest rates and expected changes in the banks activity. The best known interest rate risk management method is gap analysis. This is a detailed analysis of the gap between interest rate sensitive assets and interest rate sensitive liabilities over a specific duration. A rate sensitive asset or liability is defined by an asset or liability in which the cash flow changes in the same direction as interest rates. The changes in interest rates have a detrimental effect if there is a mismatch between rate sensitive assets and liabilities, this is because if the level of rate sensitive liabilities is higher than rate sensitive assets, an increase in interest rates will lead to less profits. High quality

interest rate risk management can effectively increase or decrease the gap in order to maximise revenue.

Operational risk is defined at the risk of loss from a breakdown in internal processes and/or management failure. This can occur through different events such as a law suit, systems failure, or damage to assets and its effects can lead to an increase in unsystematic market risk and liquidity risk. Although there has been significant importance placed upon operational risk there is at present still no clear method of measuring its risk and effects on a general basis.

The Basle II provided three suggested methods of calculating the operating risk of a firm. The basic approach allocates capital using gross income as an indicator for the bank's exposure to operational risk. The Standardised approach divides the bank into business units and lines and uses individual indicators to calculate a department specific level of exposure to operational risk. The final method of calculating operational risk is the internal measurement approach which allows each bank to use individual internal loss data to determine the capital allocation.

Market risk is the risk of movement in the price function of financial instruments, resulting in the loss/gain in value. It is a speculative risk, measured by the probability in potential loss/gain in value of a portfolio. The risk occurs in two separate forms; Systematic market risk is caused by the price movement of all financial instruments due to changes in the macroeconomic climate. Unsystematic risk occurs when an instrument

moves out of line with the rest of the market due to internal factors with the issuer. Systematic market risk can be prepared for in event of downturn in the economic climate by capital allocation to the specific risk calculated by the risk adjusted rate on capital. Value at risk is a measure of potential losses incurred to a portfolio due to adverse market price movements often used in risk management. Unsystematic risk can be offset by diversifications of investments into several different countries and/or industries affectively spreading the risk in attempt to avoid huge losses in specific sector investment. The diversification of investment into foreign countries may increase the potential probability of currency risk.

Exchange rate flexibility exposes all firms with a short or long term position in any given currency to currency risk. Globalised markets have lead to increases in multinational firms and foreign investment, increasing the level of foreign exchange and political risks. Any exchange of money in a currency other than the firm's home currency would be expressed as a purchase of foreign currency. Foreign exchange transactions can involve many forms of on and off balance sheet financial instruments. Duration analysis can be used to compare the value of foreign bond to the foreign or domestic currency interest rates. Measures of net risk exposure for each currency can be assessed using gap analysis and will be equal to the difference between assets and liabilities in each currency.

Political risk arises through the risk of political interference in the operations of a private sector bank, the exposure of which can range between interest rate and exchange regulations to the nationalisation of the financial service

industry. The main factors which have been stated as to affect political risk is internal or external armed conflict, democratic government, and government stability.

The level of Liquidity risk can affected by many of the other risks and is defined as the risk that the bank will have insufficient liquid assets on its balance sheet and is therefore unable to fulfil financial commitments without the sale of assets; this is generated from a mismatch in size and maturity of assets and liabilities on the balance sheet or due to loan defaults with a surge of depositor demands. Day to day liquidity risk (funding risk) relates to the daily withdrawals and is predictable due to low depositor withdrawals, if there was a surge of withdrawals then many banks would rely in loans from the interbank market to cover the short term illiquidity. A more unpredictable risk also arising from increased depositor withdrawals is a liquidity crisis. The increase in withdrawals often stems from lack of confidence in the bank, this situation will force the bank to borrow at an elevated interest rate or rely on central bank intervention and deposit insurance to avoid a run. In this situation the central bank can provide provisions in the form of high interest loans or advances, however this is costly and can further damage the banks reputation. Ideally the bank could use a method of maturity matching to guarantee liquidity and eliminate the funding risks. This is the coordination of cash flow by matching the maturity of an asset with the maturity of a liability. This is unlikely to be a widely used approach as asset transformation is a key source of banking profit. Usually the bank will hold a certain level of liquid assets to reassure creditors and

signal to the market that the bank is doing well, an increase holding of liquid assets will avoid the liquidity problem but due to a trade off between liquidity and profitability lower return on investments. The most widely used technique of managing banks liquidity is Gap analysis, the liquidity gap is defined by the difference between net liquid assets and unpredictable liabilities. This gives the ability to monitor available capital over time.

Financial services differ from other firms because of the high level of financial risks that they assume through the payment and intermediary functions. It is therefore critical to manage the risks faced to ensure solvency and to maximise the firm's value added. In some cases the management of an individual risk can have a positive or negative effect on another risk which shows that they are not mutually exclusive. Many of the main financial crises have risen from a combination of risks surrounding losses due to poor credit risk management, it is important to highlight diversification of a portfolio and asset liability management as influencing factors in effective risk management as they can reduce the probability of several risks. In the future it is important to continue developing new formal and quantitative risk management processes to ensure continues solvency within the financial services industry.