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# Latest Developments in the Field of Risk Management in Banking Industry

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## Abstract

*The paper highlights the risk management practices as new strategies in the banking industry, as a crucial function in banks. Banks have necessities to manage all these risks in effective way if they really want to achieve their target in the pre-planned manner. In the day to day operations banks face various risks; with the help of risk management techniques, conventional as well as modern, banks can identify and manage the risk up to certain extent. This paper focuses on risk management techniques with latest developments.*

## Introduction:

The significant transformation of the banking industry in India is clearly evident from the changes that have occurred in the financial markets, institutions and products. While deregulation has opened up new vistas for banks to augment revenues, it has entailed greater competition and consequently greater risks. Cross-border flows of funds and entry of new products, particularly derivative instruments, have impacted significantly on the domestic banking sector forcing banks to adjust the product mix, and to effect rapid changes in their processes and operations in order to remain competitive to the globalised environment. These developments have facilitated greater choice for consumers, who have become more discerning and demanding compelling banks to offer a broader range of products through diverse distribution channels. The traditional face of banks as mere financial intermediaries has since altered and risk management has emerged as their defining attribute.

## Strategic Imperative for Managing Risk

Risk Management has thus become a part and parcel of the strategic planning process for these organizations to respond multi challenges faced by banks as well as supervisors. There have been various supervisory initiatives to induce better operating standards in banks, greater transparency and sensitivity towards risk management by banks. In the discharge of their day to day operations banks face various risks; these can be categorized under two risk groups viz. business risk which is inherent in the activities that banks undertake and control risks that arise out of inadequacy, breakdown or absence of

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various controls that are used to mitigate business risks inherent in these objectives, measurement of the risk probability and its potential impact on profitability and adoption of appropriate measures for monitoring, control and review. In the financial services sector, risk management is traditionally viewed as a tool relevant for managing lending and trading activities mainly to minimize incidences of fraud. As the sector emerges from the cocoon of patronage and protection to face the world of market discipline, it needs to strengthen its wings by upgrading its risk management techniques and enlarging its scope to cover all its activities, so as to come out with flying colors.

### Types of Risk

As per the RBI guidelines issued in October' 1999, there are three major types of risks encountered by the banks and these are Credit Risk, Market risk and Operational Risk. In August 2001, a discussion paper on move towards risk-based supervision was published.

#### Various types of risk are as follows:

- Credit Risk
- Market Risk
  - Interest Rate Risk
  - Equity Price Risk
  - Forex Risk
  - Commodity price Risk
- Liquidity Risk
- Strategy and Business Environment Risk
- Operational risk
  - Legal risk
  - Reputation Risk
  - Technology Risk
  - Earnings Risk
- Internal Control Risk
- Organization Risk
- Management Risk
- Compliance Risk

Following is the brief explanation of above listed risks categories:

1. **Credit Risk:** Credit risks are those represents the major faced by banks on account of the nature of their business activities which includes dealings with or lending to a corporate, individual, another bank, financial institutions or a country. Credit risk includes counterparty risk and portfolio risk. Counterparty risk may be defined as the possibility that a borrower or a counterparty will fail to meet its obligation in accordance with agreed terms. Portfolio Risk arises due to adverse credit distribution, credit concentration/ investment concentration.
2. **Market Risk:** It is defined as the potential erosion in income or market value of an asset arising due to changes in market variables such as interest rate, foreign exchange rate, equity prices and commodity prices.
  - Interest rate risk:** The risk in the erosion of earnings due to variation in interest rates within a given time zone.
  - Forex risk:** When a bank is holding foreign exchange assets or liabilities that have not been hedged against movement in exchange rates.
  - Equity price risk:** The risk arises from the potential of an institution suffer losses on its exposure to capital markets, from adverse movement in price of equity.
  - Commodity price risk:** The risk arises from the potential of adverse movements in prices of physical products, which are or can be traded in secondary market. This product includes agriculture products, minerals and oils precious metals.
3. **Liquidity Risk:** It is possible that a bank may be unable to meet its liabilities as they become due for payment or may be able to fund the liabilities at a cost much higher than normal cost. Risk arises due to mismatch in the timings of inflows and outflows of funds and from funding of long term assets by short-term liabilities.
4. **Strategy and Business Environment Risk:** This risk arises out of inappropriate or non-viable business strategy adopted by the banks and the business environment that banks operate, including the business cycle that the economy may be passing through. While the business environment / cyclical risk generally reflected in macro indicators and

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the regulatory environment is uniform for all banks, its impact on banks may differ on the basis of their financial strength and other non-financial parameters.

5. **Operational Risk:** It arises out of inadequate or internal processes, people process risk, operational control risk and model risk.

**Legal Risk:** It arises due to the possibility of actions of a bank not being in conformity with the terms of a country or being in violation thereof.

**Reputation Risk:** potential of suffering losses due to significant negative public opinion, bad or wrong publicity. It could arise either from bank's own failure to perform due to the actions of a third party.

**Technology Risk:** It arises due to IT related factors like validity of IT systems, Backup and disaster recovery system, failure of systems, security systems, programming errors etc. It can also arise due to the obsolescence of technology being used etc.

**Earning Risk:** Though earnings of a bank do not represent risk per se, on account of the fact that the various activities undertaken by a bank and the associated risks can significantly impact the quality and potential of earnings of a bank, it has been included under business risk for the purpose profiling of banks under risk based supervision.

6. **Internal Control Risk:** The risk arises on account of failure of the internal control system of a bank. Weakness in internal controls has been historically recognized as a high risk factor.

7. **Organizational Risk:** IT arises on account of organizational bottlenecks in the form of inadequate or inappropriate structure in relation to its business and the quality of its external and internal relationships. The organization culture needs to be clear and in tune with the legal and business requirements of the bank. Inappropriate relationships within the organization and outside the organization can pose a risk to the operations of the bank.

8. **Management Risk:** It arises due to poor quality and lack of integrity of management. It is reflected in quality of senior management personnel, their leadership, competence, integrity and their effectiveness in stargazing, delivering and dealing with problems.

9. **Compliance Risk:** It arises due to non-compliance with the requirements on account of authorization, statutory requirements, prudential requirements operations etc.

So these are various types of risks faced by Banking Sector all over the world. These risks are inherent in every kind of banking activity, which a bank undertakes as a result of its operations.

There are some tools to measure the degree of risk involved in banking operations. These are the means to quantify the level of risk so that further Risk Management technique may be applied to it so as to hedge the position of a bank.

### **Conventional Quantifiers of Risk**

Most conventional type of risk quantifiers are:

1. **Tracking Errors:** It is an important, practical aspect of both passive index and active management. It provides a good idea of the volatility of derivations from the benchmark. It doesn't take into account the concept of time. As with some other quantitative risk estimators, it typically involves normal distribution assumptions, which are far from financial market reality. In view of these facts, it would appear that tracking error does not fully address what can happen if one makes a bet, which turns out to be ill-chosen.

2. **VaR (Value at risk):** This is one of the most sought after technique of risk management. It is defined as the maximum loss over a specified period, where the period or time horizon depends strongly on the application involved. Due to the nature of financial markets, this maximum loss can never be estimated with complete assurance and each statement of VaR is accompanied by the level of confidence within which it can be assumed

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to be correct. In practice, typically quoted ranges of confidence vary between 90 to 99%. It should be noted however, that VaR doesn't give an idea of the worst-case scenarios. In the word of Nobel Laureate, Myron Scholes: *"Planning for crisis is more important for the VaR analysis. Due to lack of understanding of future crisis, it is common practice to begin by avoiding the mistakes of the past through a process known as 'stress testing'.*

**3. Stress Testing:** Stress Tests are designed to estimate potential economic losses in abnormal markets. Although the discipline of risk management has improved considerably, classical events like natural disasters, wars and political coups still lying beyond statistical forecasting, therefore, regular stress testing is increasingly viewed as indispensable by risk managers and regulators. Stress Testing combined with VaR gives a more comprehensive picture of risk. This sentiment is echoed throughout the risk. Stress Testing attempts to protect against extreme shocks in individual risk factors, as well as group of risk factors. The goal of this exercise to capture and gauge the effects of more extreme moves, the so-called "tail exposures". In view of these points, the risk budgeter might take the step of checking the portfolio being considered with a number of stress test scenarios. The objective is to avoid the mistakes of past, but also to avoid future unforeseen events may have an impact on markets which are correlated with the impact of past dramatic market events.

**4. Duration gap Analysis:** Matching the duration of assets and liabilities, instead of matching the maturity of re-price dates is the most effective way to protect the economic values of banks from exposure to IRR than the simple gap model. Duration gap model focuses on managing economic value of banks by recognizing the change in the market value of assets, liabilities and off-balance sheet (OBS) items. When weighted assets and liabilities and OBS duration are matched, market interest rate movements would have

almost same impact on assets, liabilities and OBS, thereby protecting the bank's total equity or net worth.

Thus, the Duration Gap shows the impact of the movements in market interest rates on the MVE through influencing the market value of assets, liabilities and off Balance Sheet Items (OBS). The attraction of duration gap analysis is that it provides a comprehensive measure of IRR for the total portfolio. The duration analysis also recognizes the time value of money. Duration measure is additive so that banks can match total assets and liabilities rather than matching individual accounts. However, Duration Gap analysis assumes parallel shifts in yield curve, for this reason; it fails to recognize basic risk.

**Fund Transfer Pricing:** The transfer pricing mechanism being followed by many banks does not support good ALM system. Many international banks which have many products and operate in various geographic markets have been using internal Fund Transfer Pricing. FTP is an internal measurement designed to assess the financial impact of uses and sources of funds and evaluate the profitability. It can also be used to isolate the returns for various risks assumed in the intermediation process. FTP also helps correctly identify the cost of the opportunity value of funds. Although banks have adopted various FTP techniques and frameworks, Matched Fund Pricing (MFP) is the most efficient technique. Most of the international banks used MFP. The FTP envisages assignment of specific assets and liabilities to various functional units (profit centers)—lending, investment, deposit taking and fund management. Each unit attracts sources and uses of funds. The lending, investment and deposit taking profit centers sell their liabilities to and buys funds for financing their assets from the fund management profit centre at appropriate transfer prices. The transfer prices are fixed on the basis of a single curve (MIBOR or derived cash curve etc) so that the assets — liability transactions of identical attributes are assigned identical transfer prices. Transfer prices could, however, vary according to maturity, purpose, terms and other attributes. The FTP provides for allocation of margin (franchise and credit spreads)

to profits centers on original transfer rates and any residual spread (mismatched spread) is credited to the funds management profit centre. This spread is the result of accumulated mismatches. The margins of various profit centers.

words, it helps companies optimize the balance sheet risk retention and risk transfer. Also it provides a measurement that is not really achievable by any other means.

**Latest Developments in the Field of Risk Management**

**1. Cash-flow-at-risk (C – far) :**

Now a day there is emergence of a new quantifier of risk in the field of Risk Management known as C- far which is known as Cash-flow-at-risk. This model is designed by a group of economists as an innovative method of measuring, with a high degree of probability, the risk of cash flow stocks for non-financial companies.

In simple terms, C- far can be defined as the probability distribution of a company’s operating cash flows over some time horizon in the future, which is conditional on information that is available today. This innovative approach tries to overcome the shortcomings of the value at risk approach of risk measurement. It follows a “Top Down Approach” because it takes into account aggregate risk exposure while VaR follows “Bottom up Approach” to quantify the risk exposure of individual financial assets.

So we see that C-far provides a valuable foundation for adopting an enterprise wide approach to risk management. A growing number of companies have recognized this value. It permits enterprise-wide risk retentions to be set at levels that not only guard risk against risk aggregation, but also entertain the fact risks may sometimes offset one another. In other

**1. BASEL’S New Capital Accord : Basel II**

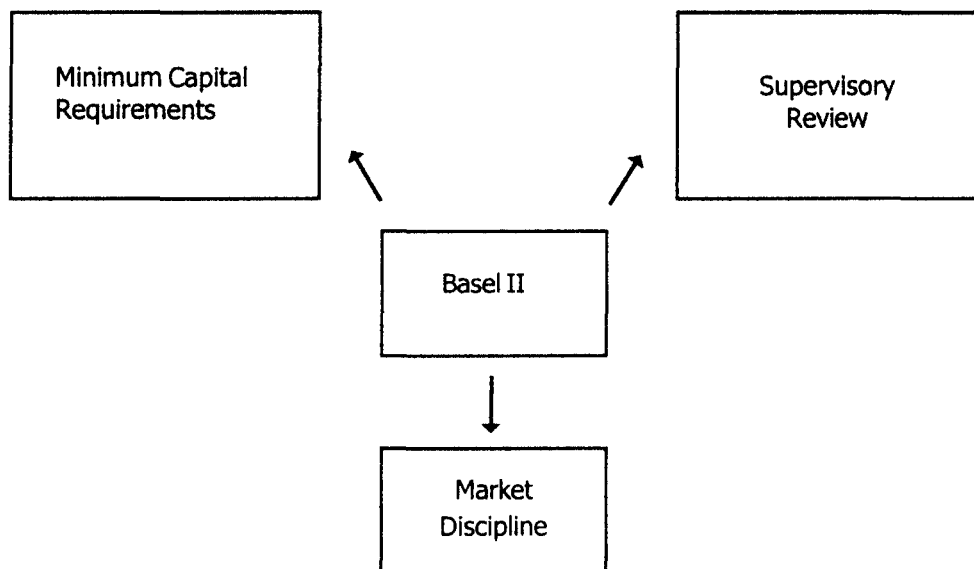
Another new development in the field of Risk Management is introduction of New Accord known as “**Basel II Capital Accord**” The Basel Committee on Banking Supervision (BCBS) is a committee of banking supervisory authorities of G-10 countries and has been developing standards and establishment of a framework for bank supervision towards strengthening financial stability through out the world. The Capital Accord implemented by the financial year 2003-04 provides spectrum of approaches for the measurement of credit, market and operational risks to determine the capital required. While Basel standards currently require banks to have a capital adequacy ratio of 8% with Tier-I not less than 4%, RBI has mandated the banks to maintain CAR of 9%. Tier-I capital is known as the core capital providing permanent and readily available support to the bank to meet the unexpected changes. In the recent past, the government provides capital in good measure mainly to weaker banks. In doing so, the government was not acting as a prudent investor as return on such capital was never a consideration. Further, capital infusion is not the result in any cash flow to the receiver, as all the capital was required to be reinvested in government securities yielding low interest. Receipt of capital was just a book entry with the only advantage of interest income from the securities.

The main difference between the existing accord and the new ones are summarized below:-

<b>Existing Accord</b>	<b>New Accord</b>
1. Focus on single risk measure	1. More emphasis on Bank’s own internal methodology
2. One size fits all	2. Flexibility, incentive for better risk management
3. Broad-brush structure	3. More risk sensitive

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The **structure of New Accord-II** consists of three pillars approach a given below:-



Basel II accord has recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision. The purpose of Basel II, is to create an international standard that banking regulators can guide banks to guard against the types of financial and operational risks banks face if and when international financial system undergoes a major bank or a series of banks collapse. In practice, Basel II attempts to ensure that a bank holds capital reserves appropriate to the risk the bank exposes itself to through its lending and investment practices. Generally speaking, these rules mean that the greater risk to which the bank is exposed, the greater the amount of capital the bank needs to hold to safeguard its solvency and overall economic stability.

### **The Accord in operation**

Basel II uses a "three pillars" concept – (1) minimum capital requirements (addressing risk), (2) supervisory review and (3) market discipline – to promote greater stability in the financial system.

### **The first pillar**

The first pillar deals with maintenance of regulatory capital calculated for three major components of risk that a bank faces: credit risk, operational risk and

market risk. Other risks are not considered fully quantifiable at this stage.

The credit risk component can be calculated in three different ways of varying degree of sophistication, namely standardized approach, Foundation IRB and Advanced IRB. IRB stands for "Internal Rating-Based Approach".

For operational risk, there are three different approaches - basic indicator approach or BIA, standardized approach or STA, and advanced measurement approach or AMA.

For market risk the preferred approach is VaR (value at risk).

### **The second pillar**

The second pillar deals with the regulatory response to the first pillar, giving regulators much improved 'tools' over those available to them under Basel I. It also provides a framework for dealing with all the other risks a bank may face, such as systemic risk, pension risk, concentration risk, strategic risk, reputation risk, liquidity risk and legal risk, which the accord combines under the title of residual risk.

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## The third pillar

The third pillar greatly increases the disclosures that the bank must make. This is designed to allow the market to have a better picture of the overall risk position of the bank and to allow the counterparties of the bank to price and deal appropriately.

The final version aims at:

1. Ensuring that capital allocation is more risk sensitive;
2. Separating operational risk from credit risk, and quantifying both;
3. Attempting to align economic and regulatory capital more closely to reduce the scope for regulatory arbitrage.

While the final accord has largely addressed the regulatory arbitrage issue, there are still areas where regulatory capital requirements will diverge from the economic. Basel II has largely left unchanged the question of how to actually define bank capital, which diverges from accounting equity in important respects. The Basel I definition, as modified up to the present, remains in place.

## Conclusion

Risk management is an undoubtedly a flourishing field in banking in India. After they have realized that LPG (Liberalization, Privatization and Globalization) has not only served multiple opportunities but problems in various aspects particularly in the area of Risk Management, the concern for Risk Management in Banks gained momentum. After the guidelines prescribed in Basel I Accord in 1988, which laid much stress on capital adequacy norms (prescribed capital adequacy was 8%), an improved version in the form of Basel II Accord finally arrived laying batter and much needed stress on market risk as well. It revised capital adequacy ratio to 9% and also suggested scientific measurement and management of various other risks as well which were earlier not consider in Basel I Capital Accord.

Implementation of Basel II is likely to improve the risk management systems of banks as the banks aims for adequate capitalisation to meet the underlying

credit risks and strengthen the overall financial system of the country. In India, over the short term, commercial banks may need to augment their regulatory capitalisation levels in order to comply with Basel II. However, over the long term, they would derive benefits from improved operational and credit risk management practices.

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