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Capital Markets

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Risk Measurement and Management – Do we need a new beginning?

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This viewpoint examines the present-day understanding of credit risk management and evaluates current methodologies. The author investigates their relevance to the contemporary market scenario and notes the gap between what constitutes operational risk and a market risk. A close look at the current definitions reveals that a new wholesome approach to measuring risk must take into account unknown risks as well as legitimate business practices.

Credit risk is defined as the potential that a bank borrower or counterparty will fail to meet its obligations in accordance with agreed terms. The goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. This is the straight forward and simple definition which provided the frame work for risk management policies and procedures within banking organizations. There is also operational risk, which is defined as 'the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems, or from external events'. In addition the Basel accord made scientific effort to define the way in which provisions should be made or handled for the market risk which arises due to legitimate business operations of the bank.

At the outset, all seems to suggest the way in which a model should be built to arrive at required safety capital in the form of tier one and two. No doubt the committee approach was far more superior to its own assessment at the Basel one level and created a robust mechanism to assess the bank's financial health covering business, operations and market risk dimensions. It is believed that compared to the current scenario these approaches would have helped banks to not only improve the bottom line on the balance sheet but to also improve the way the business is done. It would help the banks to organize their internal systems, people, and processes to ensure that their business is not jeopardized due to failures in operational or credit risk monitoring practices.

As stated earlier, operation risk management has been an important aspect of bank management prescribed by the Accord. The committee approach for the Loss Distribution suggested that the bank estimate for each business line/risk type the probability distribution functions of the single event impacting the business for the next (one) year based on its internal data to compute the probability distribution function of the cumulative operational loss. This approach had two important intentions of helping the bank management mitigate any risk of unexpected as well as expected losses which has an impact on the capital structure.

Though Basel II accord prescribed how banks should approach the risk and develop a mitigation framework, the industry is not clear as to how much proactive thinking has gone to develop enterprise wide operational risk framework at the banks' operational level. Recent debacles, including US home lending and sub prime crises, indicate that there is a missing link between instrument pricing, valuation, and business priorities. The missing link between the definition of what constitutes an operational risk and what constitutes a market risk is one of the key reasons for today's financial problems.

Unwinding incidents and continued sub-prime loss event hitting the balance sheet on every new batch run of mark to market calculations, indicate that banks have not achieved significant improvement in their processes to integrate their risk definition (both credit, markets and operational risk), data collection exercises (enterprise wide border and cross border), risk assessment & management (balance sheet as well as off balance sheet) in addition to capital allocation, and governance mechanisms.

With business being good and growth being propelled through the derivative desk, often these processes which existed on paper did not translate into operations. My view is that the single largest reason for this is the lack of definition clarity in addition to the investment made in building middle and back office systems to create synchronized MIS reports cutting across the businesses and product lines.

In addition, qualitative nature of the banks' approach to manage the operational risk did not lead itself to meaningful information. Since definition of 'operations' failure covered unscrupulous activities by individuals or groups of individuals and failure to adhere to the norms prescribed for the businesses, it did not help to unearth the potential risk introduced through the pricing of instruments which did not have robust reference markets.

The following table describes a key model used by the markets to monitor their credit risk:

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Corp Borrowers	Middle market borrowers	Private borrowers	Small business	Commercial real estate	Residential real estate	Consumer
Publicly traded, extensive disclosure	Publicly traded. Moderate disclosure	No public debt Privately held, lack of info	Un-audited financial statement	Approval based on cash flow	Approval based on cash flow	No Financial statement, fewer info, reliance on credit bureau
Low monitoring (annual cycle)	Greater emphasis on mgt.	Reliance on financial statement Close monitoring	Information problem Close monitoring	Moderate monitoring	Moderate monitoring	Reliance on collateral (consumer durables)
Potential for higher use of credit scoring models because of better data	Low use of credit scoring model	Reliance on collateral and covenants Limited use of credit scoring model	Reliance on collateral and covenants Limited use of credit scoring model	Reliance on collateral Limited use of credit scoring model	Reliance on collateral Limited use of credit scoring model	Heavy use of credit scoring model

Table-1 Model used to monitor credit risk

As detailed in the table, banks often relied on the information which is made available through known sources or the documents made available to them. In addition following table describes key definition of various risks.

The following table describes a key model used by the markets to monitor their credit risk:

Risk	Frequency	Severity
Internal Fraud	Low	
External Fraud	High/Medium	
Counter parties/products and business	Medium	
Employment Practice and workplace safety	Low	
Damage to physical asset	Low	
Business disruption and system failure	Low	
Execution, delivery and process management	High	

High Medium Low

Table 2 Risk types and severity

It is interesting to note that though counter parties/products and business are classified as a risk type, severity wise it is to a large extent defined as medium. It is also true that this approach did not take any note of sophisticated financial instruments and products which do not have robust reference markets from pricing perspective and certainly did not take underlying cash flows of products into account. This is the single largest reason why banks are unable to understand the contamination effect of bad loans and good advances.

Though these models and criteria helped the bank to mitigate the credit risk to an extent, it is evident that this did not suffice to identify the risk raised through the new products development such as credit derivatives. From the perspective of the risk managers and practitioner, it is important to develop different ways of measuring both expected and unexpected losses. Following two approaches can be added into the well laid foundation of Basel II.

1. Measuring the instrument and deal pricing: It is important to measure the unknown risk which rises through the policies and procedure followed to price a deal or instruments. Clear understanding about the products and underlying cash flow on which the product is designed and developed needs to be looked at in detail. If the two co-related cash flows is the base for the products, which depended on rating obtained from the rating bureaus, exposure limit or higher risk measurement needs to be placed on such instruments and deals.

2. Operational risk measurement needs to take legitimate business practices into account. Consistent methodology, processes, and procedures needs to be developed to price a deal or instruments. In addition, concentration of asset classes and its impact needs to be taken into consideration for the risk assessment model.

These two approaches are simple in nature to understand and implement but can help risk managers to better prepare themselves to handle unexpected loss events when they occur.

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