Risk mitigation

Q 8-03. How is market risk managed?

Market risk is generally managed quantitatively through reliance on data and on the tools available to analyze data. Market risk affects private borrowers and debt buyers as well as sovereign borrowers. The many applications of managing this source of risk make these tools among the most common in use.

Q 8-03.01. What are the elements of market risk?

Market risk arises from normal operations in the interest rate and foreign exchange markets that lead to changes in prices, interest rates, or exchange rates. There are several sources of risk associated with market risk.

- Marketability - The risk that securities cannot be readily sold at a reasonable price, even if not their full face value, because of discontinuities in the marketplace or that the market for those particular instruments is too thin.
- Interest Rate - The risk that debt service costs will increase as a result of adverse price movements in financial markets.
- Currency - An adverse change in the exchange rate that increases the debt servicing requirements of a loan denominated in foreign currency.
- Liquidity – Securities may not be readily converted to cash for their full face value independent of maturity or currency denomination.
- Instrument - The risk that an option embedded in a complex security will produce costs in excess of those anticipated at the time the option was created.

Q 8-03.02. How should data models be used in market risk management?

Market risk models assume that there is logic in economic processes and that market events follow a cause and effect chain. This is not to assert that it is possible to know with certainty what the nature of the process is or that only one model will fit the data. It does suggest that intelligently designed models may provide more accurate predictions of market events than would chance devices as forecasts.

The model is an abstraction and a suggestion as to how the process functions. As such, its output should not be confused with an ascertained truth. Model-based forecasts and decisions based upon them should be treated with all due caution. Particular attention should be given to those results that depend upon stochastic impacts. The assumptions about the underlying probability distribution that drives the impacts should be critically examined.

Q 8-03.03. How is operational risk managed?

Because operational risk often arises from a flawed organizational form, its risk is mitigated by reform of informational and administrative reform. These reforms provide for the appropriate separation of duties and uses well-defined procedures for accurate and timely accounting.

A common separation-of-duties layout separates those functions that evaluate performance from the unit responsible for the transaction. Accounting and transactions processing should be segregated from the personnel responsible for generating transactions. The internal audit function should report directly to senior management. Policy and risk management should be independent from the transactions group, and authority should be commensurate with responsibility throughout the organization.

Q 8-03.04. What are the elements of operational risk?

There are three broad categories of operational risk.

- Controls - risk that arises from administrative processes in debt issuance, trading, accounting and redemption operations.
- Technical - inadequate internal controls in debt management operations that allow embezzlement, fraudulent transfer, or other loss to occur undetected or with ease.
- Settlement - failure of a business partner to settle on agreed terms for reasons other than the partner's credit deterioration.

Q 8-03.05. What information problems lead to operational risk?

One principal area in which operational risk may arise is the flow of information.

- There may be no flow at all, as when information is created by or provided to the organization, but it is not transmitted to the user.
- Information may also flow in circuitous pathways. This can result from office reorganizations that failed to consider information flows. When the pathways are not direct, the delays in decision-critical information can render it valueless.
- Information may be misdirected and never reach the user.
- Information may be distorted to meet particular viewpoints. Reports should reflect data gathered from the real world, analyzed by objective professionals.

Q 8-03.06. What management problems lead to operational risk?

The structure of management and chains of authority in organizations can also engender operational risk.

- Reporting relationships may be too deep for effective operations. If management positions multiply for reasons other than operational need, managers may find themselves too far from frontline workers with consequent delays in critical information flows.
- Offices within the organization may balk at sharing information or acknowledging authorities or responsibilities given to other offices. Since complex tasks require complex organizations, overall efficiency suffers.
- Offices may refuse to cooperate without some *quid pro quo*.
- Offices with evaluation or audit authority may report to the operational offices they are intended to control. The ability to serve as a safety valve for the organization is severely compromised in these cases.
- Crisis management may become the norm with daily operations requiring the intervention of senior managers. This situation leads to failure at all levels of the organization as senior officials are distracted from long-range management and lower level workers learn to depend on increased instruction for carrying out their work.

Q 8-03.07. What personnel problems lead to operational risk?

Personnel problems are dangerous because they lead to long-term weakness in the organization that impedes its ability to act efficiently. Either too many or too few staff or staff not engaged in the work can foster costly errors.

- Static or unchanging organizations may not evolve to match changes in the markets, particularly in financial engineering. The personnel needs and skills of the organization should change as needed.
- Personnel may be held accountable for performance of a task without being given the authority to complete it.
- There may be excess staff with consequent demoralization of the underutilized people.
- There may be lack of career progression which, in the long run, weakening the ability to recruit ambitious, motivated staff. The decline of alert staff leads to sloppy work.