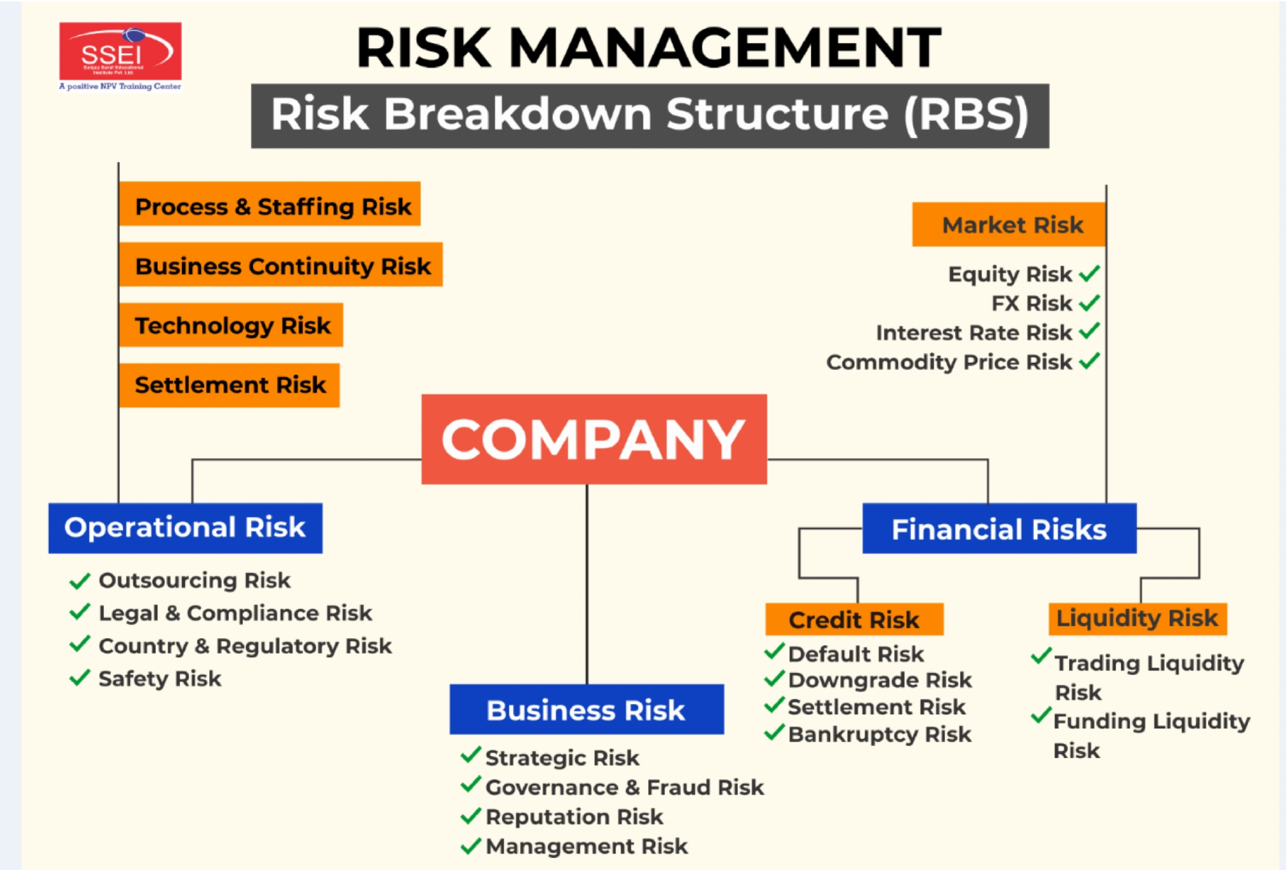
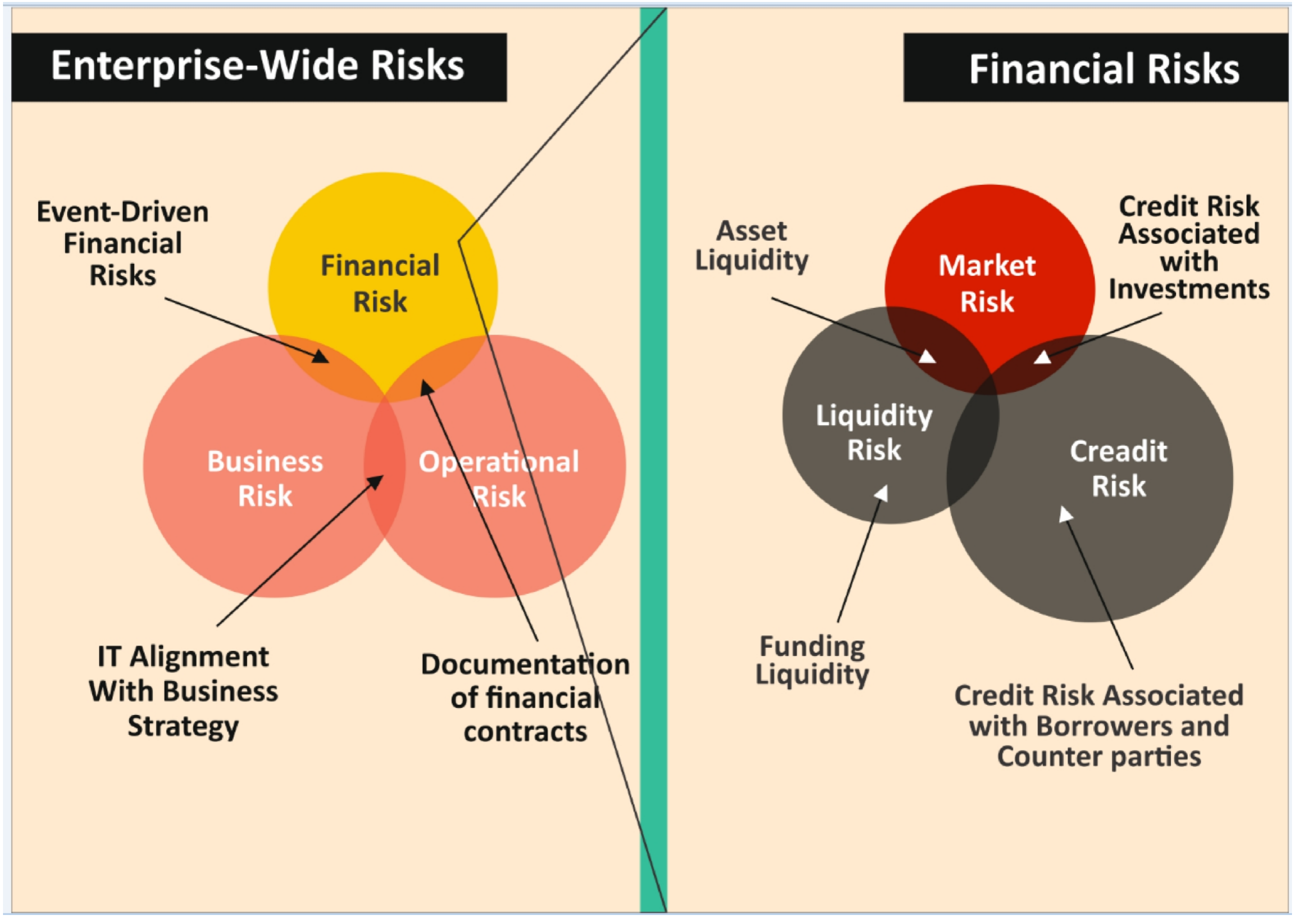
Lecture Notes 3

RISK MANAGEMENT




Enterprise-Wide Risks
Event-Driven Financial Risks
Financial Risk
Business Risk
Operational Risk
IT Alignment With Business Strategy
Documentation of financial contracts
Financial Risks
Asset Liquidity
Market Risk
Credit Risk Associated with Investments
Liquidity Risk
Creadit Risk
Funding Liquidity
Credit Risk Associated with Borrowers and Counter parties

Question 1

McNulty is the risk manager for a large multinational agricultural concern, Agripure. The company grows its own corn, wheat, and soybeans but pays large sums to third parties for pesticides, fertilizer, and other supplies. For this, it must borrow heavily to finance its purchases. Customers typically purchase Agripure's goods on credit. Moreover, Agripure buys and sells its products and raw materials worldwide, often transacting in the domestic currency of its customers and suppliers. Finally, to finance its own expansion, Agripure intends to issue stock.

Recommend and justify the risk exposures that McNulty should report as part of an enterprise risk management system for Agripure.

Answer :

McNulty should report on the following risk exposures:

- **Market risk**, including these subtypes:
  - **Commodity price risk**, because Agripure has exposures in raw materials and finished products.
  - **Foreign exchange risk**, because it buys and sells products world-wide, often transacting in the home currency of the entity on the other side of the transaction.
  - **Equity market risk**, because Agripure's expansion financing is affected by the price it receives for its share issuance.
  - **Interest rate risk**, because Agripure has exposures in financing its raw material purchases and because its customers typically purchase their goods on credit.
- **Credit risk**, because Agripure's customers typically purchase their goods on credit.
- **Operational risk**, because as an agricultural producer Agripure is subject to weather-related risk (an external event).

Question 2

Stewart Gilchrist, an Equity Research Analyst, follows the automotive industry, including Ford Motor Company. Based on Ford's 2003 annual report, Gilchrist writes the following summary:

Ford Motor Company has businesses in several countries around the world. Ford frequently has expenditures and receipts denominated in non-US currencies, including purchases and sales of finished vehicles and production parts, subsidiary dividends, investments in non-US operations, etc. Ford uses a variety of commodities in the production of motor vehicles, such as non-ferrous metals, precious metals, ferrous alloys, energy, and plastics/resins. Ford typically purchases these commodities from outside suppliers. To finance its operations, Ford uses a variety of funding sources, such as commercial paper, term debt, and lines of credit from major commercial banks. The company invests any surplus cash in securities of various types and maturities, the value of which are subject to fluctuations in interest rates. Ford has a credit division, which provides financing to customers wanting to purchase Ford's vehicles on credit. Overall, Ford faces several risks. To manage some of its risks, Ford invests in fixed-income instruments and derivative contracts. Some of these investments do not rely on a clearing house and instead effect settlement through the execution of bilateral agreements.

Based on the above discussion, recommend and justify the risk exposures that should be reported as part of an Enterprise Risk Management System for Ford Motor Company.

Answer :

The following risk exposures should be reported as part of an Enterprise Risk Management System for Ford Motor Company:

1. Market risks

- **Currency risk (Foreign Exchange Risk)**, because expenditures and receipts denominated in non-domestic currencies create exposure to changes in exchange rates.

- **Interest rate risk**, because the values of securities that Ford has invested in are subject to changes in interest rates. Also, Ford has borrowings and loans, which could be affected by interest rate changes.
- **Commodity risk**, because Ford has exposure in various commodities and finished products.

2. **Credit risk**, because of financing provided to customers who have purchased Ford's vehicles on credit.
3. **Liquidity risk** (More specifically, Funding Liquidity Risk), because of the possibility that Ford's funding sources may be reduced or become unavailable and Ford may then have to sell its securities at a short notice with a significant concession in price.
4. **Settlement risk**, because of Ford's investments in fixed-income instruments and derivative contracts, some of which effect settlement through the execution of bilateral agreements and involve the possibility of default by the counterparty.
5. **Country risk (Political Risk)**, because Ford has operations in several countries. This exposes it to political risk. For example, the adoption of a restrictive policy by a non-US government regarding payment of dividends by a subsidiary in that country to the parent company could adversely affect Ford.

Note – Apart from the above risks, which are identifiable in the write-up, every firm including Ford faces Strategic Risk, Operational Risk, Governance Risk and Reputation Risk. Note that Operational Risk covers Technology Risk (IT, Security, Cyber, etc.), Outsourcing Risk, Business Continuity Risk, Legal risk, Compliance and Regulatory Risk, Safety Risks, Process Risks, Staffing Risk ,etc.

Question 3

List and describe three types of financial risk, and offer mitigating strategies.

Answer :

Financial risks:

- **Market risk**: Factors that directly affect firm or portfolio values (e.g., interest rates, exchange rates, equity prices, commodity prices, etc.).

  Mitigation *– This will typically include the use of financial and credit derivatives including options, futures and/or forward contracts, futures options, and swaps.*

- **Liquidity risk**: **It is of two types –**

  Market Liquidity Risk -The possibility of sustaining significant losses due to the inability to take or liquidate a position quickly at a fair price.

  Mitigation *– Hold liquid positions and do not take concentrated exposures.*

  Funding Liquidity Risk – Risk of Cashflow inadequacy.

  Mitigation *–Maintain sufficient primary and secondary sources of liquidity.*

- **Credit risk**: Risk of loss arising from outright default of a counterparty. ***Mitigation*** *- This risk can be mitigated through the use of derivative products, such as credit default options.*

Question 4

Consider an Investment firm with a Prop. Trading Department. While reading and entering return data into a performance evaluation model, the programmer transposed the number 0.10 to 0.01. As a result, the average return and maximum drawdown for the period were calculated incorrectly for that manager. The mistake was discovered only immediately before paying out bonuses and allocating capital for the coming year. Discuss the failure in the ERM system and possible remedies.

Answer :

This “failure” in the ERM system is part of the operational risk associated with implementing the performance evaluation model (risk-adjusted performance compared to some benchmark), not a problem with the model itself. The first step in reacting to any risk management problem is determining the value of any damage and whether the problem is transient or permanent. In this case, the occurrence in question is not permanent in nature, and any monetary damage can be quickly and easily rectified. The likelihood of a similar occurrence in the futureis high, however, so management should be sure a process is in place to help reduce the likelihood of future incorrect data entries.

Question 5

As risk manager for ABC Enterprises, J.Q. Smith is assessing the firm's various risk exposures to include in a regular semiannual report to upper management. ABC is a medium-size import/export firm located in Charleston, South Carolina. Its primary sources for imports, which it sells in the United States, are located in China and Mexico. It has customers throughout the world, but more than half of its exports go to the Eurozone. ABC customarily borrows to cover funds tied up in exports. Discuss risk exposures Smith should report.

Answer :

In determining the risks to report, the credit manager should consider **market, credit, liquidity, Strategic, operational, settlement, regulatory, legal and country risks.**

- **Market risk** pertains to interest rates, exchange rates, and stock and commodity prices. The manager should report ABC's exposures to interest rates (because it borrows to cover short-term cash needs) and exchange rates (because of exposures to international foreign currencies).
- The manager should report exposure to **credit risk** because the firm's customers no doubt buy on credit.
- **Liquidity risk**, which pertains to the ability to buy/sell securities quickly at a fair price, is probably not a concern for ABC, unless it utilizes forward contracts on foreign currencies.
- **Strategic Risk**, which arise from the fundamental decisions that directors and Senior Management take concerning an organization's objectives. Essentially, strategic risks are the risks of failing to achieve these business objectives
- The firm will face **operational risk** to the extent that its business activities are sensitive to operational difficulties (e.g., interruptions in the transportation of products).
- **Settlement risk** applies to transactions that include payments due to and receipts due from counterparties. There is not enough information to make a determination on whether the firm faces settlement risk.

- They are exposed to **Regulatory Risk** in that foreign countries can change regulations on imports and exports.
- **Legal risk** pertains to the enforcement of contracts. Different international laws can make enforcement of contracts somewhat challenging if a foreign counterparty disputes the terms of a contract.
- **Country risks** pertain to changing political climate. Even if the firm faces little domestic political risk, it is definitely exposed to the risks associated with the political climate of its trading partners.