Department of Applied Economics & Commerce, P.U.

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Subject : Financial Derivatives

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Unit IV - Market Risk Management

The process of market risk managent has four parts:

1. Risk Identification
2. Risk Measurement
3. Risk Monitoring & Control
4. Risk Mitigation

1. Risk Identification: It means the risk awareness to which the organization may be exposed.

Market Risk:

- **Market Risk** is the risk of adverse deviation in the market value of investments, financial instruments or trading portfolio.
- It arises due to market movements like changes in yield or interest rate.
- It is faced during the period required to liquidate the transactions. If it gets longer, so do the deviations from the current market value.

  The Bank for International Settlement (BIS) defines market risk as the "the risk that the value of on- or off- balance sheet positions will be adversely affected by movements in equity & interest rate markets, currency exchange rates & commodity prices."

Types of Market Risk

On the basis of sources of loss, market risk may be categorized into:

1) **Currency Risk-** It arises from potential movements in the value of foreign currencies. This includes currency – specific volatility, correlations across currencies & devaluation risks. Currency Risk arises in the following environment:

    i. **In a pure currency float**, the external value of a currency is free to move, to depreciate or appreciate, as pushed by market forces. Example: The Dollar/Euro exchange rate.

    ii. **In a fixed currency system**, a currency's external value is fixed (or pegged) to another currency. Example: The Hong Kong Dollar which is fixed against the U.S. Dollar. This does not mean that there is no risk, however, due to possible readjustments in the parity value, called *devaluation*s or *revaluations*.

    iii. **In a change in currency regime,** a currency that was previously fixed becomes flexible or vice-versa. Example: The Argentinean peso was fixed against the Dollar until 2001 & floated thereafter.

2) **Fixed - Income Risk -** It arises from potential movements in the level & volatility of bond yields.

    Fixed - Income Risk may be caused due to the following factors:

    i. **Inflationary Expectations -** Any perceived increased in the forecast rate of inflation will make bonds with fixed nominal coupons less attractive, thereby increasing their yield.

    ii. **The Interest Rate -** The real interest rate is defined as the nominal rate minus the rate of inflation over the same period. This is generally positive but may become negative if the Central Bank decides to keep the nominal rates at very low levels in order to stimulate economic activity.

3) **Equity Risk -** It arises from potential movements in the value of stock prices.

Total Risk = Marketwise Risk + Stock-Specific Risk

4) **Commodity Risk -** It arises from potential movements in the value of commodity contracts which include agricultural products, metals & energy products.

   Commodities can be grouped into:

   a) **Precious Metals** like gold, platinum, silver.

   b) **Base metals** like aluminum, copper, nickel, zinc &

   c) **Energy products** like natural gas, crude oil.

      Energy products are more volatile than metals. Energy products are less storable than metals, as a result, are much more affected by variations in demand & supply.