Introduction to Portfolio Management

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Portfolio

• Financial Portfolio
  – A collection of investments held as a group
  – Professional Institutions
  – Asset Management Corporations
  – Individual Investors etc

• Key objective
  – Maximize the returns from the investments for given level of risk

• Portfolio Management Involves
  – Investing and divesting different investments
  – Risk management
  – Monitoring and analyzing returns
Portfolio Valuation

• Performance is measured using
  – Expected Return
  – Risk associated with the return

• Portfolios are valued using different models
  – Markowitz Portfolio Theory
  – Modern Portfolio Theory
  – Capital asset pricing model
  – Arbitrage pricing theory etc
Portfolio Management Key Factors

• Continuous P&L Calculations
• Portfolio may contain different classes of products including derivatives
• Computing the RISK/Exposure is the key
• Incorrect pricing/valuation would expose the Portfolio
• Incorrect Hedging would expose portfolio
• Most Portfolios are rebalanced almost everyday
Factors affect the P&L

- P&L Changes from the RISKs that were unhedged
- P&L Changes from the usage of imperfect Hedging Model
- P&L Changes from new trades during the day
Derivative Product Types & Exposure

• Linear Product
  – Price of the product is directly dependent on the price of the underlying asset
  – Hedge the product and forget

• Non-linear Product
  – Price of the product is not directly dependent on the price of the underlying asset
  – Rebalance the Hedge as frequent as necessary
Risk Management

• Risk
  – The chance that an investment’s actual return will be different than expected
  – Actual return may wipe some or total original investment

• Risk and Reward
  – The greater the amount of risk, the greater the potential return

• Categories of Risk
  – Market Risk
  – Credit or Default Risk
  – Operational Risk
Market Risk

• Market Risk – risk caused by the movements in the market factors like
  – Interest Rates
  – Stock Prices
  – Exchange Rates etc

• Market Risk is usually measured by methodology referred as “Value at Risk” (VaR)

• What is meant by Measuring Risk
  – The probability of adverse circumstance happening
  – The cost of such adverse circumstance
Credit Risk

• Risk of non-payment of interest and/or principal by borrower
• Financial health of the borrower is the key factor
• Lenders measure borrowers financial health using different methods
  – Credit Rating
  – Credit History etc
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Operational Risk

• Risk of loss caused by inadequate or failed internal process, people, system and external events.

• Operational Risk Management
  – External Regulatory Agencies
  – Internal compliance and risk management departments
VaR – Value at Risk

• VaR is used to measure a Market Risk of an Asset or Portfolio of Assets
• It is single number that summarizes the total risk in financial portfolio or asset
• It answers the question
  – How bad things can go wrong?
• For example if VaR of a Portfolio is $2M, at 95% for 1 day
  – 95% sure/confident that in ONE day portfolio cannot lose more than $2M