Review Sheet – Chapters 1, 2, 3, and 5

• Introduction
  – definitions of forward, futures, call option, and put option contracts
  – payout and profit at maturity for the both the buyer and seller of each of the above contracts
  – difference between forward and futures contract
  – long versus short position
  – definitions of hedger, speculator, and arbitraguer.
  – use of long and short hedge

• Futures Contract
  – specification of futures contract
  – marking to market
    * computation
    * margin requirements
    * clearinghouse operations
    * offsetting trades
  – newspaper quotes: settlement price, volume, and open interest
  – normal backwardation
  – exchange operation
  – tax treatment of gains and losses

• Forward Contract
  – delivery price
  – forward price
- profit and payoff

- Continuous Compounding
  - present value
  - future value
  - conversion from discrete to continuous

- Cost of Carry Model for Future and Forward Contracts
  - no income
  - certain income stream
  - continuous dividend (income) yield
  - exchange rate

- Arbitrage Strategy

- When to use a short and long hedge

- Arguments for and against hedging

- Basis
  - Definition
  - Basis Risk
  - Effect on hedge of strengthening and weakening of the basis
  - Choice of contract maturity

- Minimum variance hedge

- Stock index futures
  - Hedge
  - Change beta
• Formulas:

1. \( FV = A(1 + Rm)^{mn} \)
2. \( FV = Ae^{rT} \)
3. \( PV = Ce^{-rT} \)
4. \( r = m \ln(1 + Rm) \)
5. \( F = (S - I)e^{rT} \)
6. \( F = Se^{(r-q)T} \)
7. \( F = Se^{(r-r_f)T} \)
8. Effective Price at time 2 = \( F_1 + \text{Basis}_2 \)
9. \( h = \rho \frac{\sigma_S}{\sigma_F} \)
10. \( N_F = (\beta^* - \beta) \frac{P}{T} \)