HEDGING USING OPTIONS

Objective

This topic covers how options can be used for speculation and hedging a traders risk against fluctuations in price and how it differs from hedging with futures.

Hedgers

- Hedgers are essentially spot market players.

- Hedgers are **interested in reducing price risk** (that they already face in the spot market) with derivative contracts and options.

- Forward contracts are designed to neutralize risk by fixing the price that hedger will pay or receive for the underlying asset.

- Future contracts can be used to undertake minimum variation hedging.

- Option strategy enables the hedger to insure itself against adverse exchange rate movements while still benefiting from favorable movements.

Hedging using Forward Contracts: Issues

- There is no assurance that the outcome with hedging will be better than the outcome without hedging.

- Suppose that it is June 15, 2012, and Import Junction, a company based in the India, knows that it will pay $ 10 million on September 15,2009, for goods it has purchased from a US supplier.

- The USDINR exchange rate quotes made by a financial institution are known.

- Import Junction can hedge its foreign exchange risk by buying DOLLAR(USD) from the financial institution in the three-month forward market at 52.00.

- This would have the effect of fixing the price to be paid to the US exporter at Rs. 52.00.

Hedging using Forward Contracts: Issues

- If the exchange rate is 49 on September 15, it will cost the company Rs . 30 Million
- To avoid this scenario, we could also hedge the risk using options instead of futures

Hedging using Options

- Consider an investor who in May 2009 owns 3,000 Infosys shares

    ➢ The current share price is Rs.2000 per share

- The investor is concerned that the share price may decline sharply in the next two months and wants protection.

- The investor could buy 20 July put option contracts with a strike price of Rs.2000 on NSE.

    ➢ This would give the investor the right to sell 3,000 shares for Rs.2000 per share.

Figures have been assumed

Hedging using Options

- If the quoted option price is Rs.30, each option contract would cost 150 x Rs. 30 = **Rs. 4500**, and the total cost of the hedging strategy would be 20 x RS. 4500 = **Rs. 90,000**

- The strategy costs Rs. 90,000 but **guarantees that the shares can be sold for at least Rs. 2000 per share during the life of the option.**

Figures have been assumed

Hedging using Options

- If the market price of Infosys falls below Rs. 2000, the options can be exercised so that Rs. 60,00,000 is realized for the entire holding.

  ➢ When the cost of the options is taken into account, the amount realized is Rs.59,10,000

- If the market price stays **above Rs. 2000**, the options are not exercised and expire worthless.

- However, in this case the value of the holding is always above 60,00,000 (or above 59,10,000 if the cost of the options is taken into account).

Figures have been assumed

Speculators

- **Speculators** wish to take a position in the market either **by betting** that the price will go up or down.

- Futures and options can be used for speculation

- When a speculator uses **futures** then the potential gain or loss is high.

- When a speculator uses **options**, speculator's loss is limited to the amount paid for the option.

Speculation using Options

- Suppose that it is January and a **speculator considers that share of ICICI bank is likely to increase in value** over the next two months
  - ➢ The stock price is **currently Rs. 800,** and a two-month call option with a Rs. 800 strike price is **currently selling for Rs. 50**
- The speculator is willing to **invest Rs. 40000**
- **It has two alternatives**
  - ➢ The first alternative involves the purchase of 50 shares
  - ➢ The second involves the purchase of 800 call options
- Suppose that the speculator's hunch is correct and the price of **ICICI's shares rises to Rs. 900 by March**

Speculation using Options

- The first alternative of buying the stock yields a profit of 50 x (900 - 800) = 5000

- However, **the second alternative is far more profitable.**

- A call option on ICICI with a strike price of Rs. 800 gives a payoff of Rs. 50

  ➢ The total payoff from the 800 options that are purchased under the second alternative is:

  ➢ **800 x 50 = 40,000**

- The **options** strategy is, therefore, 8 times as profitable as the strategy of buying the stock.

Speculation using Options

- Options also give rise to a greater potential loss
- Suppose the **stock price falls to Rs. 600 by March**
  - ➢ The first alternative of buying stock yields a loss of

    50 x (600-800) = Rs. - 10000
  - ➢ Because the call options expire without being exercised, the options strategy would lead to a loss of Rs. 40000—the original amount paid for the options
  - ➢ Hence the options strategy in this case is 4 times as loss making as the strategy of buying the stock