

SECTION- 3

FORWARD RATE AGREEMENT

This Section includes

- **Forward Rate Agreement**
- **Futures**

3.1. FORWARD RATE AGREEMENT

3.1.1 A Forward Rate Agreement (FRA) is an agreement between two parties which determines the interest rate that will apply to notional loans or deposits on a predetermined date in the future and for a specified period. It does not necessarily involve either a loan or a deposit and is simply an agreement between two parties to compensate each other for the difference between the agreed FRA rate and the relevant market interest rate at the start of the notional transaction. FRAs are quoted in terms of the contract period. For example, 'three against six months' will refer to three-month period starting in three month's time.

3.1.2 Illustration:

A company finds that credit extended to a major customer is longer than that obtained from suppliers. In three month's time, the company will need working capital for a further three months. On 12 February, the BB bank writes an FRA for "three against six months"(or 3 v 6) at 8%. Settlement date is 12th May. Let us compare the difference probable outcomes to explain FRAs.

Situation-1- On 12th May, the three month market rate is 9%

The company borrows at the market rate 9%

BB bank pays the difference between 9% and 8% -1%

The actual rate incurred by the company is 8%

Situation-2-On 12th May, the three month market rate is 7%

The company borrows at the market rate 7%

The company pays BB the difference between 7% and 8%= 1 %

The actual rate incurred by the company is 8%

Essentially, by buying a three against six FRA, the company has agreed to lock in the three month forward interest rate of 8%



- 3.1.3 The point to be noted is that the FRA does not itself involve the borrowing or lending of money, it is merely a contract for a 'difference payment' between the two parties. In the above example, the company actually borrows the required funds from one of its usual sources, but the FRA ensures that the net rate of interest is fixed in advance.
- 3.1.4 Typically, a rate of interest and a market reference rate, usually LIBOR, are specified in the FRA contract.
- 3.1.5 Advantages of FRAs:
- Future interest rate exposure can be hedged without commitment to a specified borrowing or deposit.
 - Transaction can effectively be reversed at any time to the start of the FRA by taking out an equal and opposite FRA known as an offsetting position.
 - FRAs are usually tailored by banks to meet the specific requirements of companies in terms of both dates and amounts

3.2. FUTURES

- 3.2.1 A Forward trade is a contract between two parties, for one to deliver to the other a specified quantity of goods of a specified quality at a specified date in the future and at an agreed price. The goods can be commodities or financial instruments or interest rates, as was explained earlier in the case of forward rate agreements. No money changes hands at the time and buyers pay the agreed price only when they receive the goods. FRA is a type of the over the counter forward trade for short term interest rate products.
- 3.2.2 The above contract is between two counter parties.
- 3.2.3 In the case of futures, the contract is standardized in terms of the size of the contract and the future settlement dates. For interest rate futures contracts the standardized size of one contract is pounds 500000 on the LIFFE and there are only four settlement dates a year. It is not possible to trade in fractions of contracts. Futures contract are not made directly with a counter party, but through a clearing house. Therefore, there is no worry about default of the counter party, as this risk is borne by the clearing house.
- 3.2.4 Both forward and future contracts can be closed any time before the expiry date.
- 3.2.5 Illustration of a future contract

In the middle of April, a speculator believes that there is going to be a worse harvest of wheat than expected this year. October wheat contracts are trading at Rs.300 and the contract size is 5000 tonnes. The speculator buys 10 contracts believing that the price of wheat will rise as October approaches.

Situation-1

By end of September, the harvest was very poor, and the October wheat futures have risen to



Rs 325 as wheat is in scarce supply. The speculator can now book his profit without waiting till October.

Profit per futures contract = $(325 - 300) \times 5000 = 125000$

Profits on 10 futures contract = $125000 \times 10 = 1250000$

Situation-2

There was a better harvest than expected and October future prices have fallen to Rs.290 per tonne. The speculator decides to close out his position now to avoid further losses.

Loss per futures contract = $(290 - 300) \times 5000 = 50000$

Loss for 10 contracts = $10 \times 50000 = 500000$

3.2.6 Standardization makes the market liquid. Future prices act as a signal of the fair market price to all market participants.

3.2.7 One of the important points in the case of futures contract is that settlement is guaranteed by a clearing house. It completely eliminates counter party risks or default risks.

3.2.8 Illustration:

On February 1, a corporate borrower 1 million three month loan from the money market which costs 7% per annum and will be rolled over (i.e. renewed) on 1 May. The borrower wants protection against a rise in interest rates, and considers using two three-month interest rate future contracts of 500000 face value each to hedge his 1 million loan.

- The borrower sells two June futures contracts
- A June futures contract is based on a notional three-month deposit beginning in June
- The futures contracts are priced by subtracting the implied annualized LIBOR interest rate from 100
- The market expectation for June futures contract sold on 1st of Feb is present spot rate of 7%
- The price of the futures contract will be $100 - 7 = 93$
- This means that the market expects no change in the interest rate
- If the interest rate have risen to 8.5% on 1st May when the loan is rolled over, the price of the June futures contract will have fallen to 91.50, $100 - 8.5$.
- The borrower buys an offsetting contract at the lower price.
- In futures contract, the borrower has to reverse the hedge by buying back two June contracts



- If an FRA had been used, it could probably have been arranged to mature on 1st may, the required date
- Futures were used because they were cheaper overall
- Since each futures contract has a 500000 face value, the 1.5% increase in interest rate(150 basis points) results in a gain of:
- $2 \text{ contracts} \times 1.5\% \times 500000 \times (1/4 \text{ of the year}) = 3750$
- When the loan is rolled over on 1st may, the borrower has to pay 8.5% in the cash market, costing $1000000 \times 8.5 \times (1/4) = 21250$ for the three month loan
- The borrower has gained 3750 from the future hedge, so his net interest cost is 17500 which equates to 7%
- The actual buying and selling of futures contract involves payment of margins.
- There is an initial margin on opening the position, followed by a daily variation margin as the position is marked to market
- Marked to market means you close out your position by buying back a contract you have previously sold or by selling a contract you have previously bought
- Through this process, any risk of default and system collapse are averted.