

**SICASA(SOUTHERN INDIA CHARTERED ACCOUNTANTS STUDENTS'
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Seminar on

DERIVATIVES

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In the recent times, we witnessed a whirlwind of financial and economic phenomena like inflation, perception of global food crisis, a global recession, sub-prime crisis etc in the global economic scenario.

The blame for this is attributed at least in part, by many analysts, economists and politicians to 'DERIVATIVES'.

I have selected this topic not because I know much about this, but because I am curious to know about this, and I am anxious to share your views, ideas, information on this subject.

Now what is a Derivative we all are definitely familiar with derivative in mathematics. In which one variable derives its value from another variable.

I learned that similarly financial derivatives are certain financial instruments whose price is determined or derives from one or more underlying assets.

Derivative merely is a contract between two or more parties. Its value is determined by the fluctuations in the underlying assets.

The most common underlying assets are stocks, commodities, currencies, interest rates, market indexes.

For a better understanding of these concepts, let us take a quick look at an example.

Imagine that Backstreet Boys are coming to Kottayam. Each ticket cost Rs.1,000/-. You call up to reserve ticket and find that tickets are fully sold.

But, a friend of yours, who is a part of organizing committee, gives you a reference letter. If you show the letter you can buy 1 ticket by paying its price. Viz. Rs.1,000/-

The letter gives you the right to buy the ticket, but it does not represent the ticket. Now, the letter by itself has no market value. Suppose as the event day draws closer, tickets are being sold in the grey market at Rs.1,250/-. At this point your letter attains value. This is because, you can buy a ticket now available in the market at Rs.1,250/- for Rs.1,000/-. So the letter is now worth Rs.250/-. If a week before the event the price of the ticket in the grey market shoots up to Rs.1,500/-, the value of your letter increases to Rs.500/-. If the price falls below Rs.1,000/- your letter becomes worth less. The value of the letter changes with price of the ticket. It derived its value from the value of ticket.

Derivatives are mainly of 4 types

Forward contract
Swaps

Futures contract

Options

Evolution of the concept

It is interesting to note that these financial products, which later evolved into a complex set of market instruments, began in an agrarian economy.

Before futures market came into existence, farmers after harvesting crops used to bring them to market in the hope of selling their inventory. But without any indication of actual demand, supply often exceeded what was needed and unpurchased crops were left to rot in the streets. , conversely, when a given commodity – wheat for instance – was out of season, the goods made from it became very expensive because the crop was no longer available.

The uncertainties created by the situation were overcome by the invention of the concept of forward contract, which can be considered as the forerunners to today's future contract.

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There are evidences to show that Forward Contract were popular in rice markets in 7th Century Japan.

In US, Chicago was the hub of commercial activities in 1840s. There also forward contract existed in the Board Of Trades, Chicago. This evolved into commodity futures and CME (Chicago Mercantile Exchange) was the most important centre at that time.

This concept was grafted into Forex Trading in 1972 and emulated by other activities like shares, interest rates etc.

Derivatives markets have been in existence in India in some form or other for a long time. In the area of commodities, the Bombay Cotton Trade Association started futures trading in 1875 and, by the early 1900s India had one of the world's largest futures industries.

Now derivative transactions are carried out in India through NSE, BSE, NCDEX, MSE etc...

What is a Forward Contract?

A Forward Contract is an agreement entered today under which one party agrees to buy and the other agrees to sell an asset on a specified future date on an agreed price.

That is if a farmer is able to enter into a contract to sell 100 kg of wheat at Rs10/kg after 2 months, his risk vanishes.

Here the contract is entered today.

But delivery of commodity and payment of money take place only after 2 months. So the farmer's position is safe, he is sure that the wheat he produced will be sold.

Main features of Forward Contract is that:

It is unique i.e. the contract is entered into by 2 people and it is traded OTC (Over The Counter) ie it is not carried out through an organised exchange. Markets where there are no organised exchanges are called OTC markets. This contract is not negotiable i.e. it cannot be sold for cash. So it is not liquid.

Both parties are obliged to perform their part in the contract. But if one fails to perform, the only remedy of the other person is to go to the court. So there is a small chance of default.

Futures Contract

Futures Contract is a much evolved form of Forward Contract, it is negotiable i.e. the contract can be sold in the market i.e. a person can sell his right or obligation. This means that if I entered into a futures contract to sell rice to X I can sell my obligation to sell rice to X to another person. So it is very liquid.

In future contract a commodity exchange comes between the buyer and seller. The contract is entered through the exchange. And this exchange guarantees performance. So there is no chance of default.

In this, each trade is split into 2 parts, buyer with exchange and exchange with seller. Each party has to fulfil their obligation with exchange. Even if one party fails to perform the exchange fulfils the performance.

Because this contract is freely traded through the exchange it is standardized as to every minutest detail in order to avoid any ambiguity in the future.

It is standardized as

- Quantity
- Quality and
- Date and month of delivery

Examples of specification

Because of this actual delivery of goods rarely take place usually profits and losses are settled in cash.

Mark to Market margin – Since clearing house acts as a guarantor, it would require us to maintain a deposit with it and the margin amount changes with change in the price of futures. This margin is called Mark To Market margin.

I will explain all these with an example-

A producer of wheat may be trying to secure a selling price for the next crop while the baker may be trying to secure a buying price to determine how much bread can be made and at what profit after 2 months.

So the Farmer and the baker may enter into a contract through a commodity exchange.

The contract requires delivery of 50,000 kg of wheat @ Rs.20/kg after 2 months..

By entering into this future contract, the Farmer and the baker secure a price that both parties believe is a fair price after 2 months.

In this case both baker and Farmer will have to maintain a margin (deposit of) say Rs.1,00,000/- (ie 10% of Rs.10,00,000) with the exchange.

Say next day after entering into this contract if the price of wheat futures rises to Rs.21/kg. Farmer has lost Rs.50,000/- and the baker has gained Rs.50,000/-. Here exchange will debit farmer and credit baker with Rs.50,000/-. In other words the exchange transfers 50,000Rs from farmers deposit account to bakers deposit account.

If at the expiry date of contract(i.e. after 2 months) the price of wheat futures decreases to 20.5/kg then the exchange debit bread maker and credit Farmer with Rs.25,000/-.

In practice normally no goods are transfer in a futures contract. It is settled in the following manner

On the expiry of the contract the exchange will pay to baker Rs.1,25,000/- and Farmer only Rs.75,000/-.

Here the baker has a profit of Rs.25,000/- and Farmer loses Rs.25,000/-.

But after the settlement of the future contract, the baker still needs wheat to make bread. So he will in actuality buy his wheat in the spot market for Rs.20.5/kg (a total 10,25,000) because that is the price of wheat in the spot market when he closed out his future contract. However technically the baker future profit of Rs.25,000/- go towards his purchase, which means he still pays his locked in price of Rs.20/kg. $(10,25,000 - 25,000 = 10,00,000)$.

The farmer after also closing out the contract can sell his wheat on the spot market at Rs.20.5/kg, but because of his losses from the futures contract the farmer still actually receives only 20. /kg.

In other words farmer losses in futures contract is off set by the higher selling price in the cash market there is referred to as hedging.

Economic Importance of Futures

Market Price Discovery

Because the futures market is both highly active and central to the globe market place, it is good source for vital market information and sentiment indicator.

Due to the highly competitive nature, the futures market has become an important economic tool to determine prices bases on todays and tomorrows estimated amount of supply and demand. Future market prices depend on a continuous flow of information from around the world and thus require a higher amount of transparency. Factors such as weather, war, debt default, deforestation can all have a major effect on supply and demand, as a result, the present and future price of the commodity.

The kind of information and the way people absorb it constantly changes the price of the commodity. This process is known as price discovery.

Risk reduction:

Futures market are also a place for people to reduce risk when making purchases. Risks are reduced because the price is pre set, therefore letting participants know how much they will need to buy or sell. This helps reduce the ultimate cost to retail buyers because with less risk there is less of a chance that manufacturers will jack up prices to make up for profit losses in cash market.

The main players in futures market fall into 3 categories

(i) Hedgers

Farmers, manufacturers, importers and exporters can all be hedgers. They are genuinely trying to reduce the risk caused by price volatility. They want to lock in a fixed price or return. In our example the baker wanted to secure a fixed price for purchasing wheat; at the same time the farmer wanted to secure a fixed selling price for his harvested wheat.

(ii) Speculators

They do not aim at minimising risk but they try to benefit from the inherently risky nature of futures market. They aim to profit from the very price change the hedgers are protecting themselves against. Hedgers want to minimise their risk no matter what they are investing in while speculators want to increase their risk and maximise their profit.

Speculators can make derivative market and Price Discovery Complex. But a successful derivative market needs speculators who are prepared to take on risk and provide more cautious people like farmers with protection they need. For example, if an excess of farmers wish to sell futures, the price of future will be forced down until enough speculators are tempted to buy in the hope of a profit. But if there is an increase of people who actually need wheat are wishing to buy 'wheat futures', the reverse will happen. The price of the wheat futures will be forced up until speculators are drawn into sell.

iii) Arbitrageurs

They try to profit from discrepancies in the relationship of spot and derivatives prices
They buy in one market and sell in another market.

They help to keep markets efficient.

The main and interesting aspect of futures is its Leverage

Leverage literally means the ability to influence people.

In future market, leverage refers to having control over large amounts of commodity with comparatively small level of capital. In other words, with a relatively small amount of cash, you can enter into a futures contract ie worth much more than you initially have to pay (ie deposit to your margin account).

In futures market price changes are highly leveraged meaning small change in a futures price can translate into a huge loss or gain.

Futures are highly leveraged because the initial margins that are set by the exchanges are relatively small compared to the cash value of the contract.

In our example, the initial deposit amount is only rupees one lakh, the size of the contract was Rs.10,00,000/- (i.e. 50,000 X 20) But as the price of wheat increased slightly from Rs.20/kg to Rs.20.5/kg in 2 months the profit recorded is Rs.25,000/-. i.e. his ROI of this transaction is 25%.

But we should not forget that when one person makes large profit another person makes huge loss i.e. why this leverage is called as **double edged sword**.

Options

To understand what option is I will give you a familiar example.

Now a days it is a common phenomenon, that once a student passes +2, his/her parents to secure admission at some Engineering College. In order to avoid risk, even before announcement of results of engineering entrance , parents book seats in different Engineering Colleges by paid a prescribed amount as premium. And after the announcement of result, they will chose which college to go. If the student choose one college the college authorities cannot deny the seat. But even if they don't chose that college the premium paid is lost.

An options contract is sold by one party (option writer) to another party (options holder). The contract offers the buyer the right, but not the obligation, to buy or sell a security or other financial asset at an agreed upon price during a certain period of time or on a specific date.

The agreed upon price is known as the *strike price*.

The last date on which the option can be exercised is called expiration date. On this date the option buyer should decide whether to enforce is option or not.

For this the buyer of the option will have to pay a fixed premium to the person who sold the option. This premium is payable irrespective of a whether he exercised his right to buy or sell.

There are two types of options.

(i) Call option and (ii) Put option

A Call option gives the buyer of the option the right to buy an asset at a certain price within a specific period of time.

Buyer of call option hope that the stock price will increase substantially before option expires.

A Put option gives the holder the right to sell an asset at a certain price within a specific period of time.

Buyer of puts hope that the price of stock will fall before the option expires.

Options are mainly two kinds.

(i) American option and (ii) European option

American option

If you buy an American option, you can exercise your option anytime during the life of the option. I.e. before the expiry date.

European option

In this, the option can be exercised only at the end of its life ie on the expiry date.

Options are mainly traded through an exchange.

Options are extremely versatile security that can be used in many different ways. Traders use options to speculate which is a relatively risky practice while hedgers use options to reduce the risk of holding assets.

In terms of speculation, options buyers and writers have conflicting views regarding the outlook on the performance of the underlying security.

For example, because the option writer will need to provide the underlying shares in the event that the stock market price will exceed the stock price, an option writer that sell a call option believes that the underlying stock price will drop relative to options strike price during the life of the option.

Swap

Swap is a contract by which 2 parties exchange, the cash flow linked to their liability.

They are usually traded OTC.

This can be explained by a simple example.

'A' has taken a variable rate loan. He felt that interest rates are going to increase. So he asked tender to convert his loan into fixed interest rate loans. But he refuses.

Lucky 'A' finds another person 'B' who has fixed rate loan about the same size of 'A' and 'B' wants to convert it into variable rate loan because 'B' hopes interest rates will decline in the future.

Thus 'A' and 'B' decide to swap loan. They work out a deal by which. As payment go towards B's loan and Bs go towards As loan. Although the names on the loan haven't changed, their contract allows them both to get the type of loan they want. This is a swap contract.

Derivative market is a very huge market. Each day millions and millions of dollars are traded. All types of market players indulge in derivative transactions for, many reasons. Many entities like Hedge funds are completely driven by profit motive, even if the word 'Hedge' is found in their name they actually do not do hedging but do speculation. They pump in millions of dollars into a market and at one point they exit the market with huge amount of profit. This can be a night mare to our farmers and it can be disasters to the market. If properly used, derivative can synergies the economic activities and create wealth the way we generate energy from nuclear power. However, if improperly used, it can act as Weapons of Mass Destruction as Mr. Warren Buffet, the world renowned economist and investor describes Derivatives. The world of derivative is an ocean with got huge might sharks in it. They can destroy all those which are powerless only well informed and tactical players can out manoeuvre them.

But derivative market is pretty useful for farmers and manufacturers. But the only thing is that they should have exhaustive knowledge and understanding about the structure of derivative market. Otherwise it can be disastrous. Many Indian companies have incurred huge losses in derivative transactions. This point towards lack of regulatory environment. Regulatory framer work is not properly formed or enforced now. But a personally feel that derivative market can thrive only in a well derivative economy.
