A Handbook on Derivatives

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B.com (Hons.), L.L.B, AICWA, FCA

PREFACE

Derivatives have changed the world of finance as pervasively as the Internet has changed communications .Well they are everywhere nowadays.

The most significant event in finance during the past decade has been the extraordinary development and expansion of financial derivatives. These instruments enhance the ability to differentiate risk and allocate it to those investors who are most able and willing to take it -- a process that has undoubtedly improved national productivity, growth and standards of living.

Derivatives products provide certain important economic benefits such as risk management or redistribution of risk away from risk-averse investors towards those more willing and able to bear risk. Derivatives also help price discovery, i.e. the process of determining the price level for any asset based on supply and demand.

All markets face various kinds of risks. This has induced the market participants to search for ways to manage risk. The derivatives are one ofthe categories of risk management tools. As this consciousness about risk management capacity of derivatives grew, the markets for derivatives developed.

Derivatives markets generally are an integral part of capital markets in developed as well as in emerging market economies. These instruments assist business growth by disseminating effective price signals concerning exchange rates, indices and reference rates or other assets and thereby render both cash and derivatives.

This book provides basics about Derivatives. i.e. What is Derivatives and different types of Derivatives? How are they used?

I have dedicated this book to the profession and industry. I shall appreciate from our readers and all concerned, any questions on various issues which can be included in our future editions or responded through email rajkumarfca@gmail.com

We will also appreciate from our readers friendly criticisms, suggestions and calling attention to errors which might have inadvertently crept in.

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1.1. INTRODUCTION

HISTORY OF DERIVATIVES

The history of derivatives is surprisingly longer than what most people think. Some texts even find the existence of the characteristics of derivative contracts in incidents of Mahabharata. Traces of derivative contracts can even be found in incidents that date back to the ages before Jesus Christ. However the commodities markets are one of the oldest prevailing markets in the human history. In fact derivatives trading started off in commodities with the earliest records being traced back to the 17th century when Rice futures were traded in Japan.

To start with probably the most significant as far as the history of futures markets, was the creation of the Chicago Board of Trade in 1848.
In 1848, Chicago was developing as a major center for the storage, sale, and distribution of Midwestern grain, as it was the prime location on Lake Michigan. Due to the seasonality of grain, Chicago's storage facilities were unable to accommodate the enormous increase in supply that occurred following the harvest. Similarly, its facilities were underutilized in the spring. Chicago spot prices rose and fell drastically. A group of grain traders created the "to-arrive" contract, which permitted farmers to lock in the price and deliver the grain later. This allowed the farmer to store the grain either on the farm or at a storage facility nearby and deliver it to Chicago months later. These “to-arrive” contracts proved useful as a device for hedging and speculating on price changes. Farmers and traders soon realized that the sale and delivery of the grain itself was not nearly as important as the ability to transfer the price risk associated with the grain. The grain could always be sold and delivered anywhere else at any time. These contracts were eventually standardized around 1865, and in 1925 the first futures clearinghouse was formed.

The Chicago Board of Trade (CBOT), the largest derivative exchange in the world, was established in 1848 where forward contracts on various commodities were standardized around 1865. From then on, futures contracts have remained more or less in the same form.

History of the Chicago Board of Trade

1848

On April 3, 1848, the Chicago Board of Trade (CBOT) was officially founded by 82 merchants at 101 South Water Street. Thomas Dyer was elected the first president of the CBOT.

1849-50
“To arrive” Contracts came into use for future delivery of flour, timothy seed and hay

1851
The earliest "forward" contract for 3,000 bushels of corn is recorded. Forward contracts gain popularity among merchants and processors.

The Indian scenario

India has been trading derivatives contracts in silver, gold, spices, coffee, cotton and oil etc for decades in the gray market. Derivatives on stocks were traded in the form Teji and Mandi in unorganized markets
The derivative market has existed in India since centuries as a result of the need for both users and producers of natural resources to hedge against price fluctuations in the underlying commodities.
Although trading in agricultural and other commodities has been the driving force behind the development of derivatives exchange in India, the demand for products on financial instruments-----such as currencies, stock indices have now far outstripped that for the commodities contract.
Derivatives trading commenced in India in June 2000 after SEBI granted the final approval to this effect in May 2001. SEBI permitted derivative segments of two stock exchanges, NSE and BSE, and their clearing house/corporations to commence trading and settlement in derivative contracts. SEBI approved trading in index futures contracts based on S&P CNX Nifty and BSE-30(Sensex) index. This was followed by approval for trading in options based on these two indexes and option on individual securities.

In other words
BSE created history on June 9, 2000 by launching the first Exchange traded Index Derivative Contract i.e. futures on the capital market benchmark index - the BSE Sensex
The first historical trade of 5 contracts of June series was done on June 9, 2000 at 9:55:03 a.m. between M/s Kaji & Maulik Securities Pvt. Ltd. and M/s Emkay Share & Stock Brokers Ltd. at the rate of 4755.
Stock options were introduced on 31 stocks on July 9, 2001 and single stock futures were launched on November 9, 2002
The Securities Contract (Regulation) Act, 1956 (SCRA) was amended in 1999 to include derivatives within the ambit of “securities” and the regulatory framework was developed for governing derivatives trading. The act has made it clear that derivatives shall be legal and valid only if such contracts are traded

on recognized stock exchange, thus precluding OTC derivatives. The government also rescinded in March 2000, the three- decade old notification which prohibited trading in securities.
India's experience with the launch of equity derivatives market has been extremely positive, by world standards. NSE is now one of the prominent exchanges amongst all emerging markets, in terms of equity derivatives turnover.

Securities firms and large commercial banks are primary participants and driving force behind the world derivative market. A substantial portion of all derivatives transactions are conducted between these parties. Additionally commercial banks and securities firms enter into with corporations of all types, financial institutions, institutional investors, private investors and essentially any entity or person which has need for derivative products or desires to include such products as part of an investment portfolio. The tremendous growth in the industry has required large securities firms, commercial banks, financial institutions etc to form separate departments which handle only derivative products.

Derivatives have changed the world of finance as pervasively as the Internet has changed communications . Well they are everywhere nowadays.

Even if you don't invest in derivatives, you need to know something about them. They have become such an integral part of the economy that virtually every company and bank is somehow affected by them. Derivatives are an innovation that has redefined the financial services industry and it has assumed a very significant place in the capital markets.
Investors will find that there are lots of opportunities to make money once they understand the concept of derivatives and its application.

2.1 Derivative

Derivatives are financial contracts whose value / price is dependent on the behavior of the price of one or more basic underlying asset (often simply known as underlying).These contracts are legally binding agreements, made on trading screen of stock exchange, to buy or sell an asset in future. The asset can be share, index, interest rate, bond ,rupee dollar exchange rate ,sugar , crude oil, soya been, coffee etc.

Everybody wants to know about them, everybody wants to talk about them. Derivatives however remain a type of financial instrument that few of us understand and fewer still fully appreciate, although many of us have

invested indirectly in derivatives by purchasing mutual funds or participating in a pension plan whose underlying assets include derivative products

A simple example of derivative is curd, which is derivative of milk. The price of curd depends upon price of milk which in turn depends upon the demand and supply of milk.

Section 2(aa) of Securities Contract (Regulation) Act 1956 defines Derivative as:

"Derivative" includes -

- “a security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security;
- a contract which derives its value from the prices, or index or prices, of underlying securities ”.

A working definition of derivative which will help to lay foundation.

“A derivative can be defined as a financial instrument whose value depends on (or derives from) the values of other, more basic underlying variables.”

---John C. Hull

Derivatives are compared to insurance. Just as you pay an insurance company a premium in order to obtain some protection against a specific event, there are derivative products that have a payoff contingent upon the occurrence of some event for which you must pay a premium in advance.

Example

Suppose you have a home of Rs. 50, 00,000. You insure this house for premium of Rs 15000 (It is a very risky house!) Now you think about policy (ignoring the house) as an investment.

- Suppose the house is fine after 1 year. You have lost the premium of Rs 15000.
- Suppose your house is fully damaged and broken in one year . You receive Rs 50,00,0000 on just paying premium of Rs 15,000.If you have bought insurance of any sort you have bought an option. Option is one type of a derivative.

Difference in share and Derivative

The difference is that while shares are assets, derivatives are usually contracts (the major exception to this are warrants and convertible bonds, which are similar to shares in that they are assets).

We can define financial assets (e.g. shares, bonds) as: claims on another person or corporation; they will usually be fairly standardised and governed by the property or securities laws in an appropriate country.

On the other hand, a contract is merely: an agreement between two parties, where the contract details may not be standardised.

Due to their great flexibility, many different types of investors use derivatives. A good toolbox of derivatives allows the modern investor the full range of investment strategy: speculation, hedging, arbitrage and all combinations thereof.

DERIVATIVE INSTRUMENTS

A) Forward Contract

There are no sure things in global markets. Deals that looked good six months ago can quickly turn sour if unforeseen economic and political developments trigger fluctuations in exchange rates or commodity prices
Over the years traders have developed tools to cope with these uncertainties. One of this tool is the forward agreements

"A contract that commits one party to buy and other to sell a given quantity of an asset for fixed price on specified future date".

In Forward Contracts one of the parties assumes a long position and agrees to buy the underlying asset at a certain future date for a certain price. The specified price is called the delivery price. The contract terms like delivery price, quantity are mutually agreed upon by the parties to contract. No margins are generally payable by any of the parties to the other.

Features of Forward Contract

- It is negotiated contract between two parties i.e. Forward contract being a bilateral contracts, hence exposed to counterparty risk.
- Each Contract is custom designed and hence unique in terms of contract size, expiration date, asset quality, asset type etc.
- A contract has to be settled in delivery or cash on expiration date
- In case one of two parties wishes to reverse a contract, he has to compulsorily go to the other party. The counter party being in a monopoly situation can command at the price he wants.

Example
"A" Ltd requires $500000 on May 2006 for repayment of loan installment and interest .As on December 2005 it appears
to the company that the dollar may become dearer as compared to the exchange rate, prevailing on that date say.
Accordingly A Ltd may enter into forward contract with banker for $500000.The Forward rate may be higher or lower than spot rate prevailing on the date of the forward contract. Let us assume forward rate as on December 2005 was 1$=Rs 44 as against spot rate of Rs 43.50. As on future i.e. May 2006 the banker will pay A Ltd $500000 at Rs 44 irrespective of the spot rate as on that date.

B) FUTURES

A Future contract is an agreement between two parties to buy or sell an asset at a certain time in future at a certain price. Future contracts are special type of forward contracts in the sense that the former are standardized exchange-traded contracts.
In other words
A future contract is one in which one party agrees to buy from / sell to the other party a specified asset at price agreed at the time of contract and payable on future date. The agreed price is known as strike price. The underlying asset can be commodity, currency debt, or equity. The Futures are usually performed by payment of difference between strike price and market price on fixed future date and not by the physical delivery and payment in full on that date.

Features Of Future Contract

- An organized exchange.
- Unlike the Forwards, the Future contracts are standardized contracts and are traded on stock exchange
- It is standardized contract with standard underlying instruments, a standard quantity and quality of the underlying instrument that can be delivered and standard time for such settlement transactions.
- Existence of a regulatory authority.
- Margin requirements and daily settlement to act as a safeguard.
- Leveraged positions--only margin required.
- Trading in either direction--short / long
- Index trading.
- Hedging / Arbitrage opportunity.

Example 1

When you are dealing in March 2006 Futures Infosys the minimum market lot i.e. minimum quantity that you can buy and sell is 1000 shares of Infosys The contract would expire on 28th March 2006 The price is quoted per share the tick size is 50 paisa per share 1500*.05=Rs 75 per contract / per market lot. The contract would be settle in cash and closing price in cash market on the expiry date would be the settlement price.

Example2
On 1st September Mr. A enters into Futures contract to purchase 100 equity shares of X Ltd at an agreed price of Rs 100 in December. If on maturity date the price of equity stock rises to Rs120 Mr. A will receive Rs 20 per share and if the price of share falls to Rs 90 Mr. A will pay Rs 10 per share. As compared to forward contract the futures are settled only by the difference between the strike price and market price as on maturity date.

Distinction between forwards and futures:

The basic nature of a forward and future, in a strict legal sense, is the same, with the difference that futures are market-driven organized transactions. As they are exchange-traded, the counterparty in a futures transaction is the exchange. On the other hand, a forward is mostly an over-the-counter transaction and the counterparty is the contracting party. To maintain the stability of organized markets, market-based futures transactions are subject to margin requirements, not applicable to OTC forwards. Futures markets are normally marked to market on a settlement day, which could even be daily, whereas forward contracts are settled only at the end of the contract. So the element of credit risk is far higher in case of forward contracts

C) Options
Option As the name implies, trading in options involves choice Someone who invest in option is purchasing right but not the obligation, to buy or sell a specified underlying item at an agreed upon price, known as exercise price or strike price.

In other words
Options are contracts that give the buyers the right (but not the obligation) to buy or sell a specified quantity of certain underlying assets at a specified price on or before a specified date. On the other hand, the seller is under obligation to perform the contract (buy or sell). The underlying asset can be a share, index, interest rate, bond, rupee-dollar exchange rate, sugar, crude oil, Soya bean, cotton, coffee etc.

An option contract is a unilateral agreement in which one party, the option writer, is obligated to perform under the contract if the option holder exercises his or her option.

(The option holder pays a fee or "premium" to the writer for this option.) The option holder, however, is not under any obligation and will require performance only when the exercise price is favorable relative to current market prices. If, on the one hand, prices move unfavorably to the option holder, the holder loses only the premium. If, on the other hand, prices move favorably for the option holder, the holder has theoretically unlimited gain at the expense of the option writer. In an option contract the exercise price (strike price), delivery date (maturity date or expiry), and quantity and quality of the commodity are fixed.

There are two basic types of options-call and put.
A call option gives an investor right to buy underlying item during specified period of time at an agreed upon price while put option confers the right to sell it.
Before going into Call and Put Options it is necessary to understand

- American options can be exercised at any time between the date of purchase and the expiration date. Most exchange-traded options are of this type.
  .
- European options are different from American options in that they can only be exercised at the end of their lives.

The options on the Nifty and Sensex are European style options--meaning that the buyer of these options can exercise his options only on the expiry day. He cannot exercise them before the expiry of the contracts as in case with options on stocks. As such the buyer of index options needs to square up his positions to get out of the market.

In India all stock options are American style options and index options are European style options.

The significant difference between a future and an option is that the option provides the contracting parties only an option, not an obligation, to buy or sell a financial instrument or security at a pre-fixed price, called the strike price. Obviously, the option buyer will exercise the option only when he is in the money, that is, he gains by exercising the option.

For example, suppose X holding a security of Rs 1000 buys an option to put the security at its current price with Y. Now if the price of the security goes down to Rs. 900. X may exercise the option of selling the security to Y at the agreed price of Rs. 1000 and protect against the loss on account of decline in the market value. If, on the other hand, the price of the security goes upto Rs. 1100, X is out of the money and does not gain by exercising the option to sell the security at a price of Rs. 1000 as agreed. Hence, X will not exercise the option.

In other words, the option buyer can only get paid and does not stand to a position of loss.

Had this been a futures contract or forward contract, Y could have compelled X to sell the security for the agreed price of Rs. 1000 in either case. That is to say, while a future contract can result into both a loss and a profit, an option can only result into a profit, and not a loss.

- Ø Call Option
- Ø Put Option

Call Option

The option that gives the buyer the right to buy is called a call option.
A call option grants the holders of the contract the right, but not the obligation, to purchase a good from the writer of the option in consideration for the payment of cash (the option premium).

Example: Suppose you have bought a call option of 2,000 shares of Hindustan Lever Ltd (HLL) at a strike price of Rs250 per share. This option gives you the right to buy 2,000 shares of HLL at Rs250 per share on or before March 28, 2006. The seller of this call option who has given you the right to buy from him is under the obligation to sell 2,000 shares of HLL at Rs250 per share on or before specified date say March 28, 2004 whenever asked.

Put Option

The option that gives the buyer the right to sell is called a put option.
A put option grants the holder the right, but not the obligation, to sell the underlying good to the option writer.
Suppose you bought a put option of 2,000 shares of HLL at a strike price of Rs250 per share. This option gives its buyer the right to sell 2,000 shares of HLL at Rs250 per share on or before specified date say March 28, 2006. The seller of this put option who has given you the right to sell to him is under obligation to buy 2,000 shares of HLL at Rs250 per share on or before March 28, 2006 whenever asked.

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The options on the Nifty and Sensex are European style options--meaning that the buyer of these options can exercise his options only on the expiry day. He cannot exercise them before the expiry of the contracts as in case with options on stocks. As such the buyer of index options needs to square up his positions to get out of the market.

Covered Call and Naked Call

call option position that is covered by an opposite position in the underlying instrument (individual stocks or a basket of index stocks) is called a covered call. Writing covered calls involves writing call options when the shares that might have to be delivered (if option holder exercises his right to buy), are already owned. E.g. A writer writes a call on Reliance and at the same time holds shares of Reliance so that if the call is exercised by the buyer, he can deliver the stock.
Covered calls are far less risky than naked calls (where there is no opposite position in the underlying), since the worst that can happen is that the investor is required to sell shares already owned at below their market value. When a physical delivery uncovered / naked call is assigned an exercise, the writer will have to purchase the underlying asset to meet his call obligation and his loss will be the excess of the purchase price over the exercise price of the call. The premium received on the writing, of course, to some extent mitigates this loss.

D) SWAP

A swap can be defined as barter or an exchange. A swap is contract whereby parties agree to exchange obligations that each of them have under their respective underlying contracts or we can say a swap is an agreement between two or more parties to exchange sequence of cash flows over a period in future . The parties that agree to swap are known as counterparties.

Swap is an agreement between two counterparties to exchange two streams of cash flows—the parties "swap" the cash flow streams. Those cash flow streams can be defined in almost any manner.

In other words: In a swap, two counterparties agree to a contractual arrangement wherein they agree to exchange cash flows at periodic intervals

Types of SWAP

- Interest Rate Swap
- Currency Rate Swap

Interest Rate Swap

In interest rate swap one party agrees to make fixed rate interest payment in return for floating –rate interest payments from counterparty, with interest rate payment based on a hypothetical amount of principal called notional amount. Notional amount typically do not change hands and is simply used to calculate payments.

Firm A is a AAA-rated Indian company. It needs Rs. 10,000,000 to finance an investment with a five-year economic life. Firm A is considering issuing 5-year fixed-rate bonds at 10% percent. Alternatively, Firm A can raise the money by issuing 5-year floating-rate notes at Bank Rate +.3 percent. Firm A would prefer to borrow at a floating rate.

Firm B has lower rate and can borrow at 11% fixed rate while it has an alternative to borrow at Bank Rate+.5%. Firm B prefers to borrow at a fixed rate

	FIRM A	FIRM B
FIXED RATE	10%	11%
FLOATING RATE	Bank Rate +.3%	Bank Rate+.5%
Preference	Floating Rate	Fixed Rate

So they enter into a swap agreement .Firm A borrows at fixed rate 10% Firm B borrows at Bank Rate +.5%. The parties agree a rate for swapping their interest commitments. Firm B pays a fixed rate of 10.1% to Firm A.

- For Firm A

Borrows	10%
Receives from Firm B	10.1%
Pays To Firm B	Bank Rate
Net Interest Cost i.e. savings	Bank Rate - .1%

- For Firm B

Borrows	Bank Rate + .5%
Receives from Firm A	(Bank Rate)
Pays To Firm A	10.1%
Net Interest Cost i.e. savings	10.6%

Thus both the Firms benefits from Interest Rate Swap.

Currency Swap

A currency swap is a form of swap. It is most easily understood by comparison with an interest rate swap. An interest rate swap is a contract to exchange cash flow streams that might be associated with some fixed income obligations—say swapping the cash flows of a fixed rate loan for those of a floating rate loan. A currency swap is exactly the same thing except, with an interest rate swap, the cash flow streams are in the same currency. With a currency swap, they are in different currencies. That difference has a practical consequence. With an interest rate swap, cash flows occurring on concurrent dates are netted. With a currency swap, the cash flows are in different currencies, so they can't be netted. Full principal and interest payments are exchanged without any form of netting.

Suppose you are receiving Cash Flow Stream A from counterparty. You would like to change the nature of that cash flow stream—perhaps making it less risky. Rather than attempt to renegotiate the obligation with the counterparty, you enter into a swap agreement with another party. Under that agreement, you swap Cash Flow Stream A for a Cash Flow Stream B, which better suits your needs

Variations of Basic Currency and Interest Rate Swaps.

- Currency Swaps
  - fixed for fixed
  - fixed for floating
  - floating for floating
  - amortizing
- Interest Rate Swaps
  - zero-for floating
  - floating for floating

How do options differ from swaps and forwards

In a forward or swap, the parties lock in a price (e.g., a forward price or a fixed swap rate) and are subject to symmetric and offsetting payment obligations. In an option, the buyer purchases protection from changes in a price or rate in one direction while retaining the ability to benefit from movement of the price or rate in the other direction. In other words, the option involves asymmetric cash flow obligations.

Both options and futures are tools to speculate on the market and hedge your portfolio. However, the rights and obligations of buyers and sellers–and so their risk profiles–are different in the two types of contracts.

How do options differ from futures

In futures, both the buyer and the seller are obligated to buy and sell, respectively, the underlying asset–the quid pro quo relationship. In case of options, however, the buyer has the right, but is not obliged to exercise it. Effectively, while buyers and sellers face a symmetric risk profile in futures, it's not so in the case of options. A buyer's upside potential is unlimited, while his losses are limited to the premium paid. For the option seller, on the other hand, his profits are limited to the premium received, while his loss potential is unlimited.

Strategies Using Derivatives Products

Cap ,Floor ,Collars

One category of option transactions are cap, floor and collar transactions. These are swap-related transactions which provide rate protection to the contracting parties. Essentially, under these agreements the buyer generally pays a periodic fixed amount and the seller pays periodic amounts of the same currency based on: for cap transactions, the excess, if any, of the variable rate over a specified cap rate; or for floor transactions, the excess, if any, of a specified floor rate over the variable rate. Under collar transactions, one party becomes the floating rate payer on the cap and the other party becomes the floating rate payer on the floor.
These instruments are like interest rate options whose exercise takes place several times during the contract if the buyer of the instruments finds doing so at his advantage.

Purchase of cap enables a borrower to fix in advance a maximal borrowing rate for specified amount and for a specified duration, while allowing him to avail benefit of fall in rates. Normally buyer of a cap pays premium to the seller.

Purchase of a floor enables a lender to fix in advance a minimal rate for placing a specified amount for a specified duration, while allowing him to avail benefit of rise in rates. The buyer of the floor pays a premium to its seller.

Importance of caps and floor- They offer a guarantee of maximal rate (for caps) and a minimal rate (for floors) while permitting to benefit from favorable movements

A)Cap: An option that pays an amount of interest on an agreed-upon amount of notional principal whenever the market index is above the cap contract's index rate.

B) Floor: An option that pays an amount of interest on an agreed-upon amount of notional principal whenever the market index is below the floor's predetermined base.

C) Collars: are a combination of caps and floors. The purchase of a collar enables its buyer to ensure a maximal borrowing rate (cap) while permitting to benefit from any fall in rates up to floor.

Examples of Cap, Floor and Collars

For example, if some one wants to transfer the risk of interest rates going up, one will enter into a cap on a notional amount of say, Rs. 100 million, with the

interest rate of 5.5%. Now if the interest rate increases to 6%, the cap holder will be able to claim a settlement from the cap seller, for the differential rate of 0.5% on the notional amount. If the interest does not go up, or rather declines, the option holder would have paid the premium, and there is no settlement.

On the other hand, if some one expects the interest rate to go down which spells a risk to him, he would enter into a floor, which would allow him to claim a settlement if the interest rate falls below a particular strike rate.

Interest rate collar is the fixation of both a cap and floor, so that the payment will be triggered if the rate goes above the collar and below the floor.

D) Vanilla :A term that refers to a relatively simple derivative financial instrument, usually a swap or other derivative that is issued with standard features. i.e Simplest form of a contract.

E) Exotic: People generally refer to an exotic option when the contract is not a plain vanilla put or call that are traded on an open exchange and is instead traded over-the-counter (OTC).
It is an options strategy that works by selling two calls and buying two calls on the same or different markets, with different maturity dates. One of the options has a higher exercise price and the other has a lower exercise price than the other two options. Spread is the price difference between two related markets or commodities.

F) Index Future contract

Futures contract based on an index i.e. the underlying asset is the index, are known as Index Futures Contracts. For example, futures contract on NIFTY Index and BSE-30 Index. These contracts derive their value from the value of the underlying index. Index futures are the future contracts for which underlying is the cash market index.

For example: BSE may launch a future contract on "BSE Sensitive Index" and NSE may launch a future contract on "S&P CNX NIFTY".

Some specific uses of Index futures

- Portfolio Restructuring - An act of increasing or decreasing the equity exposure of a portfolio, quickly, with the help of Index Futures.
- Index Funds - These are the funds which imitate / replicate index with an objective to generate the return equivalent to the Index. This is called Passive Investment Strategy.

Popular Indices in India

- BSE-30 Sensex
- BSE-100 Natex
- BSE Dollex
- BSE-200
- BSE-500

- S&P CNX Nifty
- S&P CNX Nifty Jr.
- S&P CNX Defty
- S&P CNX Midcap
- S&P CNX 500

NYSE Composite :

A market-value weighted index of all stocks on the NYSE. The NYSE composite was amongst the first stock index futures contract to be listed on May 6, 1982 at the New York Futures Exchange (NYFE) a subsidiary of NYSE. Measures all common stocks listed on the New York Stock Exchange and four subgroup indexes: Industrial, Transportation, Utility, and Finance.

S&P 500(Standard And Poor 500 Index)

An index consisting of 500 stocks chosen for market size, liquidity and industry group representation, among other factors. The S&P 500 is designed to be a leading indicator of U.S. equities, and it is meant to reflect the risk/return characteristics of the large-cap universe. It is a market-cap index representing 500 leading companies in leading industries in U.S. in large cap blue chip stocks

VALUE LINE INDEX

An equal-weighted stock index containing 1,700 companies from the NYSE, American Stock Exchange, Nasdaq, and over-the-counter market.

NASDAQ100

(National Association of Securities Dealers Automated Quotation 100)

It comprises of top 100 non-financial stocks, domestic as well as foreign, listed on NASDAQ

RUSSELL 1000

This is sub set of the broader Russel 3000 index which tracks only U. S. companies. NYBOT (New York Board of Trade)

The Russell Indexes (note that Russell uses "Indexes" rather than "Indices") are a set of stock indexes of listed US companies. The main index is the Russell 3000 Index, which is divided into several sub-indexes. The list of stocks in the Russell 3000 is managed by the Russell Investment Group. Russell forms its indexes by listing all US companies in descending order by market capitalization. The top 3,000 stocks (those of the 3,000 largest companies) make up the broad Russell 3000 Index. ...

S & P Midcap 400

Launched in 1991, the S&P Mid Cap 400 Index lists 400 medium size US companies in various industries. The S&P Mid Cap 400 is a market-value weighted index.

All Ordinary Share Price index (Australia)

The major stock price index in Australia. The capitalization weighted index is made up of the largest 500 companies as measured by market capitalization that are listed on the Australian Stock Exchange.

Hang Seng Index

A market-value weighted index of the stock prices of the 33 largest companies on the Hong Kong market.

Nikkei 225 Average

A trademark used for an index of the relative price of selected stocks listed on the Tokyo Stock Exchange. It is Japan's longest running stock index

CAC 40

A narrow-based, capitalization-weighted index of 40 companies listed on the Paris Bourse. This benchmark Index of France consists of 40 blue chip stocks among France's largest companies & are weighted in the index by market capitalization.

DAX

A total return index of 30 selected German blue chip stocks traded on the Frankfurt Stock Exchange. It is Germany's blue chip index of 30 leading stocks.

MIB-30

The MIB-30 is a capitalization weighted index of 30 blue chip stocks listed on the Italian exchange

OMX

The Swedish Equity Index (OMX) is a capital weighted index of the 30 stocks with the market trading volumes at the Stockholm Stock exchange.

IBEX- 35

It tracks Spain's 35 most liquid stocks

FTSE 100

Capitalization-weighted index of the 100 most highly capitalized companies traded on the London Stock Exchange.

The Financial Times Stock Exchange Index of 100 Leading Shares, or FTSE 100 Index (pronounced footsie), is a share index of the 100 largest companies listed on the London Stock Exchange. The index is seen as a barometer of success of the British economy and is the leading share index in Europe. It is maintained by the FTSE Group, which originated as a joint venture between the Financial Times and the London Stock Exchange. ...

G) Index option Contract

Similarly, the options contracts, which are based on some index, are known as Index options contract. However, unlike Index Futures, the buyer of Index Option Contracts has only the right but not the obligation to buy / sell the underlying index on expiry. Index Option Contracts are generally European Style options i.e. they can be exercised / assigned only on the expiry date.

H) Swaptions Swaptions are options to buy or sell a swap that will become operative at the expiry of the options. Thus swaption is an option on forward swap. Rather than have calls and puts, the swaptions market has receiver swaptions and payer swaptions. A receiver swaption is an option to receive fixed and pay floating. A payer swaption is an option to pay fixed and receive floating.
The terms of the future swap transactions are set at the time when the swaption is entered into.
The party selling the swaption is paid a premium and is exposed to market fluctuations (note that the terms of the optioned swap transaction are normally set at the current market rates on the date upon which the option is sold).
Swaptions can be either physically settled or cash settled. Physically settled swaptions allow the purchasing party to require the selling party to actually enter into the agreed-upon swap transaction. Cash settled swaptions are settled on the expiration date (maturity date) by a cash payment which is calculated based upon the mark-to-market (as explained further below) value of the underlying swap transaction at the expiration date.

Use of SWAPTION
Suppose that there is uncertainty about whether interest rates will increase or decrease in the future. Instead of using an interest rate swap, a swaption can be used to protect a firm against the risk of higher borrowing costs, but without giving up the possible benefit of lower interest rates.
A swaption is an option on an interest rate swap. Distinction is made between payer swaptions and receiver swaptions
Payer swaption : the right but not the obligation to pay fixed rate and receive floating rate in the underlying swap.
Receiver swaption : the right but not the obligation to receive fixed and pay floating rate in the underlying swap.

I) Spread

The purchase of one option and the simultaneous sale of a related option, such as two options of the same class but different strike prices and/or expiration dates. Also called spread options
A spread trading strategy involves taking a position in two or more options of the same type options or futures transactions involving a long position in one contract and a short position in another similar contract.

- Ø Bull Spreads

An option strategy in which maximum profit is attained if the underlying security rises in price. Either calls or puts can be used. The lower strike price is purchased and the higher strike price is sold. The options have the same expiration date.
This can be created by buying a call option on a stock with a certain strike price and selling a call option on the same stock with higher strike price

- Ø Bear Spreads

A strategy in options trading in which an option is purchased at an exercise price above that of the underlying instrument and simultaneously an option is sold at an exercise price below that of the underlying instrument, both with reference to the same expiry month. This applies to either call options or put options.
Say you believe that the underlying asset price is likely to fall but want to limit your loss, should there be a gain. A purchased put would accomplish this. Suppose further that while you believe the asset price will fall, you don't think it will fall very much. Thus, you are willing to sell off the extreme downside. You can do this by selling a second put against the one you purchased, but at a lower striking price. You will still lose on the upside because the put you bought (having a higher strike) will be more expensive than the put you sold. However, your loss on the upside will be less than it would have been without the sold put. This position is termed as a bear spread – "spread" since it involves buying and selling options of the same "type" (both calls or both puts) on the same underlying asset; "bear" since it benefits from a falling asset price.

- Ø Butterfly Spread

An option strategy combining a bull and bear spread. It uses three strike prices. The lower two strike prices are used in the bull spread, and the higher strike price in the bear spread. Both puts and calls can be used.

It is an options strategy that works by selling two calls and buying two calls on the same or different markets, with different maturity dates. One of the options has a higher exercise price and the other has a lower exercise price than the

other two options. Spread is the price difference between two related markets or commodities.

- Ø Calendar Spreads

An option strategy involving the simultaneous purchase and sale of options of the same class and strike price but different expiration dates.

When you are fairly neutral on the market and you want to generate additional income from your investments, there is an option strategy that is worth your consideration. This strategy involves selling an option with a nearby expiration, against the purchase of an option (with the same strike price) which has an expiration date that is further out.

A Calendar Spread is an option spread where the strike prices are the same, but they have different expiration dates. These spreads are also referred to as horizontal spreads or time spreads.

- Ø Diagonal Spreads

An options strategy established by simultaneously entering into a long and short position in two options of
the same type (two call options or two put options) but with different strike prices and expiration dates.
An option strategy involving two options, one a put and one a call, with different expiration dates and strike prices.

A diagonal spread involves different strike prices and different expiration dates in which the options held long have a later maturity than the options held short.

It is a conservative strategy with limited risk and considerable profit potential.

J) Straddle

The purchase or sale of an equal number of puts and calls, with the same strike price and expiration dates. A straddle provides the opportunity to profit from a prediction about the future volatility of the market. Long straddles are used to profit from high volatility. Long straddles can be effective when an investor is confident that a stock price will change dramatically, but cannot predict the direction of the move. Short straddles represent the opposite prediction, that a stock price will not change.

A long straddle position is constructed by purchasing both a put and a call at an exercise price at or near the current price of the underlying asset. To become profitable, the underlying must have a change in price greater than the total

cost of the straddle, and the price change must occur prior to expiry. If it doesn't, the straddle expires worthless. Since a straddle can never be worth less than zero, long straddles have limited risk and unlimited profit potential.

A short straddle position is constructed by selling both a put and a call at an exercise price at or near the current price of the underlying asset. Because the options are sold rather than bought, the position is initially as profitable as it can be. To remain profitable at expiry, the underlying price must move less than the combined price obtained by selling the straddle. Short straddles carry unpredictably large risks and limited profit potential.

A short straddle position is constructed by selling both a put and a call at an exercise price some distance from the current exercise of the underlying asset. It has the same limited-gain, unlimited-loss characteristics as a short straddle, but it requires a greater price change for the position to lose money.

An options strategy where the investor holds a position in both a call and put with different strike prices but with the same maturity and underlying asset. This option strategy is profitable only if there are large movements in the price of the underlying asset.

This is a good strategy if you think there will be a large price movement in the near future but are unsure of which way that price movement will be.
An options strategy involving a put option and a call option with the same expiration dates and strike prices which are out of the money. The investor profits only if the underlier moves dramatically in either direction.

K) Strip and strap
A strip consists of a long position in one call and two puts with the same strike price and expiration date. A strap consists of a long position in two calls and one put with the same strike price and expiration date

L) LEPOS

Low exercise price options are contracts with low exercise price
It allows you to profit from the movements of the price in the underlying security without paying the full amount of option premium upfront
A LEPO is similar to a standard exchange-traded call option, in that it gives the taker the right to purchase shares in a company at a predetermined exercise price and imposes an obligation upon the writer of the LEPOS to sell those shares at the exercise price if the option is exercised.
Main difference between LEPOS and standard exchange traded option is that with LEPOS you don’t pay the full amount of premium upfront. Infact you pay

the margin during the life of the LEPOS and pay the balance of the premium if and when you exercise your LEPOS

3.1 Benefits of Trading In Derivatives

When managed properly, derivative products can be efficient, powerful financial tools that enhance stability of business operations. They also can allow money managers the opportunity to structure an institution's balance sheet to help achieve desired objectives in almost any economic environment.
Derivatives are useful for hedging the risks normally associated with commerce and finance. Farmers can use derivatives to hedge the risk that the price of their crops fall before they are harvested and brought to market. Banks can use derivatives to reduce the risk that the short-term interest rates they pay to their depositors will rise against the fixed interest rate they earn on their loans and other assets. Pension funds and insurance companies can use derivatives to hedge against large drops in the value of their portfolios.

Hedging

Hedging is defined as reducing exposure to risk of loss resulting from fluctuations in exchange rates, commodity prices, interest rates etc.
Hedgers participate in the derivatives market to lock the prices at which they will be able to do the transaction in the future. Thus they are trying to avoid the price risk. Hedging is buying and selling futures contracts to offset the risks of changing underlying market prices.

Arbitrage

Arbitrage is possible when one of three conditions is met

- The same asset does not trade at same price on all markets
- Two assets with identical cash flows do not trade at the same price
- An asset with a known price in future does not trade today at its future price discounted at risk free interest rate

Arbitrators watch the spot and futures markets and whenever they spot a mismatch in the prices of the two markets they enter to get the extra profit in a risk-free transaction.

Speculation

Speculators participate in the futures market to take up the price risk, which is avoided by the hedgers.

Speculation is more commonly used by hedge funds or traders who aim to generate profits with only marginal investments, essentially placing a bet on the movement of an asset.
Leverage the use of various financial instruments or borrowed capital, such as margin, to increase the potential return of an investment.
Leverage can be created through options, futures, margin and other financial instruments. For example, say you have Rs. 5,000 to invest. This amount could be invested in 10 shares of ABC Limited, but to increase leverage, you could invest Rs 5,000 in five options contracts. You would then control 500 shares instead of just 10.

Before understanding how to trade in Future and options it is necessary to understand

IN THE MONEY

Those options which have certain intrinsic value are called in the money, by virtue of the fact that they are holding some money right now. For Example when ABC Limited is quoting at Rs 500, a ABC Limited call option with Rs 490 strike price is in the money because you have the right to buy at a price lower than market price in the underlying. All the stock options which have strike price lower than spot price of the underlying are in the money

OUT OF MONEY

Those options whose intrinsic value is zero are called out of money by virtue of fact that they are not holding any money right now. For example when ABC Limited is quoting at Rs 500 and ABC Limited Call option is Rs 520, strike price is out of money because you have the right to buy at higher price than the spot price of the underlying.

AT-THE-MONEY

Those options which have their strike price closer to the spot price of the underlying are called near the money options because these are due to get in our out of the money. The options whose strike price is the same as the spot price of the underlying are called at the money options
In other words

	CALL OPTION	PUT OPTION
In-the-money	Strike price < Spot price of underlying asset	Strike price > Spot price of underlying asset
At-the-money	Strike price = Spot price of underlying asset	Strike price = Spot price of underlying asset
Out-of-the-money	Strike price > Spot price of underlying asset	Strike price = Spot price of underlying asset

BASIS

- Basis is defined as the difference between cash and futures prices: Basis = Cash prices - Future prices.
- Basis can be either positive or negative (in Index futures, basis generally is negative).
- Basis may change its sign several times during the life of the contract.
- Basis turns to zero at maturity of the futures contract i.e. both cash and future prices converge at maturity

Derivative Market

The derivatives market performs a number of economic functions:
1. They help in transferring risks from risk averse people to risk oriented people
2. They help in the discovery of future as well as current prices
3. They catalyze entrepreneurial activity
4. They increase the volume traded in markets because of participation of risk averse people in greater numbers.
5. They increase savings and investment in the long run

The securities market has two interdependent and inseparable segments, namely the primary market and the secondary market. The primary market is the channel for creation of new securities through financial instruments by

public limited companies as well as government whereas secondary market deals in securities already issued. The resources in the primary market are mobilized either through the public issues or through private placement. A public issue is if anybody and everybody can subscribe for it, whereas if the issue is made available to a selected group of persons it is termed as private placement. There are two major types of issuers who issue securities. The corporate entities who issue mainly debt and equity instruments and the government (central as well as state) who issues debt securities.
The secondary market enables participants who hold securities to trade in securities adjust their holdings according to the changes in the assessment of risk and return. The secondary market has further two components, namely:

- The Over –the-Counter (OTC) market
- The exchange traded market.

The Over –the-Counter (OTC) and Exchange Traded Market

Tailor-made derivatives, not traded on a futures exchange, are traded on over-the-counter markets. OTC markets are informal markets where trades are negotiated.
The OTC contracts are generally not regulated by a regulatory authority and the
exchange's self-regulatory organization, although they are affected indirectly by national
legal systems, banking supervision and market surveillance
The OTC derivatives markets have the following features compared to exchange-traded
derivatives:

- The management of counter-party (credit) risk is decentralized and located within individual institutions.
- There are no formal centralized limits on individual positions, leverage, or margining.
- There are no formal rules for risk and burden-sharing.
- There are no formal rules or mechanisms for ensuring market stability and integrity, and for safeguarding the collective interests of market participants, and
- The OTC contracts are generally not regulated by a regulatory authority and the

exchange's self-regulatory organization, although they are affected indirectly by national legal systems, banking supervision and market surveillance.

However it is desirable to supplement the OTC market by an active exchange-traded derivative market. In fact, those who provide OTC derivative products can hedge their risks through the use of exchange-traded derivatives. In India, in the absence of exchange-traded derivatives, the risk of the OTC derivatives market cannot be hedged effectively.

Exchange-traded derivative market has the following features: an electronic exchange mechanism and emphasizes anonymous trading, full transparency, use of computers for order matching, centralization of order flow, price-time priority for order matching, large investor base, wide geographical access, lower costs of intermediation, settlement guarantee, better risk management, enhanced regulatory discipline, etc.

Derivative trading commenced in India in June 2000 after SEBI granted the approval to this effect in May 2000. SEBI permitted the derivative trading on two stock exchanges, i.e. NSE and BSE, and their clearing house/corporation to commence trading and settlement in approved derivative contracts. To begin with, SEBI approved trading in index futures contracts based on S&P CNX Nifty Index and BSE-30 (Sensex) Index. This was followed by approval for trading in options based on these two indices and options on individual securities. The trading in index options commenced in June 2001 and trading in options on individual securities would commence in July 2001 while trading in futures of individual stocks started from November 2001. In June 2003, SEBI/RBI approved the trading on interest rate derivative instruments and only NSE introduced trading in interest rate futures contracts.

3.1 How to Start Trading in Derivatives

Sign up the client agreement form and risk disclosure document provided to you by your broker.

Deposit upfront the initial margin

You can pay initial margin in non-cash (bank guarantee, securities) form also. This is an arrangement between you and your broker. However, the mark-to-market loss has to be settled in cash, only.

Some of the trading members also provide the Internet facility to trade in the futures and options market.

You are required to open an account with one of the trading members and complete the related formalities, which include signing of member-constituent agreement, constituent registration form and risk disclosure document.

The trading member will allot to you an unique client identification number. To begin trading, you must deposit cash and/or other collaterals with your trading member as may be stipulated by him.

4.1 Trading and Settlement In Futures Contracts on index & individual securities

Trading in Futures contracts can be effected on a daily basis and one can enter into the trading scenario as a buyer or seller through the Futures and Option Terminals of approved stock brokers. Whether to start as a buyer or seller depends on one's perspective about the value of the underlying asset. At any point of time, there are three series which are available in the futures market. For example, if we are in July, we can trade in the July series, August series, or September series.

After entering into a futures contract, the trader can keep his position open till the day of settlement, normally the last Thursday of that month or the position could be closed out by effecting an opposite transaction(a sell against a buy and vice versa).So long as the position is open(open position refers to outstanding purchase or sales positions at any point of time),the same will mark to market(MTM, that is, revaluation of the asset on a daily basis)everyday at the daily settlement price, that is, the closing value of the index on that day and the difference will be credited or debited to the trader's account. Thus, the position will be brought forward to the next day at the daily settlement price. On the day of settlement (expiry day) all open contracts for that month will be closed out by the Exchange at the settlement price (Settlement price is the closing value of the asset on the day of settlement/maturity day).

In other words

Settlement of Futures Contracts on index & individual securities

Ø Daily Mark-to-Market Settlement

The positions in the futures contracts for each client is marked-to-market to the daily settlement price (Closing price of the futures contracts on the trading day. The closing price is the last half hour weighted average price of the contract) of the futures contracts at the end of each trade day.

The profits / losses are computed as the difference between the trade price or the previous day s settlement price, as the case may be, and the current day s settlement price.

Ø Final Settlement

On the expiry of the futures contracts, final settlement price (Closing price of the relevant underlying index / security in the Capital Market segment of NSE, on the last trading day of the futures contracts.(The closing price of the underlying index / security is its last half an hour weighted average value / price in the Capital Market segment of NSE). and the resulting profit / loss is settled in cash.

The final settlement of the futures contracts is similar to the daily settlement process except for the method of computation of final settlement price. The final settlement profit / loss is computed as the difference between trade price or the previous day's settlement price, as the case may be, and the final settlement price of the relevant futures contract.

Open positions in futures contracts cease to exist after their expiration day

Two types of margins need to be paid to take up and hold positions in the option segment. They are known as

- Initial margin and Mark and
- Market Margin.

While the initial margin has to be paid upfront as a percentage of the value of the underlying before the deal is struck, mark to market margin emerges daily when the contract is mark to market and the same has to be paid on next day basis. Failure to pay margins by clients will result into compulsory close out of one's position as insisted by SEBI.

4.1 Trading and Settlement In Options

An investor has to register himself with a broker who is a member of the BSE / NSE Derivatives Segment. If he wants to buy an option, he can place the order for buying a Sensex Call or Put option with the broker. The Premium has to be paid up-front in cash. He can either hold on to the contract till its expiry or square up his position by entering into a reverse trade.

If he closes out his position, he will receive Premium in cash, the next day. If the investor holds the position till expiry day and decides to exercise the contract, he will receive the difference between Option Settlement price & the Strike price in cash.

If he does not exercise his option, it will expire worthless. If an investor wants to write / sell an option, he will place an order for selling Sensex Call / Put option. Initial margin based on his position will have to be paid up-front (adjusted from the collateral deposited with his broker) and he will receive the premium in cash, the next day. Everyday his position will be marked to market & variance margin will have to be paid. He can close out his position by a buying the option by paying requisite premium. The initial margin which he had paid on the first position will be refunded. If he waits till expiry, and the option is exercised, he will have to pay the difference in the Strike price & the options settlement price, in cash. If the option is not exercised, the investor will not have to pay anything.

5.1 Three types of Intermediaries in Stock Market

There are three types of intermediaries or members in the derivative segment and they are known as trading members,clearing members and trading cum clearing members.

- Trading Members
  Trading members are entitled to carry on the business of effecting buying and selling transactions in the derivative segment. However, they are not authorized to deal with clearing operations like the issues related to payment of margins, final settlement etc.

- Clearing members
  Clearing members also known as professional clearing members are the members under the clearing corporation of the exchange and are dealing with the clearing activities like margins, final settlement etc. Trading members are required to deal with the clearing members only on matters such as margin payments, settlement etc.

- Ø Trading cum Clearing Members
  Trading cum Clearing members are authorized to take up the activities of both the trading member and the clearing member.

The Trading Member, like in Stock Market segment, is required to enter all the orders in the trading system. The Trading Member is required to disclose to the Exchange at the time of order entry that the order is on his own account or on behalf of clients.

The Trading Member provides the client with a copy of the trade confirmation slip as generated on the Trading System, forthwith on execution of the trade and with a contract note for the trade executed.

Orders entered into the Trading System by Trading Members shall be subject to various validation requirements as specified by the F&O Segment of the Exchange from time to time including trading parameters, turnover limits, exposure limits and/or other restrictions placed on traded derivatives contracts. The Trading System shall not accept orders that do not meet the validation checks. Orders in the Normal market shall be matched on price-time priority basis. The best buy order shall match with the best sell order. For trading on price, the best buy order would be the one with the highest price and the best sell order would be the one with the lowest price.

Trades generated on the system are irrevocable and 'locked in'. The Trading Member shall make available to his client the system generated trade number through Trade Confirmation Slip. The Trading Member shall issue a contract note to his constituents for trades executed on his behalf. The contract note shall be signed by a Trading Member or his Authorized signatory or constituted Attorney and shall be time stamped with the time of receipt of order and the time of execution of order. The Brokerage charged to the client shall be indicated separately from the price, in the contract note.

Risk in Derivatives

The first danger posed by derivatives comes from leverage they provide to both hedgers and speculators. Derivatives transactions allow investors to take large price position in the market while committing a small amount of capital
Leverage makes it cheaper for hedgers to hedge but it also make speculation cheaper. Instead of buying 1million of stock an investor can buy future contracts of stock with only a few thousands of capital. The returns would be the same as holding stock. Taking these greater risks raises the likelihood that investor makes or loses large amount of money. If they suffer losses, they are then threatened with bankruptcy. If they go bankrupt, then the people, banks and other institutions that invested in them or

lent money to them will face possible losses. The facing of these losses and failures is known as systemic risks.

In short the investors need to be sure they understand what they are getting into. They need to determine how much risk they are willing to tolerate, and they need to think about what they will do if things go wrong be Investors who plan to sell derivative before maturity needs to consider at least two major points 1) how easy or difficult will it be to sell before maturity and 2) how much will it cost? Are there any penalties for selling before maturity? What if the derivative is trading at a much lower price?

TYPES OF RISKS IN DERIVATIVES

- Systemic risk: manifests itself when there is a large and complex organization of financial positions in the economy. Systemic risk is said to arise when the failure of one big player or of one clearing corporation somehow puts all other clearing corporations in the economy at risk.

- Credit Risk is the possibility of loss from the failure of counterparty to fully perform on its contractual obligations is a significant element of the galaxy of risks facing the derivatives dealer and the derivatives end-user. There are different grades of credit risk. The most obvious one is the risk of default. Default means that the counterparty to which one is exposed will cease to make payments on obligations into which it has entered because it is unable to make such payments.
- Market Risk is the possibility that the value of on-or off-balance-sheet positions will adversely change before the positions can be liquidated or offset with other positions. For banks, the value of these positions may change because of changes in domestic interest rates (interest rate risk) or foreign exchange rates (foreign exchange rate risk).
- Operational Risk is the possibility that losses may occur because of inadequate systems and controls, human error, or mismanagement..
- Legal Risk is the possibility of loss that arises when a contract cannot be enforced - for example, because of poor documentation, insufficient capacity or authority of the counterparty, or enforceability of the contract in a bankruptcy or insolvency proceeding.
- Liquidity Risk has two board types: 1) market liquidity risk and 2) funding risk.
    - Ø Market liquidity risk arises from the possibility that a position cannot be eliminated quickly either by liquidating it or by establishing offsetting positions.
    - Ø Funding risk arise from the possibility that a firm will be unable to meet the cash requirements of its contracts.

Brief Overview of Commodity Derivative

The commodity derivative market has been functioning in India since the nineteenth century with organised trading in cotton through the establishment of Cotton Trade Association in 1875. Over the years, there have been various bans, suspensions and regulatory dogmas on various contracts.

It is only in the last decade that commodity derivatives exchanges have been actively encouraged. But, the markets have suffered from poor liquidity and have not grown to any significant level, till recently.

The government has now allowed national commodity exchanges, similar to the BSE & NSE, to come up and let them deal in commodity derivatives in an electronic trading environment. These exchanges are expected to offer a nation-wide anonymous, order driven, screen based trading system for trading. The Forward Markets Commission (FMC) will regulate these exchanges. Consequently four commodity exchanges have been approved to commence business in this regard. They are:

1. Multi Commodity Exchange (MCX) located at Mumbai
2. National Commodity and Derivatives Exchange Ltd (NCDEX) located at Mumbai
3. National Board of Trade (NBOT) located at Indore
4. National Multi Commodity Exchange (NMCE) located at Ahmedabad

Different segments in the commodities market

The commodities market exits in two distinct forms namely the Over the Counter (OTC) market and the Exchange based market. Also, as in equities, there exists the spot and the derivatives segment. The spot markets are essentially over the counter markets and the participation is restricted to people who are involved with that commodity say the farmer, processor, wholesaler etc. Majority of the derivative trading takes place through exchange-based markets with standardized contracts, settlements etc.

Commodity derivatives, which were traditionally developed for risk management purposes, are now growing in popularity as an investment tool.

Most of the trading in the commodity derivatives market is being done by people who have no need for the commodity itself.

They just speculate on the direction of the price of these commodities, hoping to make money if the price moves in their favour.

The commodity derivatives market is a direct way to invest in commodities rather than investing in the companies that trade in those commodities.

For example, an investor can invest directly in a steel derivative rather than investing in the shares of Tata Steel. It is easier to forecast the price of commodities based on their demand and supply forecasts as compared to forecasting the price of the shares of a company -- which depend on many other factors than just the demand -- and supply of the products they manufacture and sell or trade in.

The onset of these exchanges and the introduction of futures contracts on new commodities by the Forwards Market Commission have triggered significant levels of trade. Now the commodities futures trading in India is all set to match the volumes on the capital markets.

Conclusion

Indian derivatives market has been rapidly evolving in terms of variety and sophistication of instruments, range of market participants as well as volume of turnover. Adequate measures are also being put in place to try and ensure that adverse effects from excessive leverage in derivative market do not in any way rupture normal financial market transactions.

Market participants generally view derivatives as useful products that have allowed businesses to become more competitive, investors to achieve superior returns, and governments to cut financing costs by managing financial risks in ways they previously could not.

Thus to conclude
By far the most significant event in finance during the past decade has been the extraordinary development and expansion of financial derivatives. These instruments enhance the ability to differentiate risk and allocate it to those investors most able and willing to take it - a process that has undoubtedly improved national productivity growth and standards of living.'

Annexure 1 Various stock futures available on BSE Stock exchange

Source http://www.bseindia.com/derivatives/ind_stockopt.asp

Scrip Code in Cash Segment	Name of Underlying Stock	Underlying Asset Details
532480	Allahabad Bank	ALLBK
521070	Alok Industries Ltd.	ALOK
500101	Arvind Mills Ltd.	ARVML
500477	Ashok Leyland Ltd.	ASHOK
500410	Associated Cement Companies Limited	ACC
500490	Bajaj Auto Limited	BAJAUTO
532134	Bank of Baroda	BOB
532149	Bank of India	BOI
500103	Bharat Heavy Electricals Limited	BHEL
500547	Bharat Petroleum Corporation Limited	BPCL
532454	Bharti Tele-Ventures Ltd.	BTELE

532483	Canara Bank	CANBNK
500040	Century Textiles & Industries Ltd.	CEN
500087	Cipla Limited	CIPLA
500124	Dr.Reddys Laboratories Limited	DRREDDY
532155	Gail India Ltd	GAIL
500300	Grasim Industries Limited	GRASIM
500620	Great Eastern Shipping Co. Ltd.	GESHP
500425	Gujarat Ambuja Cement Limited	GACL
500670	Gujarat Narmada Valley Fertilizers Company Ltd	GNFC
532281	HCL Technologies Limited	HCLTECH
500180	HDFC Bank Ltd.	HDBK
500182	Hero Honda Motors Limited	HEROHON
500440	Hindalco Industries Limited	HNDALCO
500696	Hindustan Lever Limited	HLEVER
500104	Hindustan Petroleum Corporation Limited	HPCL
500010	Housing Development Finance Corporation Limited	HDFCLTD
532466	i-Flex Solutions Ltd	IFLEXSL
532174	ICICI Bank Ltd	ICICIBA
530005	India Cements Ltd.	INCEM
530965	Indian Oil Corporation Ltd	IOCL
532388	Indian Overseas Bank	IOB
500105	Indian Petrochemicals Corporation Ltd.	IPCL
532187	IndusInd Bank Ltd.	INBK
500116	Industrial Development Bank of India Ltd.	IDBI
500209	Infosys Technologies Limited	INFOSYS
532659	Infrastructure Development Finance Company Limited	IDFC
500875	ITC Limited	ITC
532627	Jaiprakash Hydro Power Ltd	JHPL

532617	Jet Airways (India) Ltd.	JET
532286	Jindal Steel & Power Ltd.	JINST
500253	LIC Housing Finance Ltd.	LICHG
500108	Mahanagar Telephone Nigam Limited	MTNL
500520	Mahindra & Mahindra Limited	MAHMAH
532500	Maruti Udyog Ltd	MARUTI
532234	National Aluminium Company Ltd	NALCO
532555	National Thermal Power Corporation Ltd	NTPC
500302	Nicholas Piramal India Ltd.	NICPR
500312	Oil and Natural Gas Corporation Limited	ONGC
524372	Orchid Chemicals & Pharmaceuticals Ltd	ORC
500315	Oriental Bank of Commerce	OBC
532254	Polaris Software Limited	POLARIS
532461	Punjab National Bank	PNBNK
500359	Ranbaxy Laboratories Limited	RANBAXY
500111	Reliance Capital Limited	RCAP
500390	Reliance Energy Limited	RELENRG
500325	Reliance Industries Limited	RIL
500376	Satyam Computer Serivices Limited	SATYAM
523598	Shipping Corporation of India Limited	SCI
500550	Siemens Ltd.	SIEMN
500112	State Bank of India	SBI
500900	Sterlite Industries (India) Ltd	STER
500770	Tata Chemicals Ltd	TCHEM
532540	Tata Consultancy Services Ltd	TCS
500470	Tata Iron & Steel Company Limited	TISCO
500570	Tata Motors Ltd.	TELCO
500400	Tata Power Company Limited	TATAPWR
500800	Tata Tea Limited	TATEA

532477	Union Bank of India	UBI
532215	UTI Bank Ltd.	UTIBK
500483	Videsh Sanchar Nigam Ltd.	VSNL
532401	Vijaya Bank	VIJBK
507685	Wipro Limited	WIPRO

Annexure 2

Contract Specification for Stock Options contracts (Monthly & Weekly Options)

Contract Period	1, 2, 3 months & 1, 2 weeks
Exercise Style	American
Settlement Style	Cash
Tick size	0.05 i.e. 5 paisa
Premium Quotation	Rupees per share
Strike price Intervals	Shall have a minimum of 3 strikes (1 in-the-money, 1 near-the-money, 1 out-of-the-money).
Trading Hours	9:30 a.m. to 3:30 p.m.
Last Trading/Expiration Day	Last Thursday of the contract month in case of monthly & last Friday of contract maturity in case of weekly options. If it is a holiday, then the immediately preceding business day during which the underlying stock market is open for trading. -Note: Business day is a day during which the underlying stock market is open for trading.
Final Settlement	The final settlement of the expiring option contracts would be based on the closing price of the underlying stock. The following algorithm is used for calculating closing value of the individual stocks in the cash segment of BSE including the stocks constituting Sensex:

	-Weighted Average price of all the trades in the last thirty minutes of the continuous trading session. -If there are no trades during the last thirty minutes, then the last traded price in the continuous trading session would be taken as the official closing price.
Exercise Notice Time	It is a specified time (Exercise Session) everyday. All in-the-money options would be deemed to be exercised on the day of expiry unless the participant communicates otherwise in the manner specified by the Derivatives Segment.

Annexure3

- Contract Specification for Index Futures contracts

Contract Period	1, 2, 3 months
Tick size	0.05 index points
Price Quotation	index points
Trading Hours	9:30 a.m. to 3:30 p.m.
Last Trading/Expiration Day	Last Thursday of the contract month. If it is holiday, the immediately preceding business day.Note: Business day is a day during which the underlying stock market is open for trading.
Final Settlement	Cash Settlement. On the last trading day, the closing value of the underlying index would be the final settlement price of the expiring futures contract.

Annexure 4

- Contract Specifications for Single Stock futures

Contract Period	1, 2 & 3 months
Tick size	0.05 points i.e. 5 paisa
Price Quotation	Rupees per share.
Trading Hours	9:30 a.m. to 3:30 p.m.
Last Trading/Expiration Day	Last Thursday of the contract month. If it is holiday, then the immediately preceding business day.Note: Business day is a day during which the underlying stock market is open for trading.
Final Settlement	Cash Settlement. On the last trading day, the closing value of the underlying stock is the final settlement price of the expiring futures contract.

Annexure 5
Screen based trading Terms

Scrip Code	Unique code assigned to a stock of a company by BSE.
Scrip Name	Name of the company
Scrip ID	Short name generally used by the active traders
Chart ICON	Click thru on the ICON, shows intra-day Price/Volume graph
LTP	The last traded price of the stock
Prev. Close	The closing price of the stock for the previous trading day.
Change - Net / %	The difference between today's last trade and the previous close price. The figure here is depicted as absolute change and % change.
Wtd Avg. Price	Sum of value of trades divided by the volume at a given point of time
52 Week High/Low	The highest price for a stock during the past year. The lowest price for a stock during the past year.
Open / High / Low	Opening price for the day; first trade of the day The intra-day high trading price.

	The intra-day low trading price
LTQ / TTQ	Last Traded quantity reported at the Last traded price. Total volume in each stock reported to BSE between the trading hours.
2 WK Avg. Qty	Average of the cumulative trading volume during the last 14 days divided by number of days the stock was traded during this 14 days. It is updated end of day.
Week Ago - Close / Net Change / %	Price of a stock seven days ago, changes calculated in points and percentage terms.If week ago happens to be a non-trading day, no data will be displayed.
Bid Qty / Rate	The quantity and price an investor is willing to pay for a given stock at that point of time
Ask Rate / Qty	The price at which someone who owns a stock offers to sell it with corresponding quantity offered
Circuit Limits	The upper and lower price limits set by the Exchange from time to time as a price containment measure beyond which trading will not be allowed till the prices are normal or limits reset.This is not applicable for stocks that are part of Derivatives segment.
Month Ago - Close / Net Change / %	Price of a stock thirty days ago, changes calculated in points and percentage terms.If month ago happens to be a non-trading day, no data will be displayed.
Group	Scrip part of which group.
VaR+ELM % / Delivery %	Addition of the VaR Margin payable and Extreme Loss Margin Payable, in percentage terms .Data updated end of day for applicable rates for next trading day. Percentage of Delivery as compared to volume traded.Data updated end of day.
Industry	The main business of the Company
Index	Stock part of index. Index is a barometer of market movement.
ND Date - Start/End	Date during which no delivery is required to be given.The last known data is displayed.
Ex-Date	The date on or after which trading in stock begins without entitlement (cash or stock) included in the contract price
Scrip Suspended	Stock under suspension. In case the stock is suspended from trading, the information will be displayed at the bottom of the table.

Annexure 6
Glossary

Basis

The difference in price or yield between two different indices.

Bears Those who believe stock prices will decline. A bear market is one in which prices trend downward.

Bid The bid is the highest price a buyer will pay for a security; the offer is the lowest price at which a security is offered by sellers.

Blocks Large holdings or stock transactions, usually 10,000 shares or more.

Bulls Those who believe the market will rise. A bull market is rising.

Contango (see also Backwardation)

A term often used in commodities or futures markets to refer to markets where shorter-dated contracts trade at a lower price than longer-dated contracts. Plotting the prices of contracts against time, with time on the x-axis, shows the commodity price curve as sloping upwards as time increases

Day Orders Orders to buy or sell that expire if not executed on the same day entered.

Exercise Price (see also Strike Price)

The exercise price is the price at which a call's (put's) buyer can buy (or sell) the underlying instrument

Floor Brokers Exchange members who execute buy and s

Spot

The price in the cash market for delivery using the standard market convention

Strike Price

The price at which the holder of a derivative contract exercises his right if it is economic to do so at the appropriate point in time as delineated in the financial product's contract.

Limit Orders

Orders to buy or sell a stated amount of a security at a specific price or, if obtainable, a better price.

Odd Lots

Amounts of stock less than the established unit of trading, usually 100 shares.

Primary Markets

The primary exchange on which a listed stock trades.

Stops

Orders instructing brokers to buy or sell at the market if and when a stock's price rises or falls to a certain price.

Tick

Direction the price of a stock moved on its last sale. An up-tick means the last trade was at a higher price than the one before it, and a down-tick means the last sale price was lower than the one before it. A zero-plus tick means the transaction was at the same price as the one before, but higher than the nearest preceding different price.

Tickers

Electronic display of the prices and volumes of stock trades worldwide, usually updated within 90 seconds after each transaction.

Closing Purchase

A transaction in which the purchaser's intention is to reduce or eliminate a short position in a given series of options.

Closing Sale

A transaction in which the seller's intention is to reduce or eliminate a long position in a given series of options.

Covered Call Option Writing

A strategy in which one sells call options while simultaneously owning an equivalent position in the underlying security.

Covered Put Option Writing

A strategy in which one sells put options and simultaneously is short an equivalent position in the underlying security.

Derivative Security

A financial security whose value is determined in part from the value and characteristics of another security, the underlying security.

Equity Options

Options on shares of an individual common stock.

Exercise

To implement the right under which the holder of an option is entitled to buy (in the case of a call) or sell (in the case of a put) the underlying security.

Exercise Settlement Amount

The difference between the exercise price of the option and the exercise settlement value of the index on the day an exercise notice is tendered, multiplied by the index multiplier.

Expiration Cycle

An expiration cycle relates to the dates on which options on a particular underlying security expire. A given option, other than LEAPS, will be assigned to one of three cycles, the January cycle, the February cycle or the March cycle At any point in time, an option will have contracts with four expiration dates outstanding, the two near-term months and two further-term months.

Expiration Date

The day in which an option contract becomes void. All holders of options must indicate their desire to exercise, if they wish to do so, by this date.
EXPIRATION TIME: The time of day by which all exercise notices must be received on the expiration date.

Hedge

A conservative strategy used to limit investment loss by effecting a transaction which offsets an existing position.

Holder

The purchaser of an option.

Buy Open
Means a buy transaction, which will have the effect of creating or increasing a long position.

Clearing Member
Clearing Member means a Member of the Clearing Corporation.

Closing buy transaction
Means a buy transaction, which will have the effect of partly or fully offsetting a short position.

Closing sell transaction
Means a sell transaction, which will have the effect of partly or fully offsetting a long position.

Constituent
A constituent means a person, on whose instructions and, on whose account, the Trading Member enters into any contract for the purchase or sale of any security or does any act in relation thereto.

Contract Month
Contract month means the month in which a contract is required to be finally settled.

Derivatives Contract
A contract that derives its value from the prices of underlying securities.

Expiration Day
The day on which the final settlement obligation are determined in a Derivatives Contract.

Futures Contract
Means a firm contractual agreement to buy or sell the underlying security in the future.

Last Trading Day
Means the day up to and on which a Derivatives Contract is available for trading.

Long Position
Long Position in a Derivatives contract means outstanding purchase obligations in respect of a permitted derivatives contract at any point of time.

Open Position
Open position means the sum of long and short positions of the Member and his constituent in any or all of the Derivatives Contracts outstanding with the Clearing Corporation.

Open Interest
Open Interest means the total number of Derivatives Contracts of an underlyingsecurity that have not yet been offset and closed by an opposite Derivatives transaction nor fulfilled by delivery of the cash or underlying security or option exercise. For calculation of Open Interest only one side (either the long or the short) of the Derivatives Contract is counted.

Options Contract
Options Contract is a type of Derivatives Contract, which gives the buyer / holder of the contract the right (but not the obligation) to buy / sell the underlying security at a predetermined price within or at end of a specified period. The option contract that gives a right to buy is called a Call Option and the option contract that gives a right to sell is called a Put Option.

Option Holder
Option Holder means a Trading Member who is the buyer of the Options Contracts.

Option Writer
Option Writer means a Trading Member who is the seller of the Options Contracts.

Outstanding Obligation
Means the obligation which has neither been closed out nor been settled.

Permitted Derivatives Contract
Permitted Derivatives Contract is a derivative contract, which is permitted to be traded on the Futures & Options segment of the Exchange.

Regular lot / Market Lot
Means the number of units that can be bought or sold in a specified derivatives contract and it is also termed as Contract Multiplier.

Risk Disclosure Document
Refers to the document to be issued to all potential investors at the time of registration for disclosure of the risks inherent to derivatives.

Settlement Date
Means the date on which the settlements of outstanding obligations in a permitted Derivatives contract are required to be settled.

Sell Open
Means a sell transaction, which will have the effect of creating or increasing a short position.

Short Position
Short position in a derivatives contract means outstanding sell obligations in respect of a permitted derivatives contract at any point of time.

Trading cycle
Trading cycle means the period during which the derivatives contract will be available for trading.

Trading Member
Trading Member is a member of Derivative Exchange.

Trading cum Clearing MemberMeans Member of Derivatives Exchange as well as its Clearing Corporation.

Trade Type
Trade type is the type of trade as may be permitted by the F&O Segment of the Exchange from time to time for each Market Type.

Underlying Securities

Means a security with reference to which a derivatives contract is permitted to be traded on the Futures & Options segment of the Exchange from time to time

Contract Size - is the value of the contract at a specific level of Index. It is Index level * Multiplier.

Multiplier - It is a pre-determined value, used to arrive at the contract size. It is the price per index point.

Tick Size - It is the minimum price difference between two quotes of similar nature.

Contract Month - is the month in which the contract will expire.

Expiry Day - is the last day on which the contract is available for trading.

Open interest - it's the total outstanding long or short positions in the market at any specific point in time. As total long positions for market would be equal to total short positions, for calculation of open Interest, only one side of the contracts is counted.

Volume - Number of contracts traded during a specific period of time - During a day, during a week or during a month.

Useful Websites

- Bombay stock exchange - www.bse.com

- National Stock Exchange - www.nse.com
- Securities Exchange Board of India - http://www.sebi.gov.in/
- Inter connected Stock Exchange of India- http://www.iseindia.com/
- Reserve Bank Of India- http://www.rbi.org.in/home.aspx
- Finance Ministry In India- http://finmin.nic.in/
- Multi Commodity Exchange India- http://www.mcxindia.com/
- National Commodity Derivative Exchange- http://www.ncdex.com/
- NASDAQ stock Market- http://www.nasdaq.com/
- U.S. Securities and Exchange Commission- http://www.sec.gov
- Bank for International settlements- http://www.bis.org/
- New York Stock Exchange http://www.nyse.com/
- Chicago Board Of Trade http://www.cbot.com/
- World Bank - http://www.worldbank.org/
- Bare Act on Securities Contract(Regulation) Act 1956 by SEBI : http://www.sebi.gov.in/acts/SecuritiesContractAct.html