

**AN INSIGHT INTO DERIVATIVE MARKETS: INDIAN PERSPECTIVE**Sunil Kumari\*

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**ABSTRACT**

*Financial markets are, by nature, extremely volatile and hence the risk factor is major concern for financial agents. Often, in financial markets, volatility is measured and reported (statistically) as annualized value of standard deviation of natural logarithms of daily returns generated over a fixed number of days, on rolling basis. This number is also used as a proxy for uncertainty and/ or risk. As uncertainty about future goes down volatility is expected to go down, however as mentioned as earlier as response/ reaction time becomes shorter, volatility is expected to increase. However in the equilibrium, a state of final turbulence could prevail. To reduce the risk, the concept of derivatives comes into picture. Last decade was one of the eventful decades in the international markets. On one side, just a few derivatives disaster stories were enough to bring entire business of derivatives under the limelight, make every one worry about unknown risk associated with derivatives, and elevate derivatives into mysterious 'something'; while on the other side, there were people who started understanding the derivatives and used the derivatives for hedging and mitigating the risks while adding liquidity to the markets.*

*This study attempts to discuss the genesis of derivatives trading by tracing its historical developments, types of traded derivatives products, regulation and policy developments, trend and growth, future prospects and challenges of derivative market in India.*

**Keywords:** *Derivative Markets, NSE, BSE, Derivative Instruments.*

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\* Chartered Finance Analyst at corporate and C.A. Trainee under ICAI, Delhi

## INTRODUCTION

Capital market is one of the most important sectors of the financial system of any country as it has a direct impact on the development of the country. Risk is the main feature of any capital market as well as commodity market. The complex nature of financial structuring has exposed corporates to newer types of risks such as exchange risk, interest rate risk, market risk, inflation risk etc. Business activities are increasing day by day and are resulting in increase magnitude and frequency of above mentioned risks. The biggest challenge that Indian corporates are facing today is to protect their operating profits from these risks. Hence risk management has become very essential for corporate houses in order to survive.

Derivatives have emerged as an important tool for risk management in developed nations. Their extraordinary growth has been one of the remarkable developments in the financial markets. Derivatives are the financial instruments that derive their value from some underlying variable. Forward, Futures, Options and Swaps are some of the most simple, common and widely used derivatives across the world.

This study attempts to discuss the genesis of global derivative industry by tracing its historical developments, types of traded derivatives products, regulation and policy developments, trend and growth, future prospects and challenges of derivative market in India.

## OBJECTIVES OF THE STUDY

- To trace the historical developments in derivative market in India.
- To study the types of derivatives traded in Indian markets.
- To assess the regulations and policies framed in regard of developments of derivative market in India.
- To know the future prospect and challenges of derivative markets in India.

## RESEARCH METHODOLOGY

### Research Type:

. This study is descriptive in nature.

### Source of Data:

This study is mainly based on secondary data gathered from various newspapers, magazines, journals, and websites..

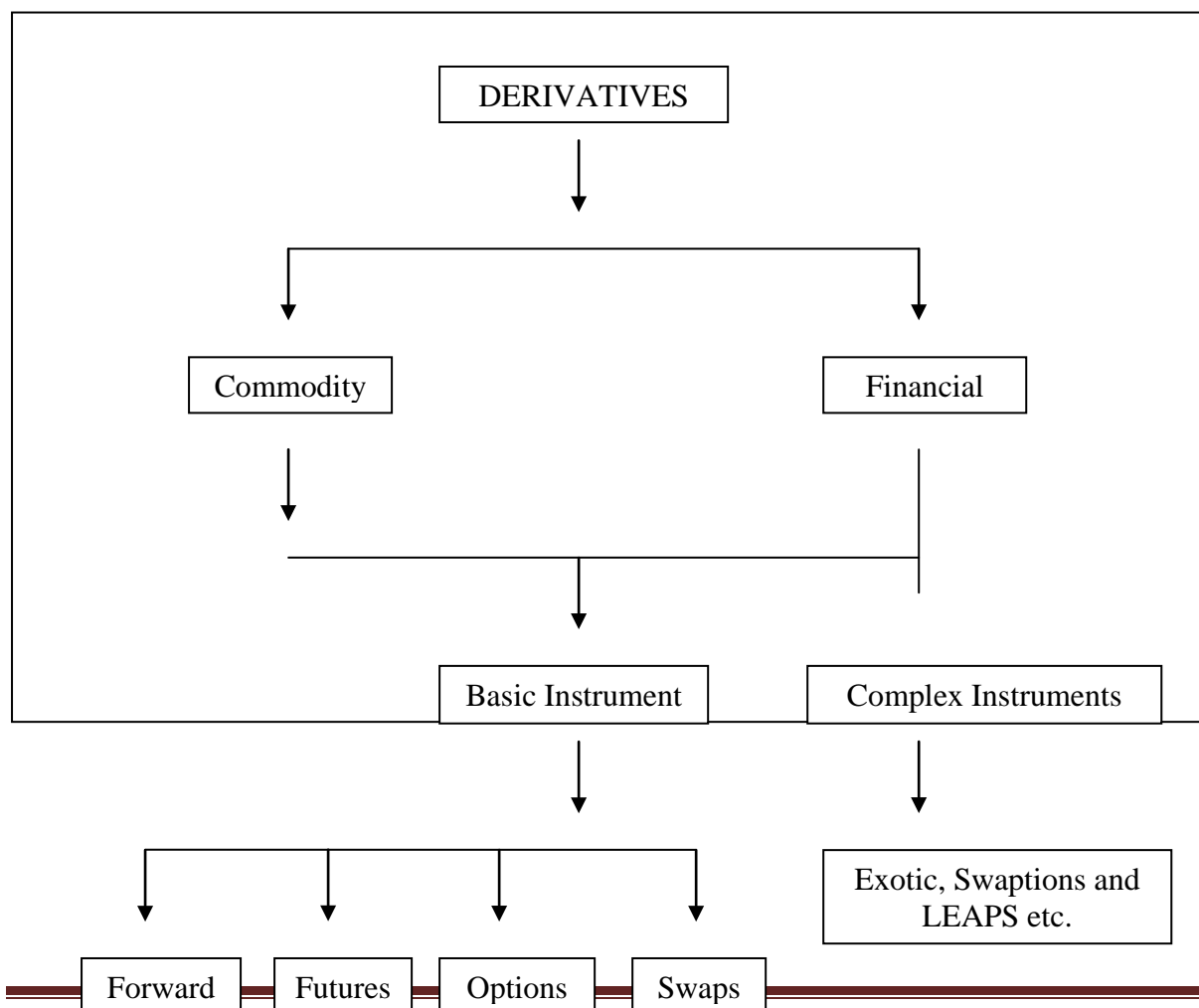
## CONCEPT OF DERIVATIVE

General definition of derivative is to derive something from something else. It can be defined in two manners as below:

**(a) Derivative as a function:** the result of mathematical differentiation; instantaneous change of quantity relative to another;  $df(x)/dx$ .

**(b) Derivative as an instrument:** Derivatives are the instruments whose values are derived from one or more basic variables called bases. These bases can be underlying assets (for example forex, equity etc.), bases or reference rates. For example, wheat farmers may wish to sell their harvest at a future date to eliminate the risk of change in prices by that date. The transaction in this case would be derivative, while the spot price of wheat would be underlying asset. Figure 1 indicates the various types of derivatives traded in stock market.

**Figure 1: Categorization of Derivatives**



## UNDERLYING ASSETS IN A DERIVATIVE CONTRACTS

As defined above, the value of derivative instrument depends upon the underlying asset.

Following may be underlying assets:

- Commodities including grain, coffee beans, orange juice etc.
- Precious metals like gold silver, diamond etc.
- Foreign exchange rates or currency.
- Negotiable debt instruments like bonds, debentures etc.
- Share and share warrants of companies listed in stock exchange.
- Short term securities such as T-Bills, and
- Over- the counter money market instruments like loan and deposits etc.

## TYPES OF DERIVATIVES

All derivatives can be classified based on the following features;

**(a) Nature of contract:** Based on the nature of contract, derivatives can be classified into three categories:

- Forward Rate Contracts and Futures,
- Options, and
- Swaps.

The nature of contract sets upon the right and obligations of both the position to the contract.

**(b) Underlying Asset:** Most derivatives are based on one of the following four types of assets:

- Foreign Exchange,
- Interest bearing financial assets,
- Commodities, and
- Equities.

There can be a contract which is similar in all respects except for the underlying asset. Thus an option contract can exist in currency or a stock. Similarly, a future contract can exist on commodity or on a currency.

**(c) Market Mechanism**

- OTC products, and
- Exchange Traded products

## PARTICIPANTS IN DERIVATIVE MARKETS

While participants can be banks, FIs, Corporates, Brokers, Individuals, etc., all of these can be classified into three categories:

- **Hedgers:** They use the derivatives for the purpose of either plummeting or eliminating the risk associated with the price of an asset.
- **Speculators:** They use derivatives to get extra leverage by laying a bet on the future movements in the price of an asset. These types of people voluntarily accept what hedgers want to avoid.
- **Arbitrageurs:** They use the derivatives primarily for the purpose of taking the advantage of inconsistency between the prices of an asset prevailing in two markets, by taking the opposite positions.

## Economic Functions of Derivative Market

The Derivative market perform a number of economic functions which are listed below:

- They help in transferring risks from risk adverse people to risk oriented people.
- They help in the discovery of future as well as current prices.
- They catalyze entrepreneurial activity.
- They increase the volume traded in markets because of participation of risk. adverse people in greater numbers.
- They increase savings and investment in the long run Advertisement.

## Types of Derivative Instruments Available in India

There are many derivative products which are traded in Indian stock exchanges either in BSE as or in NSE. Basically following derivative instruments are available for trading in India:

- **Forwards:** It is customized contract between two parties, where the settlement takes place on a specific date in the future at the contract price.
- **Futures:** It is agreement between two parties to exchange commodity or financial asset for a certain consideration after a specified period. These types of contracts are exchange- traded.
- **Options:** It is type of contract which provides the buyer the right but not the obligation, to buy or sell a specific asset or commodity at a specific price, on or before any time prior to the specific date.
- **Warrants:** Options with longer maturity are referred to as warrants.

- **Baskets:** These are the options on portfolio of underlying assets.
- **Swaps:** It is a contract whereby the parties agree to exchange a predetermined series of payments, or exchange interest payments or one set of interest payment (fixed with floating or vice-versa) with another, for a specified time.

### **HISTORY AND DEVELOPMENT OF DERIVATIVE MARKET IN INDIA**

Commodity derivative market has a long history in India. Way back in 1875, Bombay Cotton Traders Association had set up first commodity futures exchange of India in Mumbai. In 1918 a clearing house responsible for clearing and settlement of the trade was established. The early 1990s saw establishment of oilseeds future market and wheat futures market in 1913 at Hapur. Future market for jute was set up in Calcutta in 1912, and in 1920 bullion futures market came into existence in Mumbai.

Serious attempts have been made to introduce derivative instruments in Indian capital markets. However the question of large scale introduction of derivative securities in Indian capital market is a debatable issue. Although derivatives were present in Indian markets since quite long, but their development until recent years had been slow. Like future derivatives equity derivatives also have had a long history in India but in OTC market.

In 1956, Securities & Contract regulation Act (SCRA) has restricted trading in all kinds of option. But in 1995, the Securities Law (Amendments) Ordinance withdrew the restriction on option in securities. On November 18, 1996, SEBI constituted a committee under the chairmanship of Dr. L.C.Gupta to develop a regulatory framework applicable to trading of securities can also govern trading of derivatives.

Regulators allowed derivative trading in Indian markets in a very phased manner so that investors and traders get sufficient time to get used to the new financial instruments. In May 2000, SEBI finally gave approval for derivative trading in India and June 2000 trading in derivatives formally started at the NSE and BSE. CNX Nifty and BSE Sensex launched Index futures in the year 2000. June 2001 witnessed trading in derivatives on individual securities. Futures contracts on individual stocks came in November 2001.

RBI had appointed the OP Sodhani committee for developing guidelines for synthetic derivatives in forex market. The committee submitted its report in 1995. Some products like interest rate swaps, coupon swaps, currency swaps and fixed rate agreements are now available but on a limited scale. The derivative products currently available in forex market are the OTC products which are between two parties and are very flexible. In April 1997,

RBI permitted banks and corporates to deal in swaps without its permission for tenure over six months. However, speculative trading is not permitted in Forward Rate agreements. Banks are not permitted to take a position which is not backed by any underlying trade transaction.

Systematic developments discussed above clearly indicate that both regulators and exchanges are not only forward looking but are cautious and vigilant to ensure smooth growth of the derivatives market. Derivatives are making an effort to fill the gap in the Indian market which lacks alternative margining or shorting or carry forward products. Trade volumes on exchange traded derivatives are growing with a robust speed. Average daily volumes are over Rs. 15,000 cr. with open interest average volumes over Rs. 10,000 cr.

SEBI has adopted a liberalized policy with respect to the criteria for selection of

It is really very interesting to note that retail participants account for a major share in derivative market and this 40% comes from Mumbai. Institutional participation has also shown good performance with an average of more than Rs. 400 cr. per day (as on march 2005). Although institutions account for only 3 to 4% of total volumes they account for 15 to 20% of the open interest. The reason behind it is that the turnover from institutions tends to be lower than that from non institutional participants. Nifty futures and single stock futures are the favorites of the market with sometimes accounting for over 80% of the total volumes. The reason for volumes in Nifty futures during the year is the increased intraday volatility in the spot market that provides attractive trading opportunities to day traders. So we can say that derivative markets in India have a long history from its origin to current position as shown in Table 1 whereas Table 2 and Table 3 show the continuous increase in turnover in derivatives traded in NSE and BSE respectively, which indicates the tremendous growth in derivative markets in India. In addition to this figure 2 shows product wise turnover of Futures and Options traded in NSE from 2000 to 2009 in which index futures are the major part in aggregate turnover.

**Table 1: Derivative in India: A Chronology**

Date	Progress
14 December, 1995	NSE asked SEBI for permission to trade index futures
18 November 1996	SEBI set up L.C. Gupta committee to draft a policy framework index futures
11 May, 1998	L.C. Gupta committee submitted report.
7 July, 1999	RBI gave permission for OTC forward rate agreements and interest

	rate swaps.
24 May, 2000	SIMEX chose Nifty for trading futures and options on an Indian index.
25 May, 2000	SEBI gave permission to NSE and BSE to do index future trading.
9 June, 2000	Trading of BSE Sensex futures commenced at BSE.
12 June, 2000	Trading of Nifty futures commenced at NSE.
31 August, 2000	Trading of futures and options on Nifty to commence at SIMEX.
June 2001	Trading of Equity Index Options at NSE.
July 2001	Trading of Stock Options at NSE.
November 9, 2002	Trading of Single Stock Futures at BSE.
June 2003	Trading of Interest Rate Futures at NSE.
Sept. 13, 2004	Weekly Options at BSE.
January 1, 2008	Trading of Chhota (mini) Sensex at BSE.
January 1, 2008	Trading of Mini Index Futures and Options at NSE.
August 29, 2008	Trading of Currency Futures at NSE.
October 2, 2008	Trading of Currency Futures at BSE.
November 27, 2008	A clearing and settlement arrangement on a non-guaranteed basis was put in place for the OTC interest rate derivatives trades.
March 2009	13 members participated in the non-guaranteed settlement of OTC rupee interest-rate derivatives.
January 8, 2010	SEBI standardizes lot size for equity derivatives.
March 6, 2010	SEBI for physical delivery in equity derivatives segment.
August 10, 2010	Currency futures opened for NBFCs.
September 20, 2010	USE to begin currency futures trading.

**Source:** Compiled from BSE and NSE

**Table 2: NSE Derivatives Segment Turnover (Rs. in Billion)**

Year	Index Futures	Stock Futures	Index Options	Stock Options	Total Turnover
2009-10	39,343.89	51,952.47	80,279.64	5,060.65	176,636.65
2008-09	33,501.11	34,796.42	37,315.02	2,292.27	107,904.82
2007-08	38,206.67	75,485.63	13,621.11	3,591.37	130,904.78



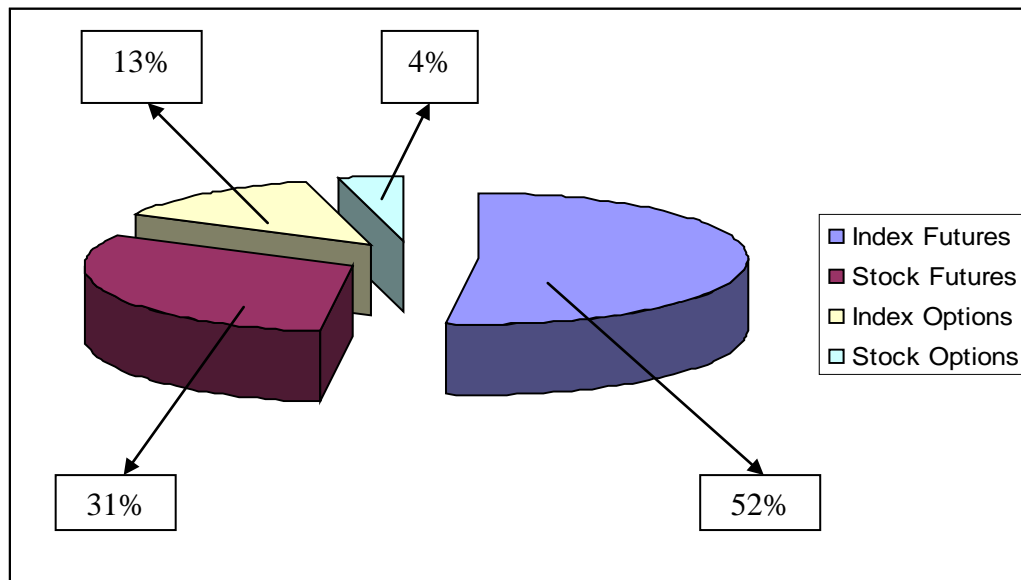
2006-07	25,395.74	38,309.67	7,919.06	1,937.95	73,562.42
2005-06	15,137.55	27,916.97	3,384.69	1,802.53	48,241.74
2004-05	7,721.47	14,840.56	1,219.43	1,688.36	25,469.82
2003-04	5,544.46	13,059.39	528.16	2,172.07	21,304.08
2002-03	439.52	2,865.33	92.46	1,001.31	4,398.62
2001-02	214.83	515.15	37.65	251.63	1,019.26
2000-01	23.65	-	-	-	23.65

**Source:** Compiled from NSE website

**Table 3: BSE Derivatives Segment Turnover (Rs. in Billion)**

Year	Index Futures	Stock Futures	Index Options		Stock Options		Total
			Call	Put	Call	Put	
2009-10	960	0	1,380	0	0	0	2,340
2008-09	117,570	90	60	30	0	0	117,750
2007-08	2,346,600	76,090	310	80	0	0	2423,080
2006-07	554,910	35,150	0	0	0	0	590,060
2005-06	50	10	30	0	0	0	90
2004-05	136,000	2,130	14,710	8,270	20	0	161,130
2003-04	65,720	51,710	0	0	1,740	1,570	120,740
2002-03	18,110	6,440	10	0	210	0	24,770
2001-02	12,760	4,520	390	450	790	350	19,260
2000-01	16,730	—	—	—	—	—	16,730

**Source:** Compiled from BSE website and various issues of SEBI bulletins

**Figure 2: Product wise Turnover of F & O at NSE from 2000-2009**

**Source:** Author's calculation based on data compiled from NSE

### Challenges and Opportunities in Indian Market

In India, there has been a phenomenal growth in derivative market in the last few years. However, there is still a long way to go. Institutional participation is still very low for a number of reasons, the prime one amongst them is the position limit cap imposed by the regulator on FIIs. Each FIIs gross exposure in an index product is restricted to a max of 15% of the open interest or Rs. 100 cr. The limit for single stock product is 20% of the market wide limit or Rs. 50 cr., whichever is lower.

Since an FII having a large exposure to Indian market can only hedge a portion of his exposure because of restrictive limit specified many FII prefer not to hedge their exposure at all rather than hedge a small position of their portfolio. These restrictive limits were laid down in 2002, which need to be revised since market conditions have changed a lot. Moreover, there are a number of FIIs who are active participants abroad and wish to play in Indian markets are unable to get FII registration under current regulation. Thus it is essential

that position limits of FIIs be increased and a wider set of participants to increase the depth of the market and improve pricing mechanism are allowed.

Trading in options, which has remained relatively low will also increase. FII investment in spot equities will also move up if they get the confidence of hedging their positions in a liquid derivative market. Domestic players have negligible participation in derivative market because existing regulations do not permit them to use derivatives to hedge their portfolios.

Another hurdle towards the growth of derivatives is the overall cap on the total gross position in any underlying asset, which is currently set at the lower of 30 times average daily volume in the stock or 10% of free float. It is very essential that this limit also to be revised.

Indian debt markets are used to trading on a YTM basis whereas interest rate futures are settled on the basis of zero coupon yield curve. It is because of this reason that interest rate futures have not become popular till date. Banks, which are major players in fixed income market, have been permitted to use futures only for hedging. This poses a restriction on their participation. Also, there is a need for clarity regarding accounting and taxation.

## **RECOMMENDATIONS & SUGGESTIONS**

- Contract size should be minimized because small investors cannot afford this much of huge premiums.
- RBI should play a greater role in supporting derivatives.
- Derivatives market should be developed in order to keep it at par with other derivative markets in the world.
- Speculation should be discouraged.
- There must be more derivative instruments aimed at individual investors.
- SEBI should conduct seminars regarding the use of derivatives to educate individual investors.
- After study it is clear that Derivative influences our Indian Economy up to much extent. So, SEBI should take necessary steps for improvement in Derivative Market so that more investors can invest in Derivative market.
- There is a need of more innovation in Derivative Market because in today scenario even educated people also fear for investing in Derivative Market Because of high risk involved in Derivatives.

## **CONCLUSION**

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A development in the derivative markets is still in an ascent stage and there is great scope for further development. But there are serious doubts about secular developments as Indian markets are still very narrow, shallow and rely more on the mercy of manipulators and speculators. In order to achieve good derivative market operations regulators and exchanges in consultation with market participants should come up with necessary regulatory changes, which are friendly to all. Apart from this what is more required is that players should have a strong financial base to deal in derivative contracts, proper capital adequacy norms, training for financial intermediaries and brokers. Well-developed indices are some other areas, which need attention. International experiences have popularized these products. India has just begun its voyage in the derivative arena and one hope that it will outperform other markets in the years to come.

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