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**DEVELOPMENT OF DERIVATIVES MARKET IN INDIA – AN OVERVIEW****Dr. Soumitra Chandra**

Assistant Professor in Commerce

Veer Bahadur Singh Govt Degree College, Campierganj, Gorakhpur, Uttar Pradesh

**Abstract**

The valor of economy depends upon various factors of the economy. The performance of stock market/secondary market is the best indicator of a sound economy. In recent years, the volatility in Indian stock market is creeping with dangers signals. Volatility in stock market is desirable for some extent to attract the new investors' community to invest in the market. But, many research studies exhibit that there is excess volatility in Indian stock market. Unless, market regulators take appropriate steps to curb the excess volatility, the investor will be the scapegoat. In India, derivatives trading were introduced with such an intention to curb the excess volatility. Derivatives are financial instruments which hedge the risk of a particular financial asset so that an investor can minimize his risk associating with his/her investment. There is a perception that derivatives are the best panacea to curb the excess volatility in the stock market. In this junction an earnest attempt is made to analyze the development of derivatives market in Indian context.

**Key words:** Stock market, volatility, derivatives, risk and return, hedge the risk

**Introduction:** The ever-growing market integration of the financial markets due to globalization has made our financial institutions, banks more vulnerable to market risk. It is known fact that increased cross-board flow of funds has further complicated the scenario. The derivative markets in India have been going through a reform process over the last one and halfdecade and have witnessed significant growth in terms of size, product profile, nature of participants and the development of market infrastructure across all segments – equity markets, debt markets and forex markets. At present, Indian market is having a variety of derivatives such as forwards, swaps and options. The main objectives of these instruments are for hedging their interest rate as well as currency risk and the markets for these are quite deep and liquid. Interest rate derivatives such as Interest Rate Swaps (IRS), and Forward Rate Agreements (FRA) were introduced in 2000. Trading in equity derivatives such as stock index futures and options, futures and options on underlying stocks, etc. have been introduced since June 2000. At present, size of equity linked derivatives is significantly higher as compared to cash segment. Indian forex derivative markets have also developed significantly over the years. The daily average turnover has gone up from about USD 5 billion per day in 1998 to more than USD 50 billion per day in 2008. The heart core aim of introduction of derivative markets in any financial market is to hedge the risk involved in a particular investment. Some studies were revealed that there is no greater influence on financial markets in connection to curb the risk associating with a financial asset. On the other hand, some studies showed that derivatives were successfully hedging the risk in investment. In this context we maintain status quo.

The present study attempts to discuss the genesis of derivatives trading by looking at its historical development, different types of derivative instruments, and trends in derivatives market India. The study is organized into three sections. Section I deals with the concept and definition, features and types of financial derivatives, the development of derivatives market has been discussed in Section II. The last section concludes with summary and concluding remarks.

## SECTION-I

### Concept of Derivatives

The term 'derivatives', refers to a broad class of financial instruments which mainly include options and futures. These instruments derive their value from the price and other related variables of the underlying asset. They do not have worth of their own and derive their value from the claim they give to their owners to own some other financial assets or security. A simple example of derivative is butter, which is derivative of milk. The price of butter depends upon price of milk, which in turn depends upon the demand and supply of milk. The general definition of derivatives means to derive something from something else. The asset underlying a *derivative* may be commodity or a financial asset. Section 2(ac) of Securities Contract Regulation Act (SCRA) 1956 defines Derivative as: a) 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; b) a contract which derives its value from the prices, or index of prices, of underlying securities.

#### 1.1 Underlying assets in derivatives contract

Underlying asset may assume many forms: (i) Commodities including grain, coffee beans, orange juice; (ii) Precious metals, such as gold and silver; (iii) Foreign exchange rates or currencies; (iv) Bonds of different types, including medium to long term negotiable debt securities issued by governments, companies, etc; (v) Shares and share warrants of companies traded on recognized stock exchanges and Stock Index; (vi) Short term securities such as T-bills, and (vii) Over-the Counter (OTC)<sup>1</sup> money market products such as loans or deposits.

#### 1.2 Players in derivatives market

Mainly, there are three types of derivative market players.

**Hedgers:** They use derivatives markets to reduce or eliminate the risk associated with price of an asset. Majority of the participants in derivatives market belongs to this category

**Speculators:** They transact futures and options contracts to get extra leverage in betting on future movements in the price of an asset. They can increase both the potential gains and potential losses by usage of derivatives in a speculative venture.

**Arbitrageurs:** Their behaviour is guided by the desire to take advantage of a discrepancy between prices of more or less the same assets or competing assets in different markets. If, for example, they see the futures price of an asset getting out of line with the cash price, they will take offsetting positions in the two markets to lock in a profit.

#### 1.3 Applications of financial derivatives

<sup>1</sup>Over-the-counter security is a security which is not traded on an exchange, usually due to inability to meet listing requirements. For such securities, broker/dealers negotiate directly with one another over computer networks and by phone. In OTC market security transactions are made via telephone and computer rather than on floor of exchange.

Some of the applications of financial derivatives can be enumerated as follows:

**a) Management of risk:** This is most important function of derivatives. Risk management is not about the elimination of risk rather it is about the management of risk. Financial derivatives provide a powerful tool for limiting risks that individuals and organizations face in the ordinary conduct of their businesses. It requires a thorough understanding of the basic principles that regulate the pricing of financial derivatives. Effective use of derivatives can save cost, and it can increase returns for the organizations.

**b) Efficiency in trading:** Financial derivatives allow for free trading of risk components and that leads to improving market efficiency. Traders can use a position in one or more financial derivatives as a substitute for a position in the underlying instruments. In many instances, traders find financial derivatives to be a more attractive instrument than the underlying security. This is mainly because of the greater amount of liquidity in the market offered by derivatives as well as the lower transaction costs associated with trading a financial derivative as compared to the cost of trading the underlying instrument in cash market.

**c) Speculation:** This is not the only use, and probably not the most important use, of financial derivatives. Financial derivatives are considered to be risky. If not used properly, these can lead to financial destruction in an organization like what happened in Barings Plc. However, these instruments act as a powerful instrument for knowledgeable traders to expose themselves to calculated and well understood risks in search of a reward, that is, profit.

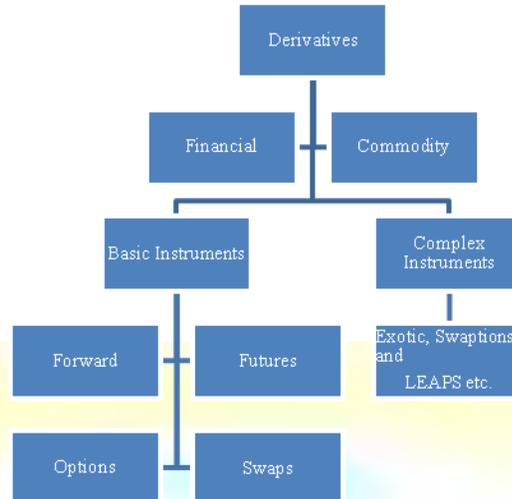
**d) Price discover:** Another important application of derivatives is the price discovery which means revealing information about future cash market prices through the futures market. Derivatives markets provide a mechanism by which diverse and scattered opinions of future are collected into one readily discernible number which provides a consensus of knowledgeable thinking.

**e) Price stabilization function:** Derivative market helps to keep a stabilising influence on spot prices by reducing the short-term fluctuations. In other words, derivative reduces both peak and depths and leads to price stabilisation effect in the cash market for underlying asset.

#### 1.4 Classification of derivatives

Broadly derivatives can be classified into two categories as shown in Fig.1: Commodity derivatives and financial derivatives. In case of commodity derivatives, underlying asset can be commodities like wheat, gold, silver etc., whereas in case of financial derivatives underlying assets are stocks, currencies, bonds and other interest rates bearing securities etc. Since, the scope of this case study is limited to only financial derivatives so we will confine our discussion to financial derivatives only.

**Figure 1: Classification of Derivatives**



## SECTION-II

### Genesis of derivatives market in India

The concept of derivatives is not new for Indian financial market. It has been in existence in some form or other since longtime. In the area of commodities, the Bombay Cotton Trade Association started futures trading in 1875 and, by the early 1900s India had one of the world's largest futures industries<sup>1</sup>. In 1952 the government banned cash settlement and options trading and derivatives trading shifted to informal forwards markets. In recent years, government policy has changed, allowing for an increased role for market-based pricing and less suspicion of derivatives trading.

The present form of derivatives trading in India has taken in 1995 by introduction of financial derivatives trading in India was the promulgation of the Securities Laws (Amendment) Ordinance, 1995. It provided for withdrawal of prohibition on options in securities. The last decade, beginning the year 2000, saw lifting of ban on futures trading in many commodities. Around the same period, national electronic commodity exchanges were also set up. Derivatives trading commenced in India in June 2000 after SEBI granted the final approval to this effect in May 2001 on the recommendation of L. C Gupta committee. Securities and Exchange Board of India (SEBI) permitted the derivative segments of two stock exchanges, NSE and BSE, and their clearing house/corporation to commence trading and settlement in approved derivatives contracts. Initially, SEBI approved trading in index futures contracts based on various stock market indices such as, S&P CNX, Nifty and Sensex. Subsequently, index-based trading was permitted in options as well as individual securities.

The trading in BSE Sensex options commenced on June 4, 2001 and the trading in options on individual securities commenced in July 2001. Futures contracts on individual stocks were launched in November 2001. The derivatives trading on NSE commenced with S&P CNX Nifty Index futures on June 12, 2000. The trading in index options commenced on June 4, 2001 and trading in options on individual securities commenced on July 2, 2001. Single stock futures were launched on November 9, 2001. The index futures and options contract on NSE are based on S&P CNX. In June 2003, NSE introduced Interest Rate Futures which were subsequently banned due to pricing issue.

### 1.5 Regulation of derivatives trading in India

The regulatory framework in India is based on the L.C. Gupta Committee Report, and the J.R. Varma Committee Report. It is mostly consistent with the IOSCO5 principles and addresses the common concerns of investor protection, market efficiency and integrity and financial integrity. The L.C. Gupta Committee Report provides a perspective on division of regulatory responsibility between the exchange and the SEBI. It recommends that SEBI's role should be restricted to approving rules, byelaws and regulations of a derivatives exchange as also to approving the proposed derivatives contracts before commencement of their trading. It emphasises the supervisory and advisory role of SEBI with a view to permitting desirable flexibility, maximizing regulatory effectiveness and minimizing regulatory cost. Regulatory requirements for authorization of derivatives brokers/dealers include relating to capital adequacy, networth, certification requirement and initial registration with SEBI. It also suggests establishment of a separate clearing corporation, maximum exposure limits, mark to market margins, margin collection from clients and segregation of clients' funds, regulation of sales practice and accounting and disclosure requirements for derivatives trading. The J.R. Varma committee suggests a methodology for risk containment measures for index-based futures and options, stock options and single stock futures. The risk containment measures include calculation of margins, position limits, exposure limits and reporting and disclosure.

### 1.6 Development of derivatives market in India

Equity derivatives market in India has registered an "explosive growth" and is expected to continue the same in the years to come. Introduced in 2000, financial derivatives market in India has shown a remarkable growth both in terms of volumes and numbers of traded contracts. NSE alone accounts for 99 percent of the derivatives trading in Indian markets. The introduction of derivatives has been well received by stock market players. Trading in derivatives gained popularity soon after its introduction. In due course, the turnover of the NSE derivatives market exceeded the turnover of the NSE cash market. For example, in 2008, the value of the NSE derivatives markets was Rs. 130,90,477.75 Cr. whereas the value of the NSE cash markets was only Rs. 3,551,038 Cr. If we compare the trading figures of NSE and BSE, performance of BSE is not encouraging both in terms of volumes and numbers of contracts traded in all product categories. Among all the products traded on NSE in F& O segment, single stock futures also known as equity futures, are most popular in terms of volumes and number of contract traded, followed by index futures with turnover shares of 52 percent and 31 percent, respectively (Fig. 3). In case of BSE, index futures outperform stock futures. An important feature of the derivative segment of NSE which may be observed from Table 6 and Table 7 is the huge gap between average daily transactions of its derivatives segment and cash segment. In sharp contrast to NSE, the situation at BSE is just the opposite: its cash segment outperforms the derivatives segment as can be seen from Table 10. Despite of encouraging growth and developments, industry analyst feels that the derivatives market has not yet, realized its full potential in terms of growth & trading. Analysts points out that the equity derivative markets on the BSE and NSE has been limited to only four products- index futures, index options and individual stock futures and options, which in turn, are limited to certain select stocks only. Although recently NSE and BSE has added more products in their derivatives segment (Weekly Options, Currency futures, Mini Index etc.) but still it is far less than the depth and variety of products prevailing across many developed capital markets.

As of now, the number of instruments available in derivatives has been expanded. To begin with, SEBI only approved trading in index futures contracts based on Nifty 50 Index and BSE-30 (Sensex) Index. This was followed by approval for trading in options based on these indices and options on individual securities. The total exchange traded derivatives in Indian stock markets witnessed a value of Rs.110, 227,500 million (US \$ 2,163,445 million) during 2008-09 as against Rs. 133,327,869 million (US \$ 3,335,698 million) during the preceding year. NSE proved itself as the market leader contributing 99 % of the total turnover in 2008-09 in India. Not only in Indian scenario, but also in the global market NSE has created a niche for itself in terms of derivatives trading in various instruments<sup>ii</sup>

**Table 1: Development of Derivative Trading in India**

Sl. No.	Date	Event
1.	14 December 18	1995 NSE asked SEBI for permission to trade index futures.
2.	November 1996	SEBI setup L. C. Gupta Committee to draft a policy framework for index futures.
3.	11 May 1998	
4.	7 July 1999	L. C. Gupta Committee submitted report.
5.	24 May 2000	RBI gave permission for OTC forward rate agreements (FRAs) and interest rate swaps
6.	25 May 2000	
7.	9 June 2000	SIMEX chose Nifty for trading futures and options on an Indian index.
8.	12 June 2000	SEBI gave permission to NSE and BSE to do index futures trading.
9.	31 August 2000	Trading of BSE Sensex futures commenced at BSE.
10.	June 2001	Trading of futures and options on Nifty to commence at SIMEX.
11.	July 2001	Trading of Nifty futures commenced at NSE.
12.	November 9,	Trading of Equity Index Options at NSE
13.	2002	Trading of Stock Options at NSE
14.	June 2003	Trading of Single Stock futures at BSE
15.	September 13,	Trading of Interest Rate Futures at NSE
16.	2004	Weekly Options at BSE
17.	January 1, 2008	Trading of Chhota (Mini) Sensex at BSE
18.	January 1, 2008	Trading of Mini Index Futures & Options at NSE
	August 29, 2008	Trading of Currency Futures at NSE
	October 2, 2008	Trading of Currency Futures at NSE

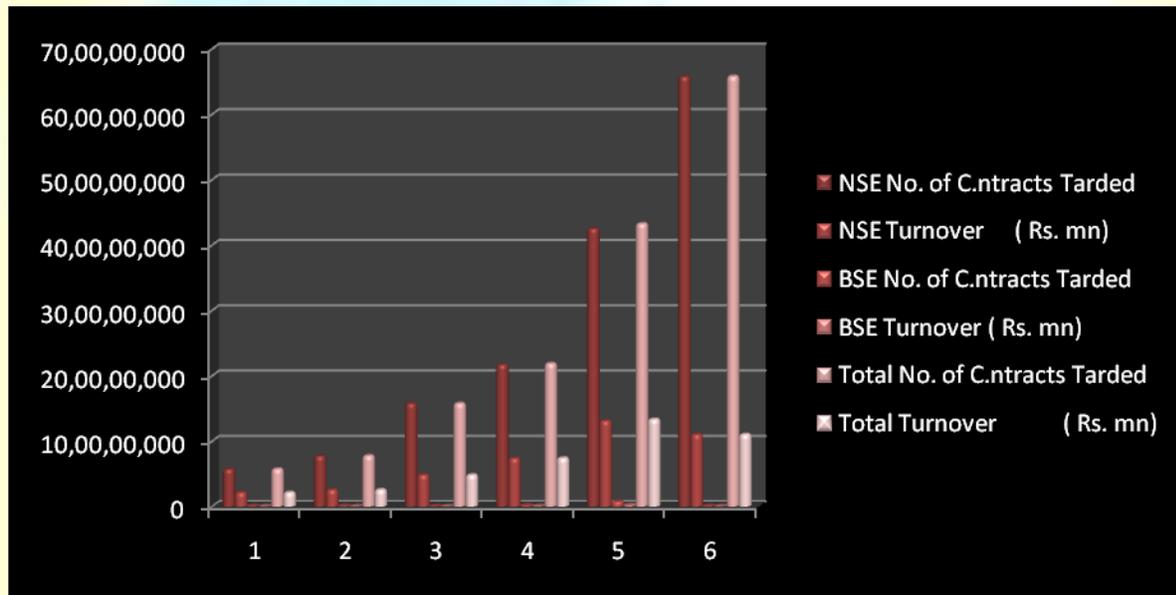
**Source: NSE and BSE**

NSE's derivatives market witnessed an increase in volumes over the period 2003-2007. The market had achieved a growth of 522% over this period with volumes in the derivatives segment of NSE and BSE increasing from USD 494 bn in 2003-04 to USD 3336 bn in 2007-08. However, the year 2008-09 saw a drop in volumes in this segment largely due to the global slowdown in the derivatives segment as an aftereffect of the sub-prime crisis. The turnover in this segment on the NSE fell 16% in 2008-09 as compared to 2007-08. The turnover on the BSE fell was a dramatic 97% over this period (see Table 2 and Figure 2). The share of BSE in the total derivative markets turnover fell from 1.81% in 2007-08 to 0.11% in 2008-09.

**Table 2: Trade Details of Derivatives Market during 2003-2008**

Year	NSE		BSE		Total	
	No. of Contracts Traded	Turnover (Rs. mn)	No. of Contracts Traded	Turnover (Rs. mn)	No. of Contracts Traded	Turnover (Rs. mn)
2003	56,886,776	21,306,492	382,258	124,520	57,269,034	21,431,012
2004	77,017,185	25,470,526	531,719	161,120	77,548,904	25,631,646
2005	157,619,271	48,242,504	103	60	157,619,374	48,242,564
2006	216,883,573	73,562,714	1,781,670	590,060	218,665,243	74,152,774
2007	425,013,200	130,904,779	7,453,371	2,423,080	432,466,571	133,327,859
2008	657,390,497	110,104,822	496,502	117,750	657,886,999	110,222,572

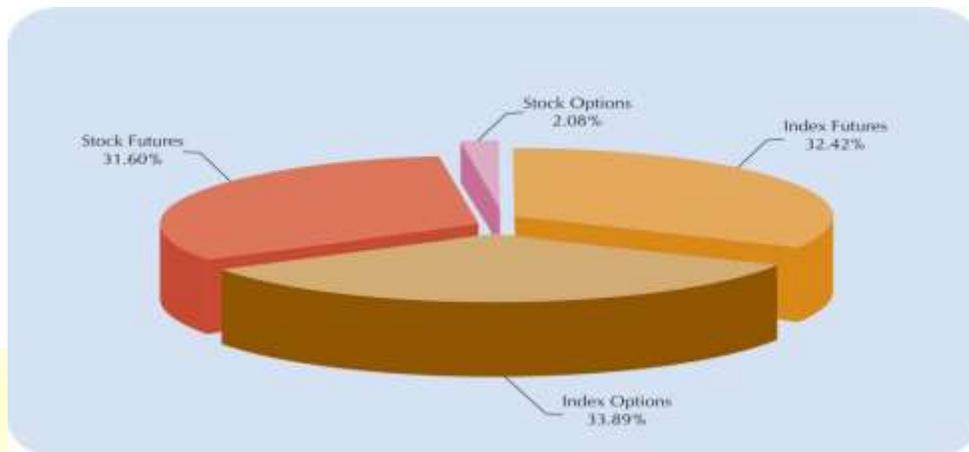
Source: [www.nseindia.com](http://www.nseindia.com)

**Figure 2: The Growth of Derivatives Trade in Indian Securities Market**

Source: Table 2

Looking at the product-wise turnover on the NSE, it is seen that stock futures which accounted for the highest percentage turnover among the various products (58%) in 2007-08, saw its share fall to 32% in 2008-09. On the other hand, the share of Index options increased dramatically from 10.4% in 2007-08 to 34% in 2008-09. The share of Index futures' turnover in total turnover was 32% and that of stock options was 2% in 2008-09. Thus, it is seen that index options were more popular than stock futures during 2008-09. This trend continued in the first quarter of 2009-10.

**Figure 3: Product-wise Turnover on NSE**



Source: NSE

### 1.7 Business growth in Currency derivatives segment

The Currency Derivatives Segment (CDS) on the NSE has witnessed high growth over the first ten months of introduction from September 08 to June 09. Table 3 presents the growth in CDS volumes and open interest on the NSE. The volumes in this segment have increased by 1200% in June 09 compared to September 08 levels. The average daily turnover on the NSE stood at Rs 34,256 mn in June 09.

**Table 3: Business Growth of Currency Futures**

Month/Year	No. of Contracts Traded	Trading volume	Average daily trading Volume
August-08 to March 09	32,672,768	1,622,724	11,674
April-June 2009	37,258,477	1,811,798	31,238

Source: Compiled by author on various sources

## SECTION- III

### Summery and conclusions

The growth of derivatives market in India is very phenomenal in the recent decade. Derivatives are the risk management tool that helps in effective management of risk by various stakeholders. Derivatives provide an opportunity to transfer risk, from the one who wish to avoid it; to one, who wish to accept it. India's experience with the launch of equity derivatives market has been extremely encouraging and successful. After introduction of derivatives in the main stream of market it is evident that there is significant consistency in the volatility of stock prices comparatively global markets. The derivatives turnover on the NSE has surpassed the equity market turnover. Significantly, its growth in the recent years has surpassed the growth of its

counterpart globally. India is proven that it is one of the successful markets among the developing countries for the derivatives market. There is an increasing sense that the equity derivatives market is playing a major role in shaping price discovery. Instead of rapid development in derivatives market there is some negative shades also hold back the movement of stock market in way of development. By framing of good policies our market can overcome all the pitfalls of derivatives market in the real-time. For this, concerning authorities should take appropriate steps to educate investors more. There should be continuous assessment on derivatives market and its regulative bodies.

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