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Derivatives - A Tool in the Dynamics of Risk Management

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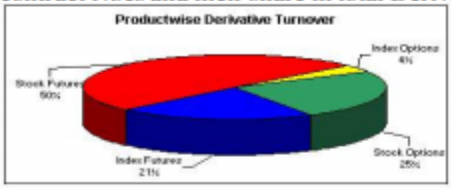
Abstract: ***As truly said, Apart from money market and capital market securities, a variety of derivatives have now become available for investment and trading and they are constituting a major part of the stock market transactions and continuously nurture Indian Stock Market. Derivatives or derivative securities are contracts which are written between two parties and whose value is derived from the value of widely held and marketable assets. Derivatives are also known as deferred payment Instruments. The exchange traded derivatives are quite liquid so indications are that derivatives have stabilizing effect and their introduction has led to decline in volatility of underlying assets. Due to the increased effects of globalization, last couple of years has seen the Indian Financial Market being increasingly exposed to global market factors and are faced by rising levels of complexity of risks. To mitigate the effect of those underlying risks, Indian markets are increasingly using highly complex hedging strategies with the help of exotic derivative instruments. The sheer explosive growth in volume of total derivative contracts outstanding validates the heightened interest of Indian markets for such products. To satiate this heightened interest for derivative instruments, banks have readily agreed to structure and offer these contracts to their corporate clients by focusing more on the returns rather than stressing on the potential down-side risks. However, banks should undertake derivative transactions, particularly with companies with a sense of responsibility and circumspection that would avoid, among other things, mis-selling. Under such circumstances, it has become imperative for Indian Financial Market to adopt and demonstrate a pro-active (but disciplined) approach towards financial risk management. The present paper evaluates the impact of introduction of derivative securities on volatility of underlying stocks and Index.***

INTRODUCTION- The rapid growth of derivatives in the last three decades can be attributed to the useful economic functions they perform and the numerous benefits they provide to the end users connected to Indian Stock Market. The values of derivatives and those of their underlying assets are closely related. Though derivatives are Off Balance Sheet Instruments, the fact is that obscure the leverage and financial might they give to the party. There are bewilderingly complex varieties of derivatives already in existence and the markets are innovating newer and newer ones continuously. The trading of first derivative security, i.e. the stock index futures commenced at the starting of the decade. The options and futures on individual stocks were introduced thereafter. Here is an attempt to test the efficiency or to check the performance of derivative securities traded in the Indian stock Market in managing market risk by comparing and examines the volatility of underlying assets and stock exchanges Index before and after the introduction of option and futures contracts. The market of derivatives took momentum very rapidly. Today the turnover in derivative segment has far exceeded the turnover in cash segment. According to SEBI bulletin, the average turnover of derivatives was more than two times of the turnover of cash segment in August, 2004. The individual stock futures accounted for fifty-seven percent of total market turnover. The derivatives contracts are used for arbitrage besides hedging and speculation. Although, arbitrage activities are helpful in eliminating mis-pricing in both the cash segment and the derivative segment of the market, but sometime they may lead abnormality in the market. Almost all the arbitrage strategies involving derivative contracts require taking simultaneous positions in the derivatives and the underlying securities. A number of studies have examined the performance before and after the introduction of derivative securities. The evidence is available for stock index options, stock options and stock index futures contracts in context of stock market all over the world.

Common derivative contract types and their share in total Derivative Turnover



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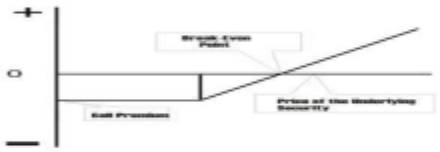
Derivative contracts have several variants. The most common variants are forwards, futures, options and swap.

Forward Contracts- A forward contract is an agreement between two parties - a buyer and a seller to purchase or sell something at a later date at a price agreed upon today. Forward contracts, sometimes called forward commitments, are very common in everyone life. For example, an apartment lease is a forward commitment. By signing a one-year lease, the tenant agrees to purchase the service - use of the apartment - each month for the next twelve months at a predetermined rate. Like-wise, the landlord agrees to provide the service each month for the next twelve months at the agreed-upon rate. Now suppose that six months later the tenant finds a better apartment and decides to move out. The forward commitment remains in effect, and the only way the tenant can get out of the contract is to sublease the apartment. Because there is usually a market for subleases, the lease is even more like a futures contract than a forward contract.

Options Contracts- Options are of two types - calls and puts. Calls give the buyer the right but not the obligation to buy a given quantity of the underlying asset, at a given price on or before a given future date. Puts give the buyer the right, but not the obligation to sell a given quantity of the underlying asset at a given price on or before a given date. Options are contracts that give the owner the right, but not the obligation, to buy (in the case of a call option) or sell (in the case of a put option) an asset. The price at which the sale takes place is known as the strike price, and is specified at the time the parties enter into the option. The option contract also specifies a maturity date. In the case of a European option, the owner has the right to require the sale to take place on (but not before) the maturity date; in the case of an American option, the owner can require the sale to take place at any time up to the maturity date. If the owner of the contract exercises this right, the counterparty has the obligation to carry out the transaction.



Buyer of a Call Option

Swaps- Swaps are private agreements between two parties to exchange cash flows in the future according to a prearranged formula. They can be regarded as portfolios of forward contracts. The two commonly used swaps are interest rate swaps and currency swaps.

1. Interest rate swaps: These involve swapping only the interest related cash flows between the parties in the same currency.
2. Currency swaps: These entail swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than those in the opposite direction.

More complex derivatives can be created by combining the elements of these basic types. For example, the holder of a swaption has the right, but not the obligation, to enter into a swap on or before a specified future date.

SERVICES PROVIDED BY THE DERIVATIVES

1. Increase the capability of the markets to absorb risk: To control, shift, avoid, reduce, eliminate, and manage efficiently various types of risks through hedging, arbitraging and acquiring insurance against them. In times of erratic trading, volatile interest rates and exchange rates, monetary chaos, national income turbulence and volatile markets, derivatives are said to enable investors to modify suitably the risk characteristics of their portfolios, or to shift the risk on to those who are willing to assume it for higher profits. They increase the capability of the markets to absorb risk, and this has a beneficial effect on the level of commercial and industrial activity. In their absence, the cost of risk to economy would be higher, and, it would worse off.

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2. Barometers of future: To help in disseminating information which enables the society to discover or form suitable/ correct/true/ equilibrium prices. They serve as barometers of future trends in prices which result in the formation of correct prices on the spot markets now and in future. They provide for centralized trading where information about fundamental supply and demand conditions are efficiently assimilated and acted on. The economic and social benefits of accurate and equilibrium prices thus arrived at are many and one of them is superior allocation of resources.

3. Reduce Transaction cost: derivatives are there to enhance liquidity and reduce transactions cost in the market for underlying assets.

4. Assist in devise strategies: To enable the individuals and managers of large pools of funds to devise or design strategies for proper asset allocation, yield enhancement and achieving other portfolios goals. They provide opportunities for using certain kinds of special knowledge to obtain portfolio which offer higher expected returns than other portfolios comprising common stock, bonds, etc. with the same degree of risk.

5. Remove Price fluctuations: To smoothen out prices fluctuations, to narrow down the price spread, to integrate price structure at different points of time, The existence of speculation, competitive trading, and differing risk taking preferences of the market operators help in achieving these results.

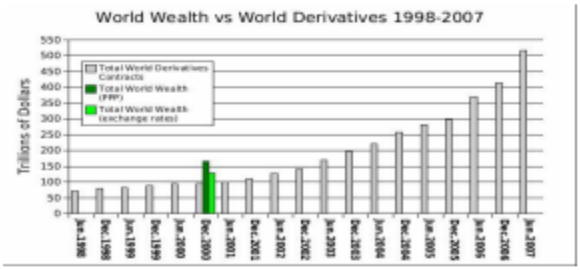
6. Catalyst to the growth of stock market: To act as starter form of investment which result in a wider participation in the securities markets. They act as the catalyst to the growth of stock markets.

7. Help in developing complete market: To offer important advantages of diversification and enable the society to reach the position of optimality by developing "complete market". The securities market is said to be complete if the patterns of returns of all additional securities are spanned by the already existing securities in it, or if it provides so many securities that no additional security can be created whose returns cannot be duplicated by a portfolio of existing securities.

NEED FOR A DERIVATIVE MARKET

The derivatives market performs a number of economic functions:

1. They help in transferring risks from risk adverse 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 adverse people in greater numbers.
5. They increase savings and investment in the long run.



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FACTORS GENERALLY ATTRIBUTED AS THE DRIVING FORCE BEHIND THE GROWTH OF FINANCIAL DERIVATIVES IN NURTURING INDIAN STOCK MARKET-

Particulars	1998	1999	2000	2001	2002	2003	2004	2005	2006
Stock Exchanges									
Cash Market	22	23	23	23	23	23	23	22	22
Stock Exchanges									
Derivatives Market			2	2	2	2	2	2	2
Brokers									
Cash Segment	9005	9069	9192	9782	9697	9519	9368	9129	9335
Sub Brokers									
Cash Segment	3760	4589	5675	9957	12208	13291	12815	13084	23479
Brokers									
Derivatives	-	-	-	519	705	795	829	994	1120
Foreign Institutional Investors	406	450	506	527	490	502	540	665	862
Custodians	-	-	15	14	12	11	11	11	11
Depositories	1	2	2	2	2	2	2	2	2

Derivatives markets have had a slow start in India. The first step towards introduction of derivatives trading in India was the promulgation of the Securities Laws (Amendments) Ordinance, 1995, which withdrew the prohibition on options in securities. The market for derivatives, however, did not take off, as there was no regulatory framework to govern trading of derivatives. SEBI set up a 24-member committee under the Chairmanship of Dr. L.C. Gupta on 18th November 1996 to develop appropriate regulatory framework for derivatives trading in India. The committee recommended that derivatives should be declared as 'securities' so that regulatory framework applicable to trading of 'securities' could also govern trading of securities. SEBI was given more powers and it starts regulating the stock exchanges in a professional manner by gradually introducing reforms in trading. Derivatives trading commenced in India in June 2000 after SEBI granted the final approval in May 2000. SEBI permitted the derivative segments of two stock exchanges, viz NSE and BSE, and their clearing house/corporation to commence trading and settlement in approved derivative contracts. Introduction of derivatives was made in a phase manner allowing investors and traders sufficient time to get used to the new financial instruments. Index futures on CNX Nifty and BSE Sensex were introduced during 2000. The trading in index options commenced in June 2001 and trading in options on individual securities commenced in July 2001. Futures contracts on individual stock were launched in November 2001.

In June 2003, SEBI/RBI approved the trading in interest rate derivatives instruments and NSE introduced trading in futures contract on June 24, 2003 on 91 day Notional T-bills. Derivatives contracts are traded and settled in accordance with the rules, bylaws, and regulations of the respective exchanges and their clearing house/corporation duly approved by SEBI and notified in the official gazette. So, following are the different factors which contributed towards the growth of the stock market after introducing derivatives in different manners:

(a)Increased Volatility in asset prices in financial markets.

(b) Increased integration of national financial markets with the international markets.

(c) Marked improvement in communication facilities and sharp decline in their costs.

(d) Development of more sophisticated risk management tools, providing economic agents a wider choice of risk management strategies.

(e) Innovations in the derivatives markets, which optimally combine the risks and returns over a large number of financial assets, leading to higher returns, reduced risk as well as transaction costs as compared to individual financial assets.

BENEFITS OF DERIVATIVES-

Price Risk Management- The derivative instrument is the best way to hedge risk that arises from its underlying. Suppose, 'A' has bought 100 shares of a real estate company with a bullish view but, unfortunately, the stock starts showing bearish trends after the sub prime crisis. To avoid loss, 'A' can sell the same quantity

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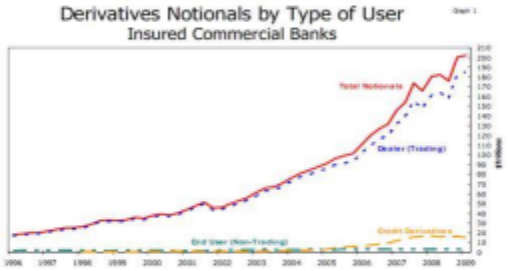
of futures of the script for the time period he plans to stay invested in the script. This activity is called hedging. It helps in risk minimization, profit maximization, and reaching a satisfactory risk-return trade-off, with the use of a portfolio. The major beneficiaries of the futures instrument have been mutual funds and other institutional investors.

Price Discovery- The new information disseminated in the marketplace is interpreted by the market participants and immediately reflected in spot and futures prices by triggering the trading activity in one or both the markets. This process of price adjustment is often termed as price discovery and is one of the major benefits of trading in futures. Apart from this, futures help in improving efficiency of the markets.

Asset Class- Derivatives, especially futures, offer an exclusive asset class for not only large investors like corporate and financial institutions but also for retail investors like high net worth Individuals. Equity futures offer the advantage of portfolio risk diversification for all business entities. This is due to fact that historically, it has been witnessed that there lies an inverse correlation of daily returns in equities as compared to commodities.



High Financial Leverage: Futures offer a great opportunity to invest even with a small sum of money. It is an instrument that requires only the margin on a contract to be paid in order to commence trading. This is also called leverage buying/selling.

Transparency- Futures instruments are highly transparent because the underlying product (equity scripts/index) are generally traded across the country or even traded globally. This reduces the chances of manipulation of prices of those scripts. Secondly, the regulatory authorities act as watchdogs regarding the day-to-day activities taking place in the securities markets, taking care of the illegal transactions.

Predictable Pricing- Futures trading is useful for the genuine investor class because they get an idea of the price at which a stock or index would be available at a future point of time.

Conclusion- The derivatives would enhance further the speculative potential of the already highly speculative Indian stock market. The present research paper has revealed that there are many different aspects of the relationship between cash and derivative market namely, stabilizing effect, destabilizing effect or no effect. Derivative market in India has resulted in stabilizing prices by reducing volatility level. Thus it can be concluded that the introduction of derivatives has resulted in improving the quality of underlying asset market.

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