ORIGINAL RESEARCH PAPER

Engineering

DERIVATIVE, AND THEIR ROLE IN THE FINANCIAL MARKET

KEY WORDS: Commodities, Billion, Stock market, Derivatives

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ABSTRACT

Commodities whose value is derived from the price of some underlying asset like securities, commodities, bullion, currency, interest level, stock market index or anything else are known as "Derivatives". Or we can say that derivatives are financial security such as an option or future whose value is derived in part from the value and characteristics of another security, the underlying asset.

'Futures' and 'options' are two commodity traded types of derivatives. An 'options' contract gives the owner the right to buy or sell an asset at a set price on or before a given date.

1 INTRODUCTION— The emergence of the market for derivative product, most notable forwards, future and option, can be tracked back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuation in asset prices. The financial market is marked by a very high degree of volatility. Through the use of derivative product, it is possible to partly or fully transfer price risk by locking-in asset prices.

1.1 Why It is Important —There are some factor

- Also reduce risk systematic and unsystematic.
- To reduce operational risk
- To increase transparency
- To enhance market integrity and oversight
- Derivative product minimizes the impact of fluctuation in asset price on the profitability and cash flow situation of risk averse investors.
- Risk becomes certain.
- It is control, regulated by SEBI.

2. Derivative, And Their Role in The Financial Market

The emergence of the market for derivative product, most notably forwards, future and option, can be tracked back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuation in asset prices. The financial market is marked by a very high degree of volatility. Through the use of derivative product, it is possible to partly or fully transfer price risk by locking-in asset prices.

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'Futures' and 'options' are two commodity traded types of derivatives. An 'options' contract gives the owner the right to buy or sell an asset at a set price on or before a given date. On the other hand, the owner of a 'futures' contract is obligated to buy or sell the asset.

2.1 Development of Derivatives market in India

The first step towards introduction of derivatives trading in India was the promulgation of the Securities Laws (Amendment) 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 November 18, 1996** to develop Appropriate regulatory framework for derivatives trading in India. The committee submitted its report on March 17, 1998 prescribing necessary pre–conditions for introduction of 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 also set up a group in June 1998 under the Chairmanship of Prof.J.R.Varma, to recommend measures for risk containment in derivatives market in India. The report, which was submitted in October 1998, worked out the operational details of margining system, methodology for charging initial margins, broker net worth, deposit requirement and real–time monitoring requirements.

The Securities Contract Regulation Act (SCRA) was amended in December 1999 to include derivatives within the ambit of 'securities' and the regulatory framework was developed for governing derivatives trading. The act also made it clear that derivatives shall be legal and valid only if such contracts are traded on a recognized stock exchange, thus precluding OTC derivatives. The government also rescinded in March 2000, the three–Decade old notification, which prohibited forward trading in securities. Derivatives trading commenced in India in June 2000 after SEBI granted the final approval to this effect in May 2001. 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. To begin with, 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 options on 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 Trading and settlement in derivative contracts is done in accordance with the rules, byelaws, and regulations of the respective exchanges and their clearing house/corporation duly approved by SEBI and notified in the official gazette. Foreign Institutional Investors (FIIs) are permitted to trade in all Exchange traded derivative products.

Or

- Derivative trading was cleared with the securities laws amendment bill on 1998.
- But trading was started with the introduction of BSE-30(Sensex)index future and S & P CNX Nifty index future in the year 2000.
- In January 2004, the IRDA allowed Insurance companies to deal in financial derivatives to a limited extent.
- In January 2004, RBI, allowed FIIs to trade in equity derivative.
- In the year 2006 with the amendment of RBI act OTC derivative transaction is allowed provided one of the parties is either RBI or any entity regulated under RBI act, banking regulation or FEMA.

2.2 What measures exactly is the Commission proposing?

The Commission's objectives are to reduce counterparty credit and operational risks, increase transparency and to strengthen market

integrity and oversight. To that end, the Commission proposes a package of actions that will be developed into legislative proposals in 2010.

- To reduce operational risk, the Commission will work with industry to promote standardization of the legal terms of contracts and of contract-processing.
- To increase transparency, the Commission will (i) mandate that positions and all transactions are recorded in trade repositories, (ii) regulate and supervise trade repositories, (iii) mandate trading of standardized derivatives on exchanges and other organized trading venues, and (iv) increase pre- and post-trade transparency as part of the upcoming review of the Markets in Financial Instruments Directive (MiFID) for all derivatives markets including for commodity derivatives.
- To enhance market integrity and oversight, the Commission will propose clarifying and extending the scope of the Market Abuse Directive (MAD) to derivatives and by giving regulators the possibility to set position limits.

3. COUNTERPARTY CREDIT RISK

A CCP is an entity that interposes itself between the counterparties to a transaction, becoming the buyer to every seller and the seller to every buyer.

3.1 Definition

Commodities whose value is derived from the price of some underlying asset like securities, commodities, bullion, currency, interest level, stock market index or anything else are known as "Derivatives".

In simpler form, derivatives are financial security such as an option or future whose value is derived in part from the value and characteristics of another security, the underlying asset.

It is a generic term for a variety of financial instruments. Essentially, this means you buy a promise to convey ownership of the asset, rather than the asset itself. The legal terms of a contract are much more varied and flexible than the terms of property ownership. In fact, it's this flexibility that appeals to investors.

When a person invests in derivative, the underlying asset is usually a commodity, bond, stock, or currency. He bet that the value derived from the underlying asset will increase or decrease by a certain amount within a certain fixed period of time.

'**Futures' and 'options'** are two commodity traded types of derivatives.

An 'options' contract gives the owner the right to buy or sell an asset at a set price on or before a given date. On the other hand, the owner of a 'futures' contract is obligated to buy or sell the asset.

The other examples of derivatives are warrants and convertible bonds (similar to shares in that they are assets). But derivatives are usually contracts. Beyond this, the derivatives range is only limited by the imagination of investment banks. It is likely that any person who has funds invested, an insurance policy or a pension fund, that they are investing in, and exposed to, derivatives – wittingly or unwittingly.

Shares or bonds are financial assets where one can claim on another person or corporation; they will be usually be fairly standardized and governed by the property of 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 standardized.

Derivatives securities or derivatives products are in real terms contracts rather than solid as it fairly sounds.

3.2 Option Terminology

- Index option
- Stock option
- Buyer of an option
- Writer of an option
- Call option
- Put option
- Expiration date
- Option price
- Strike price
- American option
- European option
- In-the-money
- At-the-money
- Out-of-the money option
- Time Value of an option

4. Future – A future contract is an agreement two parties buy or sell an assets at a certain time in the future at certain price.

The standardized items in the future contract are

- Quantity of the underlying
- Quality of the underlying
- The date and the month of delivery
- Location of settlement

Futures terminology-

- Spot Price
- Future Price
- Contract cycle
- Expiry Date
- Contract size
- Basis
- Cost of carry
- Initial margin
- Marketing to market
- Maintenance margin

4.1 Financial Derivatives Market and its Development in India

Financial markets are, by nature, extremely volatile and hence the risk factor is an important concern for financial agents. To reduce this risk, the concept of derivatives comes into the picture. Derivatives are products 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 a change in prices by that date. The transaction in this case would be the derivative, while the spot price of wheat would be the underlying asset.

4.2 Development of exchange-traded derivatives

Derivatives have probably been around for as long as people have been trading with one another. Forward contracting dates back at least to the 12th century, and May well have been around before then. Merchants entered into contracts with one another for future delivery of specified amount of commodities at specified price. A primary motivation for Pre-arranging a buyer or seller for a stock of commodities in early forward contracts was to lessen the possibility that large swings would inhibit marketing the commodity after a harvest.

The participants in a derivatives market

Hedgers- It use futures or options markets to reduce or eliminate the risk associated with price of an asset.

Speculators – It use 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 – Arbitrageurs are in business to take advantage of a discrepancy between prices in two 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.

4.3 Types of Derivatives

Forwards: A forward contract is a customized contract between two entities, where settlement takes place on a specific date in the

future at today's pre-agreed price.

Futures: A futures contract is an agreement between two parties to buy or sell an asset at a certain time in the future at a certain price. Futures contracts are special types of forward contracts in the sense that the former are standardized exchange-traded contracts

Options: 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.

Warrants: Options generally have lives of upto one year, the majority of options traded on.

Options exchanges having a maximum maturity of nine months. Longer-dated options are called warrants and are generally traded over-the-counter.

LEAPS: The acronym LEAPS means Long-Term Equity Anticipation Securities. These are options having a maturity of up to three years.

Baskets: Basket options are options on portfolios of underlying assets. The underlying asset is usually a moving average or a basket of assets. Equity index options are a form of basket options.

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:** These entail swapping only the interest related cash flows between the parties in the same currency.
- **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.

Swaptions: Swaptions are options to buy or sell a swap that will become operative at the expiry of the options. Thus a swaption is an option on a 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.

Factors driving the growth of financial derivatives

1. Increased volatility in asset prices in financial markets,
2. Increased integration of national financial markets with the international markets,
3. Marked improvement in communication facilities and sharp decline in their costs,
4. Development of more sophisticated risk management tools, providing economic agents a wider choice of risk management strategies, and
5. 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 transactions costs as compared to individual financial assets.

The following are some observations based on the trading report on the futures and options (F&O):

Single-stock futures continue to account for a sizable proportion of the F&O segment. It constituted 70 per cent of the total turnover during June 2002.

A primary reason attributed to this phenomenon is that traders are comfortable with single-stock futures than equity options, as the former closely resembles the erstwhile badla system.

On relative terms, volumes in the index options segment continue to remain poor. This may be due to the low volatility of the spot index. Typically, options are considered more valuable when the volatility of the underlying (in this case, the index) is high. A related issue is that brokers do not earn high commissions by recommending index options to their clients, because low volatility leads to higher waiting time for round-trips.

Put volumes in the index options and equity options segment have increased since January 2002. The call-put volumes in index options have decreased from 2.86 in January 2002 to 1.32 in June. The fall in call-put volumes ratio suggests that the traders are increasingly becoming pessimistic on the market.

Farther month futures contracts are still not actively traded. Trading in equity options on most stocks for even the next month was non-existent.

Daily option price variations suggest that traders use the F&O segment as a less risky alternative (read substitute) to generate profits from the stock price movements. The fact that the option premiums tail intra-day stock prices is evidence to this. Calls on Satyam fall, while puts rise when Satyam falls intra-day.

If calls and puts are not looked as just substitutes for spot trading, the intra-day stock price variations should not have a one-to-one impact on the option premiums.

5. Derivative Segment At BSE

Month/Year	No of Trading days	Index Future		Stock future		Interest Rate Future	
		No of contract	Turnover(Rs crore)	No of contract	Turnover(Rs crore)	No of contract	Turnover(Rs crore)
1	2	3		4		5	
Jan 00 to Mar 01	208	77733	1683	-	-	-	-
2001-2002	247	79562	1275	17951	453	-	-
2002-2003	251	111324	1811	25842	644	-	-
2003-2004	254	246443	6572	128193	5171	-	-
2007-2008	250	449630	13600	6725	213	-	-
2009-2010	250	89	5	12	1	0	0
2013-2014	251	1638779	55491	142433	3515	0	0
2016-2017	352	7157078	234660	295117	7609	0	0

Derivative Segment At NSE

Month/Year	No of Trading days	Index Future		Stock future		Interest Rate Future	
		No of contract	Turnover(Rs crore)	No of contract	Turnover(Rs crore)	No of contract	Turnover(Rs crore)
1	2	3		4		5	
Jan 00 to Mar 01	208	90580	2365			-	-
2001-2002	247	1025588	21482	1957856	51516	-	-
2002-2003	251	2126763	43951	10676843	286532	-	-
2003-2004	254	17191668	554462	32368842	1305949	10781	202
2007-2008	250	21635449	772174	47043066	1484067	0	0
2009-2010	250	58537886	1513791	80905493	2791721	0	0
2013-2014	251	81487424	2539575	104955401	3830972	0	0
2016-2017	352	156598579	3820667	203587952	7548563	0	0

Exchange-traded vs. OTC (Over The Counter) derivatives markets

The OTC derivatives markets have witnessed rather sharp growth over the last few years, which has accompanied the modernization of commercial and investment banking and globalization of financial activities. The recent developments in information technology have contributed to a great extent to these developments. While both exchange-traded and OTC derivative contracts offer many benefits, the former have rigid structures compared to the latter. It has been widely discussed that the highly leveraged institutions and their OTC derivative positions were the main cause of turbulence in financial markets in 1998.

These episodes of turbulence revealed the risks posed to market stability originating in features of OTC derivative instruments and markets. The OTC derivatives markets have the following features compared to exchange-traded derivatives:

1. The management of counter-party (credit) risk is decentralized and located within Individual institutions,
2. There are no formal centralized limits on individual positions, leverage, or margining,
3. There are no formal rules for risk and burden-sharing,
4. There are no formal rules or mechanisms for ensuring market stability and integrity, and For safeguarding the collective interests of market participants.

The need for a derivatives 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 averse people in greater numbers
5. They increase savings and investment in the long run.

Taxation

- Finance Act No-2 has introduce Securities Transaction Tax on all derivative entered in a recognized stock exchange This tax is payable by the seller of the derivative instrument The rate of tax applicable on the same has been revised to **0.0133%** of the value of taxable securities by finance Act-2005

Their role in financial Market

The global use of derivative instruments has grown in importance, because they are less expensive tools for hedging risks and for investing in securities. Because several entities have incurred substantial losses in derivatives, leading to bankruptcy in a few cases, and because the size of the derivative market appears so large, legislators and regulators around the world, who have limited information about derivatives, fear that further possible bankruptcies pose a systemic risk to the economy. This fear is unwarranted. Affected entities will continue to make infrastructure investments to support their valuable derivative business, a more beneficial alternative to political solution.

These are some other factor to reduce risk

- To reduce counterparty credit risk
- To reduce operational risk
- To increase transparency
- To enhance market integrity and oversight

GLOBAL COOPERATION

The market for derivatives is global, and regulatory arbitrage must be excluded. The Commission wants to ensure a robust and convergent international regulatory outcome. T he proposals are therefore in line with the objective outlined in the G20 meeting of 25 September 2009 .

In order to ensure an ambitious and coherent implementation of these policies across the globe, the Commission intends continue to develop its policy in this area in close cooperation with its G20 partners, and in particular with the US, which is also in the process of designing a new approach to derivatives markets.

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