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Emerging Trends and Prospects in Derivatives Market in India

Dr. Barhate G.H

Introduction

Theoretically Derivatives are financial instruments whose values depends on the values of other, more basic underlying assets. They do not have value on their own and they derive their values from another asset or multiple of assets. Derivatives are useful in reallocating risk either across individuals with different risk bearing preferences. The underlying asset can be equity, forex, commodity or any other asset class. Risk is a characteristic feature of most commodity and capital markets. Variations in the prices of agricultural and non-agricultural commodities are induced, over time, by Demand-supply dynamics. The last two decades have witnessed many-fold increase in the volume of international trade and business due to the wave of globalization and liberalization sweeping across the world. This has led to rapid and unpredictable variations in financial assets prices, interest rates and exchange rates, and subsequently, to exposing the corporate world to an unwieldy financial risk. In the present highly uncertain business scenario, the importance of risk management is much greater than ever before. The emergence of derivatives market is an ingenious feat of financial engineering that provides an effective and less costly solution to the problem of risk that is embedded in the price unpredictability of the underlying asset. In India, the emergence and growth of derivatives market is relatively a recent phenomenon. Since its inception in June 2000, derivatives market has exhibited exponential growth both in terms of volume and number of traded contracts. The market turn-over has grown from Rs103851crore in 2000-2001 to Rs. 11022257crore in 2008-2009 and in 2011-12 it reached up to 3,21,58,208 crore. Within a short span of eight years, derivatives trading in India has surpassed cash segment in terms of turnover and number of traded contracts. The present study encompasses in its scope an analysis of historical roots of derivative trading, types of derivative products, regulation and policy developments, trend and growth, future prospects and challenges of derivative market in India. Some space is devoted also to a brief discussion of the status of global derivatives markets vis-a-vis the Indian derivatives market.

Objectives

1. To study the emerging trends and development of derivative market in India.
2. To study the cash trading segment with equity derivative segment.
3. To study the total derivative segment turnover of derivative market.

What is 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

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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. Some other meanings of word derivatives are: a derived function: the result of mathematical differentiation; the instantaneous change of one quantity relative to another; $df(x)/dx$, b derivative instrument: a financial instrument whose value is based on another security, (linguistics) a word that is derived from another word; "electricity" is a derivative of 'electric'. The asset underlying a derivative may be commodity or a financial asset. Derivatives are those financial instruments that derive their value from the other assets. For example, the price of gold to be delivered after two months will depend, among so many things, on the present and expected price of this commodity.

Definition of Financial Derivatives

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;
- () "A contract which derives its value from the prices, or index of prices, of underlying securities".

Underlying Asset in a Derivatives Contract

As defined above, the value of a derivative instrument depends upon the underlying asset. The underlying asset may assume many forms:

- i. Commodities including grain, coffee beans, orange juice;
- ii. Precious metals like 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) money market products such as loans or deposits.

Participants in Derivatives Market

1. **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.
2. **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.
3. **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.

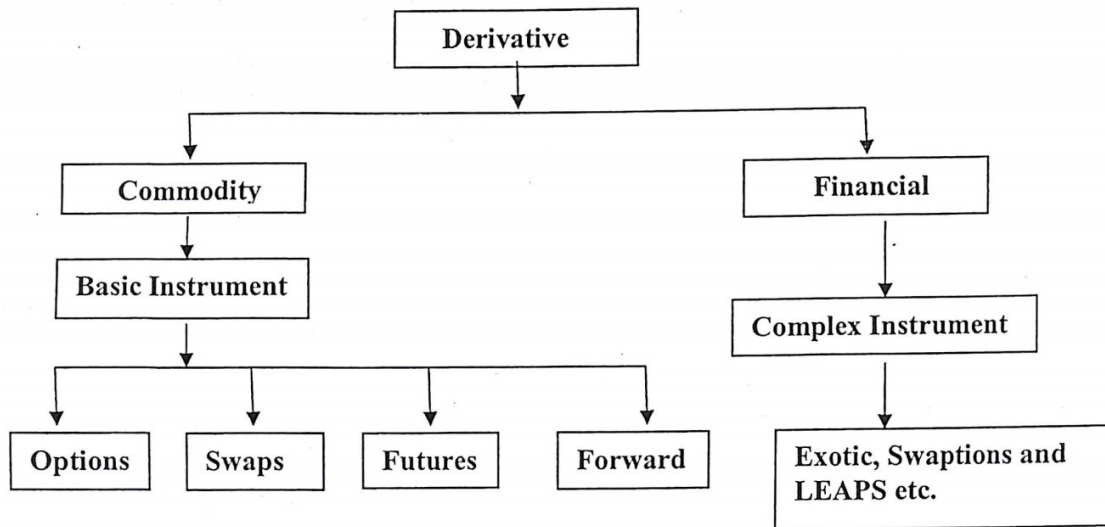
Classification of Derivatives

Broadly derivatives can be classified in to 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.

Forward Contract

A forward contract is an agreement between two parties to buy or sell an asset at a specified point of time in the future. In case of a forward contract the price which is paid/ received by the parties is decided at the time of entering into contract. It is the simplest form of derivative contract mostly entered by individuals in day to day's life.

Figure 1: Classification of Derivatives



Forward Futures Options Swaps

Forward contract is a cash market transaction in which delivery of the instrument is deferred until the contract has been made. Although the delivery is made in the future, the price is determined on the initial trade date. One of the parties to a forward contract assumes a long position (buyer) and agrees to buy the underlying asset at a certain future date for a certain price. The other party to the contract known as seller assumes a short position and agrees to sell the asset on the same date for the same price. The specified price is referred to as the delivery price. The contract terms like delivery price and quantity are mutually agreed upon by the parties to the contract.

Futures Contract

Futures is a standardized forward contract to buy (long) or sell (short) the underlying asset at a specified price at a specified future date through a specified exchange. Futures contracts are traded on exchanges that work as a buyer or seller for the counterparty. Exchange sets the standardized terms in term of Quality, quantity, Price quotation, Date and Delivery place (in case of commodity).

The features of a futures contract may be specified as follows :

- i These are traded on an organised exchange like IMM, LIFFE, NSE, BSE, CBOT etc.
- ii These involve standardized contract terms viz. the underlying asset, the time of maturity and the manner of maturity etc.
- iii These are associated with a clearing house to ensure smooth functioning of the market.
- iv Almost ninety percent future contracts are settled via cash settlement instead of actual delivery of underlying asset.

Following are the important types of financial futures contract :

Stock Future or equity futures, Stock Index futures, Currency futures, and Interest Rate bearing securities like Bonds, T- Bill Futures.

Options Contract

In case of futures contract, both parties are under obligation to perform their respective obligations out of a contract. But an options contract, as the name suggests, is in some sense, an optional contract. An option is the right, but not the obligation, to buy or sell something at a stated date at a stated price. A "call option" gives one the right to buy; a "put option" gives one the right to sell. Options are the standardized financial contract that allows the buyer (holder) of the option, i.e. the right at the cost of option premium, not the obligation, to buy (call options) or sell (put options) a specified asset at a set price on or before a specified date through exchanges.

Swaps Contract

A swap can be defined as a barter or exchange. It is a 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 stream of cash flows over a period of time in the future. The parties that agree to the swap are known as counter parties. The two commonly used swaps are: i) Interest rate swaps which entail swapping only the interest related cash flows between the parties in the same currency, and ii) 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 the cash flows in the opposite direction.

Table 1: Development of Derivative Trading in India

1 December	1995 NSE asked SEBI for permission to trade index futures.
18 November 1996	SEBI setup L. C. Gupta Committee to draft a policy framework for index futures
11 May 1998	L. C. Gupta Committee submitted report.
7 July 1999	RBI gave permission for OTC forward rate agreements (FRAs) & interest rate swaps
24 May 2000	SIMEX chose Nifty for trading futures and options on an Indian index.
20 May 2000	SEBI gave permission to NSE and BSE to do index futures trading
9 June 2000	Trading of BSE Sensex futures commenced at BSE.
14 June 2000	Trading of futures and options on Nifty to commence at SIMEX.
31 August 2000	Trading of Nifty futures commenced at NSE
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
September 13, 2004	Weekly Options at BSE
January 1, 2008	Trading of Chhota(Mini) Sensex at BSE
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
October 8, 2008	Launch of Currency Futures contracts in USD-INR on MCX-SX
December 10, 2008	Trading of S&P CNX Deity Futures and Options on NSE
August 07, 2009	USE from alliance to develop Currency & Interest Rate Derivatives Markets
August 31, 2009	Re-Introduced Trading in Interest Rate Futures on NSE under Currency Derivatives
February 01, 2010	Launch of currency futures on additional currency pairs such as Euro-INR, Pound Sterling-INR and Japanese Yen-INR on NSE and MCX-SX
April 27, 2010	SEBI permitted Stock Exchanges to introduces derivatives contract on volatility index
July 15, 2010	SEBI allowed Stock Exchanges to introduces physical settlement stock options.
July 30, 2010	SEBI allowed introduction of options on USD-INR spot rate on currency derivatives segment of stock exchanges
October 04, 2010	EUREX-SENSEX Futures launched by BSE
September 11, 2010	SEBI permitted Stock Exchanges to introduces derivatives contracts(Futures and Options) on foreign stock indices in the equity derivatives segment
March 30, 2012	BSE launched trading in BRICMART indices derivatives
July 16, 2012	SGX launches Nifty Options on its exchange
November 20, 2012	SEBI launched trading in futures & Options mini contracts on indices which come with a minimum contract size of Rs 1 lakh to protect retail investor

Source: NSE and BSE

Since the introduction of derivatives market in India in 2000, the market has grown at a very fast rate. At the time of initiating the research work, about 97 percent of the volume in the NSE F&O segment was retail and around 3 percent institutional. About 50 members out of around 757 members on NSE(as on January 31,06) covered almost half of the total turnover on the derivatives segment. The table giving the product wise turnover break up across equity derivatives market in India is given below:

Table 2

Product-wise Turnover in Equity Derivative Market across India

Year	Index Futures (BSE+NSE)	Stock Futures (BSE+NSE)	Index Options (BSE+NSE)	Stock Options (BSE+NSE)	Total Derivatives (NSE+BSE) Turnover
	Turnover	Turnover	Call + Put Turnover	Call + Put Turnover	
2001-02	22758	51967	3849	25277	103851
2002-03	45762	287176	9249	100156	442344
2003-04	561034	1311120	52823	217544	2142521
2004-05	785773	1484280	124251	168861	2563165
2005-06	1513796	2791722	338472	180270	4824260
2006-07	2595066	3834487	791912	193811	7415276
2007-08	4055327	7556172	1362150	359136	13332786
2008-09	3581868	3479651	3731502	229227	11022257
2009-10	3934485	5195247	8028102	506065	17663899
2010-11	4356909	5495757	18365366	1030344	29248375
2011-12	3756447	4084886	23338374	978500	32158208

Source : SEBI

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 up to the 2011-12.

Trading volume

Following a tumultuous growth in turnover in 2008-09, NSE's derivatives market volume bounced back in 2009-10 with a staggering year-on-year growth of 81%. NSE further strengthened its dominance in the derivatives segment in 2009-10 with a share of 99.998% of the total turnover in this segment. The share of BSE in the total derivative markets turnover fell from 0.11% in 2008-09 to 0.0013% in 2009-10. The total turnover of NSE in the derivative segment jumped by 50% during the first-half of 2010-11 compared to the corresponding period in the previous fiscal.

Table 3 : Comparison of Cash Segment Turnover with Equity Derivatives

Year	Total Equity Turnover in India	Total Equity Derivatives Turnover in India	OI at the end of the Turnover	% of Equity Derivatives Turnover to Equity Turnover
1	2	3	4	5
2001-02	820459	103851	2150	12.66%
2002-03	932062	442344	2201	47.46%
2003-04	1602587	2142521	7189	133.69%
2004-05	1658787	2563165	21052	154.52%
2005-06	2385632	4824260	38469	202.22%
2006-07	2901472	7415276	38683	255.57%
2007-08	5129895	13332786	48974	259.90%
2008-09	3852097	11022257	57705	286.14%
2009-10	5516833	17663899	97978	320.18%
2010-11	4682437	29248375	101816	624.64%
2011-12	3478391	32158208	89784	924.51%

Source: SEBI

India's experience with the equity derivatives market has been extremely positive. The derivatives turnover on the NSE has surpassed the equity market turnover. The turnover of derivatives on the NSE and BSE increased from 103851 crore in 2001-02 to 32158208 crore in 2011-12. India is one of the most successful developing countries in terms of a vibrant market for exchange-traded derivatives.

Conclusions

1. India's experience with the launch of equity derivatives market has been extremely encouraging and successful.
2. 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.
3. The equity derivatives volume has grown at an average annual growth rate of 107 percent year on year since 2001-02 till 2011-12.
4. The equity derivatives turnover was 12.66 percent of its underlying equity market turnover in the year 2001-02. Today in 2011-12 the equity derivatives turnover is 924.51 percent of its underlying equity market turnover.
5. Derivatives market growth has continued irrespective of equity cash market turnover growth. Equity market turnover has grown by 4.24 times during the period from 2001-02 to 2011-12, whereas during the same period the equity derivative market turnover has grown by 310 times.

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