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Chronicle on development pattern of financial derivatives (with special reference to Indian stock market)

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Abstract

The derivative market has become multi-trillion dollar over the years. Derivatives are financial commitments indexed in some capacity to changes in the value of underlying assets.

The bulk of the derivatives trading are internationally linked to currencies and interest rates, other derivatives are linked to equity or equity indices. The product of derivatives existence in Indian stock market is for minimizing price risk. The issue of the impact of derivatives trading on stock market volatility has received considerable attention at present scenario in India.

Keywords: Chronicle, financial derivatives, Indian stock market

1. Introduction

In India, the emergence and growth of derivatives market is relatively a recent phenomenon, since its inception in June 2000, derivatives market has exhibited an exponential growth both in terms of volume and number of traded contracts. Derivatives trading in India has surpassed cash segment in terms of turnover within a short span of years. The present study encompasses in scope on development pattern of financial derivatives in Indian stock market.

Statement of the Problem: Risk is a significant feature of all commodity and capital markets. The financial markets have experienced rapid variations in interest and exchange rates. Stock market prices thus exposing the growth of the corporate world for balancing financial risk. It highlights that the importance of risk management by means of hedging against uncertainty. Derivatives provide a solution to the problem of risk caused by uncertainty and volatility in underlying asset. Derivatives are instruments which have no independent value and their values depend upon underlying assets. The underlying asset may be financial or non-financial. Derivatives are risk management tools for transferring risk. The present study attempts to discuss the chronicle on development pattern of financial derivatives in Indian stock market.

Reviews

- **Bandivadekar and Ghosh (2003):** identified in their study indicate a decrease in spot volatility on introduction of derivatives. However, the reduction in the volatility of NSE nifty was due to introduction of derivatives.
- **Shree bhagawat and et al (2012):** in their study describe the concept of financial derivatives as the derivative revolution in the world of finance due to its full-fledged growth with incomparable swiftness all over the world.

Objectives

- To study, the development pattern on derivatives as anecdotes from Indian Stock Market.
- To view the progress of derivatives chronology and its uses in Indian Financial Market.

Scope: A derivative is a financial product which has been derived from another financial product or commodity.

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At present era the Indian stock markets are not having any risk hedged instruments that would allow the investors to manage and minimize the risk. In industrialized countries apart from money market and capital market securities, a variety of other securities known as derivatives have now become available for investment and trading. Derivatives are considered as innovative products in Indian capital market. The real growth and development of derivatives market are traced after 2000-2001 onwards.

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.

Evolution or Origin of Derivatives: In Indian stock market, the derivative is one of the categories of risk management tools. The initial decade of unprecedented volatility in the international financial environment occurred in the 1970's starting with the breakdown of Bretton woods system on 15th august 1971 and ending with the well-known Saturday night massacre of Federal Reserve on 6th October 1979. During the Bretton Woods era there was relative currency and interest rate stability. The breakdown of the Bretton woods system in august 1971, with US President Nixon's announcement that the dollar was no longer convertible to gold (at the rate of \$35 to an ounce) resulted in inflation, volatility interest rates and currency turmoil. This state of affairs heralded the origin of derivatives.

Development Pattern of Derivatives: The history of derivatives may be new for developing countries but it is old for the developed countries. The history of derivatives is surprisingly longer than what most people think. The derivative contracts were not done formally in the old times in the informal sectors. The advent of modern day derivative contract is attributed to the need for farmers to protect themselves from any decline in the price of their crops due to delayed monsoon or overproduction. The first derivative as "Futures" contract were introduced in the Yodoya rice market in Osaka, Japan around 1650. The contracts were evidently standardized contracts like today's Futures. The commodity derivative market has been functioning in India since the nineteenth century with organized trading in cotton trade association in 1875. In 1952, the government of India banned cash settlement and options trading. Derivative trading shifted to informal forwards markets. In recent years, government policy has shifted in favour of an increased role of market – based pricing and less suspicious derivatives trading. The first step towards introduction of financial derivatives trading in India was the promulgation of the securities law (Amendment) ordinance 1995. It provided for withdrawal of prohibition on options in securities. The last decade, beginning the year 2000, saw lifting a 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 exchanges NSE and BSE and their clearing houses/corporation in approved derivative contracts.

Business Growth of Derivatives: A Chronology

Table 1: Business Growth in Index Futures Segment

	Year	Index Futures	
		No. of Contracts	Turnover (Rs. Cr)
1	2000-01	90580	2365
2	2001-02	1025588	21483
3	2002-03	2126763	43952
4	2003-04	17191668	554446
5	2004-05	21635449	772147
6	2005-06	58537886	1513755
7	2006-07	81487424	2539574
8	2007-08	156598579	3820667.27
9	2008-09	210428103	3570111.40
10	2009-10	178306889	3934388.67
11	2010-11	165023653	4356754.53
12	2011-12	146188740	3577998.41
13	2012-13	96100385	2527130.76
14	2013-14	105252983	3083103.23
15	2014-15	129303044	4107215.20
16	2015-16	140538674	4557113.64
17	2016-17	66535070	4335940.78
18	2017-18	15173325	1185856.91

Source: www.nseindia.com

Table 2: Business Growth in Stock Futures Segment

S. No	Year	Stock Futures	
		No. of Contracts	Turnover (Rs. Cr)
1	2000-01	-	-
2	2001-02	1957856	51515
3	2002-03	10676843	286533
4	2003-04	32368842	1305939
5	2004-05	47043066	1484056
6	2005-06	80905493	2791697
7	2006-07	104955401	3830967
8	2007-08	2035887952	7548563.23
9	2008-09	221577980	3479642.12
10	2009-10	145591240	5195246.64
11	2010-11	186041459	5495756.70
12	2011-12	158344617	4074670.73
13	2012-13	147711691	4223872.02
14	2013-14	170414186	4949281.72
15	2014-15	237604741	8291766.27
16	2015-16	234243967	7828606.00
17	2016-17	173860130	11129587.14
18	2017-18	58698941	4245190.57

Source: www.nseindia.com

Table 3: Business Growth in Index Options Segment

S. No	Year	Index Options		
		No. of Contracts	Notional Turnover (Rs. Cr)	Premium Turnover (Rs. Cr)
1	2000-01	-	-	-
2	2001-02	175900	3765	1299
3	2002-03	442241	9246	112.70
4	2003-04	1732414	52816	991.48
5	2004-05	3293558	121943	2356.98
6	2005-06	12935116	338469	5770.52
7	2006-07	25157438	791906	17650.87
8	2007-08	55366038	1362110.88	29286.09
9	2008-09	212088444	3731501.84	91715.58
10	2009-10	341379523	8027964.20	124416.58
11	2010-11	650638557	18365365.76	192637.87
12	2011-12	864017736	22720031.64	253068.22
13	2012-13	820877149	22781574.14	184383.24
14	2013-14	928565175	27737341.25	244090.71
15	2014-15	1378642863	39922663.48	265315.63
16	2015-16	1623528486	48951930.60	351221.01
17	2016-17	1067244916	72797287.69	350021.53
18	2017-18	378005433	31471399.71	96336.11

Source: www.nseindia.com

Table 4: Business Growth in Stock Options Segment

S. No	Year	Stock Options		
		No. of Contracts	Notional Turnover (Rs. Cr)	Premium Turnover (Rs. Cr)
1	2000-01	-	-	-
2	2001-02	1037529	25163	1305.23
3	2002-03	3523062	100131	3033.97
4	2003-04	5583071	217207	8054.86
5	2004-05	5045112	168836	4948.95
6	2005-06	5240776	180253	4895.23
7	2006-07	5283310	193795	5904.31
8	2007-08	9460631	359136.55	13581.77
9	2008-09	13295970	229226.81	8250.53
10	2009-10	14016270	506065.18	15272.89
11	2010-11	32508393	1030344.21	20474.97
12	2011-12	36494371	977031.13	19612.93
13	2012-13	66778193	2000427.29	34288.56
14	2013-14	80174431	2409488.61	46428.41
15	2014-15	91479209	3282552.18	61732.59
16	2015-16	100299174	3488173.75	61118.39
17	2016-17	92106012	6107485.87	95570.09
18	2017-18	33825226	2559721.23	38441.20

Source: www.nseindia.com

Note: In case of Options contract “Turnover” represents “Notional Turnover” Premium turnover is calculated with effect from September 01, 2015.

Table 5: Business Growth in Futures and Options Segment

S. No	Year	Futures & Options		
		No. of Contracts	Notional Turnover (Rs. Cr)	Premium Turnover (Rs. Cr)
1	2000-01	90580	2365	11
2	2001-02	4196873	101926	410
3	2002-03	16768909	439862	1752
4	2003-04	56886776	2130610	8388
5	2004-05	77017185	2546982	10107
6	2005-06	157619271	4824174	19220
7	2006-07	216883573	7356242	29543
8	2007-08	425013200	13090477.75	52153.30
9	2008-09	657390497	11010482.20	45310.63
10	2009-10	679293922	17663664.57	72392.07
11	2010-11	1034212062	29248221.09	115150.48
12	2011-12	1205045464	31349731.74	125902.54
13	2012-13	1131467418	31533003.96	126638.57
14	2013-14	1284424321	38211408.05	152236.69

15	2014-15	1837041131	55606453.39	228833.14
16	2015-16	2098610395	64825834.30	262452.77
17	2016-17	1399746129	94370301.61	380525.41
18	2017-18	485702925	39462168.40	533272.55

Source: www.nseindia.com

Note: Daily turnover is presented after rounding off.

Average daily turnover is computed at segment level based on total trading days in the respective year across products.

Uses of Financial Derivatives

Derivatives are supposed to provide some services and these services are used by investors. Some of the uses of financial derivatives can be enumerated as following.

1. **Management of risk:** One of the most important services provided by the derivatives is to control, avoid, shift and manage efficiently different types of risk through various strategies like hedging, arbitrage, spreading etc... Derivatives assist the holders to shift or modify suitable the risk characteristics of the portfolios. These are specifically useful in highly volatile financial conditions like erratic trading, highly flexible interest rates, volatile exchange rates and monetary chaos.
2. **Measurement of market:** Derivatives serve as the barometers of the future trends in price which result in the discovery of new prices both on the spot and futures market. They help in disseminating different information regarding the future markets trading of various commodities and securities to the securities to the society which enable to discover or form suitable or correct or true equilibrium price in the markets, as a result, they assets in appropriate and superior allocation of resources in the society.
3. **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 underlying assets. In many instances, traders find financial derivatives to be attractive instruments than the underlying security. This is mainly offered by derivatives as well as the lower transaction costs associated with trading financial derivatives as compared to the cost of trading the underlying instrument in cash market.
4. **Speculation and Arbitrage:** Derivatives can be used to acquire risk, rather than to hedge against risk, thus, some individuals and institutions will enter in to a derivative contract to speculate on the value of underlying asset, betting that the party seeking insurance will be wrong about the future value of the underlying asset. Speculators look to buy an asset in the future at a low price according to a derivative contract when the future market price is low. Individual and Institutions may also look for arbitrage opportunities as when the current buying price of an asset falls below the price specified in futures contract to sell the asset.
5. **Price Discovery:** The important application of financial derivative is the price discovery which means revealing information about future cash market prices through the future market. Derivative 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.
6. **Hedging:** Hedge or mitigate risk in the underlying, by entering into a derivative contract whose value moves in the opposite direction to their underlying position

and cancels part or all of it out. Hedging also occurs when an individual or institution buys an asset and sells it using a future contract. They have access to the asset for a specified amount of time and they can sell according to the future at a specified price according to the futures contract of course, this allows them to the benefit of holding the asset.

7. **Price stabilization Function:** Derivative market helps to keep stabilizing influences on spot prices by reducing the short term fluctuations. In other words, a derivative reduces both peak & depths and lends to price stabilization effect in the cash market for underlying asset.
8. **Gearing of Value:** Special care and attention about financial derivatives provide leverage (gearing), such that a small movement in the underlying value can cause a large difference in the value of the derivative.
9. **Encourage competition:** The derivatives trading encourage the competitive trading in the market, different risk taking preference at market operators like speculators, hedgers, traders, arbitrageurs etc... Hence it results in increasing the trade volume to the country. They also attract young investors, professionals and other experts who will act catalysts to the growth of financial market.
10. **Other uses:** The other uses of derivatives are observed from the derivatives trading in the market that the derivatives has smoothen out price fluctuation, squeeze the price spread, integrate price structure at different points of time and remove gluts and shortage in the market. The derivatives also assist the investors, traders and managers of large pools of funds to device such strategies so that they may make proper asset allocation to increase their yields and to achieve other investment goals.

Summary and Conclusion

The most significant milestone in financial innovation is achieved with the issuance and trading of derivatives. Long with this positive element, the proponents of derivatives also admit that this term arouses more controversies and hence this reveals the fact is that derivatives are a standard risk management tool that enable risk – sharing and facilitates the efficient allocation of capital to productive investment activities.

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