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ROLE OF EXCHANGE TRADED FINANCIAL DERIVATIVES AS A CATALYST FOR INDIAN FINANCIAL MARKET

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ABSTRACT

This paper is an attempt to find out the influence of derivative market on Indian financial market with reference to equity, debt and currency markets. Exchange traded derivatives market had been introduced in India during 2000. Though different forms of derivatives market were in existence for the several decades, well regulated derivatives market has found its way in Indian financial market only recently. This paper analyses the introduction of exchanged traded derivatives market and its impact in the Indian financial market. It also tries to understand the influence of derivatives market in the growth of Indian economy. There are instances in the global economy wherein the economic crisis was reported in different countries due to undue influence of derivative products especially over the counter traded products. In India not much of debacle has happened barring few instances of structured products marketed by banks to the corporate. This paper tries to explain the structural change in the financial market of different underlying assets.

INTRODUCTION

Derivatives market has been in existence in India in some form or other for a long time. 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 trade. In 1952 the government banned cash settlement and options trading and derivatives trading had been 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.

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In the exchange-traded market, the biggest success story has been derivatives on equity products. Index futures were introduced in June 2000, followed by index options in June 2001, and options and futures on individual securities in July 2001 and November 2001, respectively. Derivatives on stock indexes and individual stocks have grown rapidly since inception. NSE launched interest rate futures in 2003 but, in contrast to equity derivatives, there has been little trading in them. Exchange-traded commodity derivatives have been trading since 2003, and the growth in this market is also phenomenal. Currency derivatives are introduced in the Indian exchanges in 2008. Interest rate futures are also introduced in the exchanges.

Following are the factors driving the growth of financial derivatives:

1. Increased participation of investors in financial market,
2. Increased integration of national financial market 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 participants a wider choice of risk management strategies, and
5. Innovations in the derivatives market, 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 use of derivatives varies by type of institution. Financial institutions, such as banks, have assets and liabilities of different maturities and in different currencies, and are exposed to different risks of default from their borrowers. Thus, they are likely to use derivatives on interest rates and currencies, to manage interest and exchange risk respectively. Financial institutions are regulated differently from non-financial institutions, and this affects their incentives to use derivatives. Indian insurance regulators, for example, are yet to issue guidelines relating to the use of derivatives by insurance companies. In practice, some foreign investors also invest in Indian markets by issuing Participatory Notes to an off-shore investor. FIIs and Domestic institutions are increasing their presence in the equity derivatives market. Retail investors are the major participants in equity derivatives.

In terms of the growth of derivatives market, and the variety of derivatives users, the Indian market has equaled or exceeded many other regional markets. While the growth is being spearheaded mainly by foreign institutional investors, retail investors, private sector institutions and large corporations, smaller companies and state-owned institutions are gradually getting into the act. The variety of derivative instruments available for trading is also expanding.

Indian commodity derivatives have great growth potential but government policies have resulted in the underlying spot/physical market being fragmented (e.g. due to lack of free movement of commodities and differential taxation within India). Similarly, credit derivatives, the fastest growing segment of the market globally, are absent in India and require regulatory action if they are to develop.

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SIGNIFICANCE OF THE STUDY

Financial markets are mostly affected by the following factors:

Investor sentiments
Global markets

Policy decision of Government including budget proposal

Expiring period of derivative contracts Monetary policy of Reserve Bank of India Annual monsoon
Corporate actions

Financial reforms in India have paved way for globalization, liberalization and privatization in the corporate sector. As a result of these reforms and introduction of exchange traded derivative market in India, there is lot of innovative activities in the financial markets. Especially the derivative market which has leveraged, innovative and structured transactions has much impact on the financial market as whole. Derivative products are not just a sophisticated way for investors to gamble. They also give producers/investors/fund managers a crucial tool for hedging against risk and uncertainty. They also play a vital role in the innovation that the financial markets have enjoyed during the last two decades. Many studies have been conducted over a period in this field especially the study of volatility of the market due to derivative transactions. But most of the studies have focused on the volatility alone in various markets in the international exchanges as well as Indian exchanges.

RELEVANCE AND IMPORTANCE OF THE STUDY

Since the inception of NSE in 1994, the market capitalization of the equity market has grown by 8 times and the derivatives segment of this exchange which was introduced in June 2000, has grown by 46 times and the average turnover also increased to that extent. Of the 1098 listed companies 150 are included as the underlying assets besides various indices are included in the derivatives segment for trading purposes. The derivatives segment is operated by the investors as a speculator, hedger and arbitragers making the market open to any type of trade by the participants. Not only domestic institutions but also the foreign institutions also participate in this market. With the opening of currency derivatives it makes more convenient for the participants to hedge their currency risk. Interest rate derivates takes care of the investment in debt related instruments. Interest rate derivatives are not widely traded in the exchanges even though the facilities are provided for this purpose. Major financial instruments are taken care by the derivatives market. Under these circumstances it becomes imperative to study the influence of the derivatives market in the economy. Before proceeding in this direction the impact study makes more important so that the participants will be able to take the informed decision about their investments. This will not only help the participants in the financial market but also the policy makers and the regulatory bodies and the financial intermediaries to take the cognizance of the issue and manage by regulations and guidelines periodically.

Country level variations in economic, financial and political characteristics provide opportunities to test existing and new implications from risk management theory. In addition, influential policy makers have recently suggested that access to derivatives can enhance macroeconomic development. Thus, it is important to determine the growth and impact of derivative market to promote the use of derivatives, if these factors can be influenced by policy.

Pradeep Kumar Panda and **Debshis Acharya** (2011) has indicated in their research paper that the recent global financial crisis of 2008 reverberated the stock markets across the world, from the Wall Street to the Asian markets, and led to sharp declines in stock markets, currencies and other asset prices. It also threatened countries' financial systems and disrupted their real economies, with large contractions in activity. The main impact of the global financial turmoil in India has emanated from the significant change experienced in the capital account in 2008-09. Foreign institutional investment (FII) flows are a major driver of Indian stock market. In 2007-08, net FII inflows into India amounted to \$20.3 billion. As compared with this, they pulled out \$11.1 billion during the first nine-and-a- half months of calendar year 2008, of which \$8.3 billion occurred over the first six-and-a-half months of financial year 2008-09 (April 1 to October 16). There has been a huge net outflow of (FII) from the Indian equity market. Foreign institutional investors, who need to retrench assets in order to cover losses in their home countries and are seeking havens of safety in an uncertain environment, have become major sellers in Indian markets. Given the importance of FII investment in driving Indian stock markets and the fact that cumulative investments by FIIs stood at \$66.5 billion at the beginning of this year, the pullout triggered a collapse in stock prices. As a result, the BSE Sensex fell from its closing peak of 20,873 on January 8, 2008, to less than 8000 by November 17, 2008. The cumulative market capitalization of Indian shares, which was \$1.8 trillion in January, has slumped even more dramatically to \$760 billion as the rupee has devalued. In addition, this withdrawal by the FIIs led to a sharp depreciation of the rupee. Between January 1 and November 17, 2008, the RBI reference rate for the rupee fell by nearly 25 per cent relative to dollar from Rs. 39.20 per dollar to Rs. 49.86.

In this context it is necessary to go in detail the investment pattern of various participants in the financial markets especially in the derivatives market to understand the impact of the derivative market on financial markets.

SCOPE OF THE STUDY

This research helps us to understand the different types of derivative products introduced in Indian financial market. It also helps us to relate the performance of the derivative market and its impact on the growth of the financial market and the price discovery mechanism. The study period is taken from 1994, the inception of the National Stock Exchange, which is the premier exchange for the derivative market in India as well as fast growing derivatives market internationally. The data is collected up to March 2013 in respect of various segments of the financial market. This enables the researcher to study the impact of the derivative market from its inception (2001) in India till 2013. As far as the pre derivative market period it is taken from 1994 to 2001

Peter Belling (2010) has shown major concern about the event studies is the use of only one estimation to conclude upon the volatility effect of derivatives and the methodology is therefore often open to question.

Macroeconomic variables or other uncontrolled variables may contaminate the volatility

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observations and make the conclusion illusive. This issue is addressed by **Schwert** (1989) who investigates the relation between spot market volatility and some macroeconomic variables using an ARCH process. He finds that high persistence in volatility and asymmetric responses shocks, especially during recessions (leverage effects), and the trading volume as the leading indicator for explaining the spot market volatility.

The present study encompasses impact of derivatives not only on the volatility in the market but also on other macro economic factors and the flow of money into the market from various financial intermediaries and foreign institutions.

Objectives:

To study the financial market with reference to pre and post emergence of exchange traded financial derivative market in India.

To analyse the participation of major players in the exchange traded financial derivatives in the Indian financial market.

To find out the influence of exchange traded financial derivative market in the growth of Indian financial market.

DATA ANALYSIS

The secondary data for this study was collected from the records and reports published by Reserve Bank of India, Planning commission, Ministry of Finance, SEBI, Exchanges and other international agencies.

Table 1-1: Trading Value of Different market segments

(` Crores)

Segment/Year	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Capital Market	1945287	3551038	2752023	4138024	3577412	2810893	2708279
Equity Futures & Options	7356242	13090478	11010482	17663665	29248221	31349732	31533004
Wholesale Debt Market	219106	282317	335952	563816	559447	633179	688788
Currency F&O *	--	--	162272	1782608	3449788	4674990	5274465
Interest Rate Futures **	--	--	--	2975	62	3959	0.22
Total	**9520635**	**16923833**	**14260729**	**24151088**	**36834929**	**39472753**	**40204536**

Source: NSE Data

*Trading in Currency Futures commenced on August 28, 2008

** Trading in Interest Rate Futures commenced on August 31,2009

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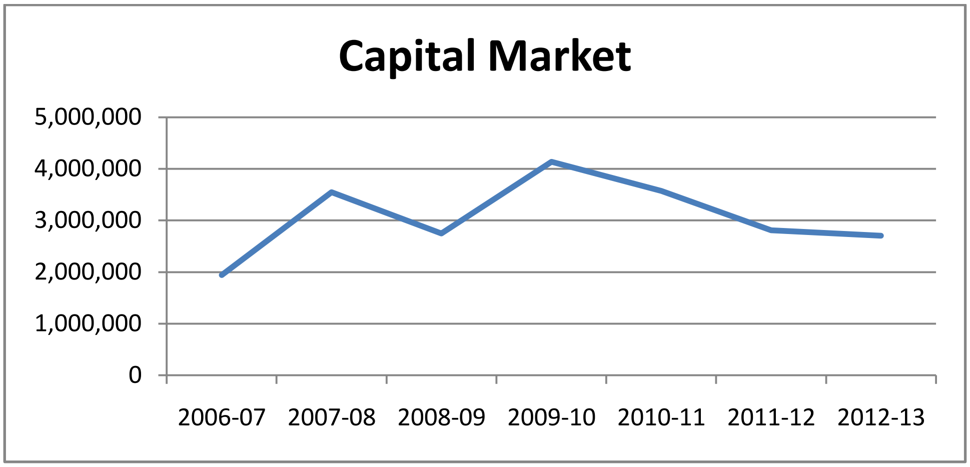
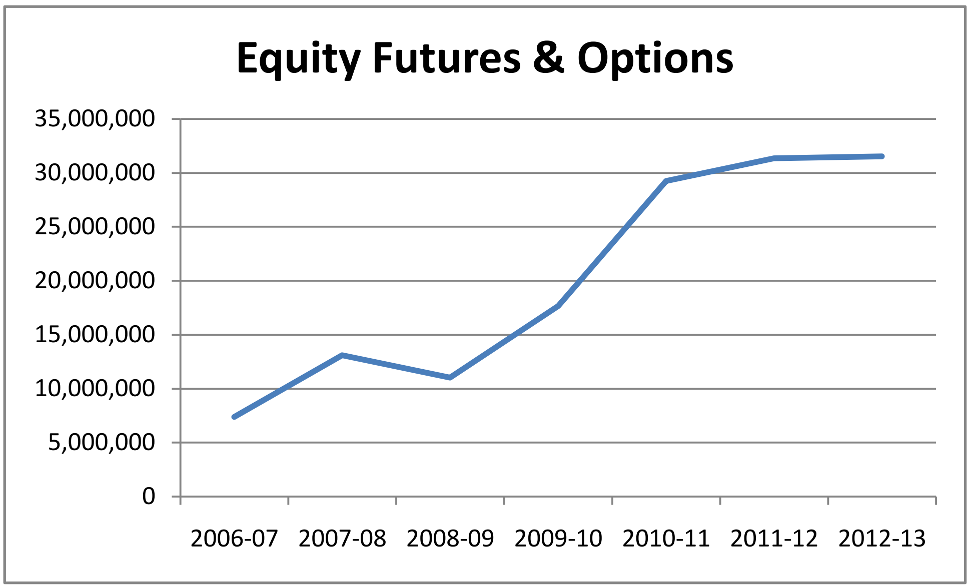


The value of trading in this segment has doubled during this period.



There is a steady growth in the derivative segment. The value of trading has increased by seven hold during this period.

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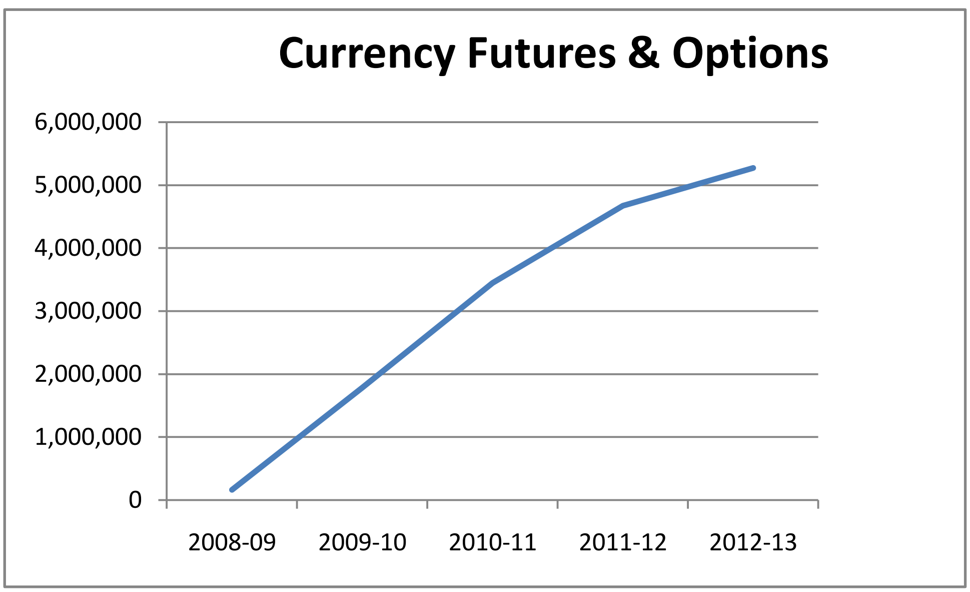
Wholesale debt market value of trading has increased from Rs.2 lac crores to Rs. 7 lac crores during this period.



Though currency derivatives was started late in the derivative segment there is a steep growth in this segment to the tune of Rs. 50 lac crores.

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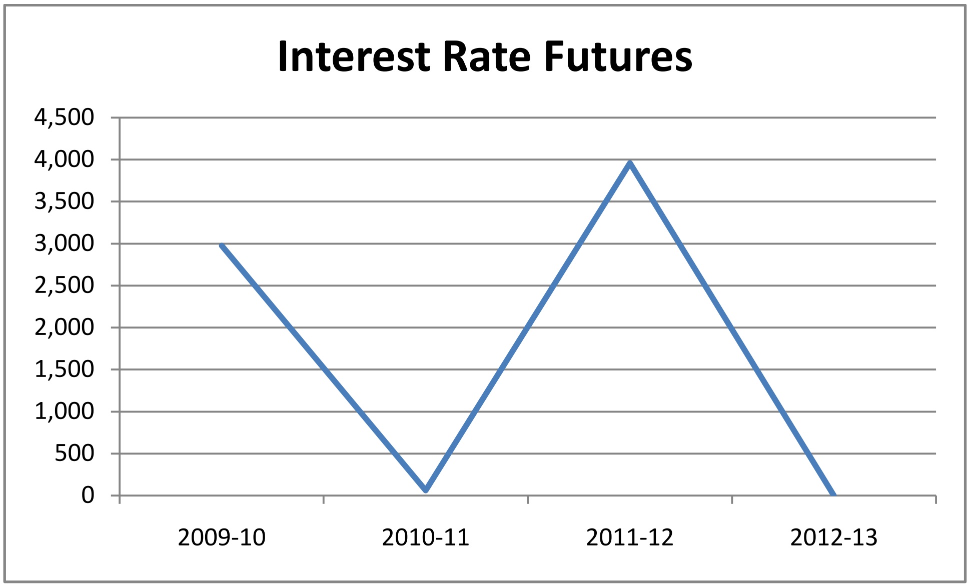
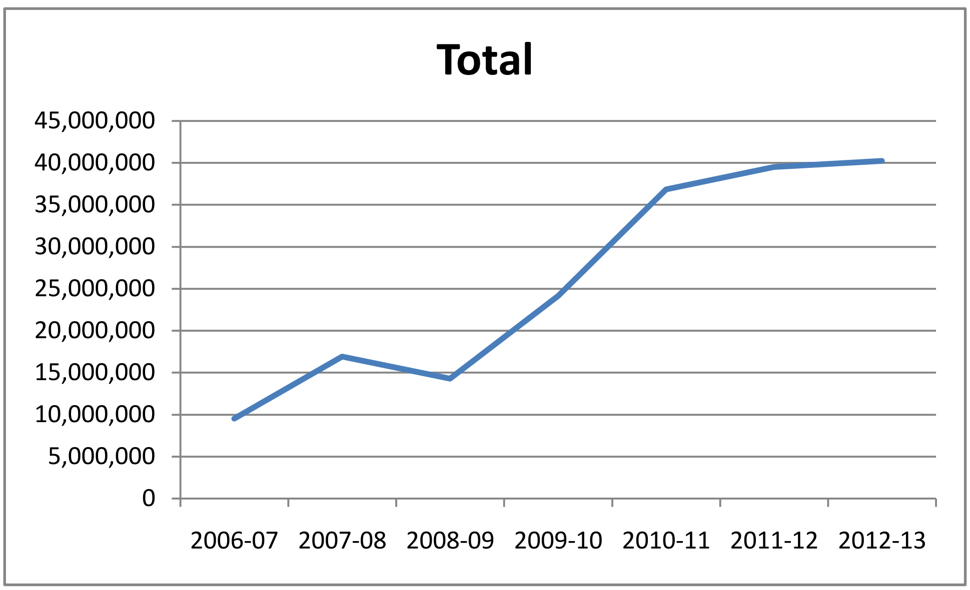


There is not much participation in this segment. Recently NSE bond futures are introduced to attract the retail participation in this segment.



There is an overall increase in the value if trading in the financial market, especially after the introduction of the derivative market in India. This stimulates and acts as a catalyst for all the segments of the financial market.

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Year	Market Capitalisation (cr.)
1994-95	363,350
1995-96	401,459
1996-97	419,367
1997-98	481,503
1998-99	491,175
1999-00	1,020,426
2000-01	657,847
2001-02	636,861
2002-03	537133
2003-04	1,120,976
2004-05	1,585,585
2005-06	2,813,201
2006-07	3,367,350
2007-08	4,858,122
2008-09	2,896,194
2009-10	6,009,173
2010-11	6,702,616
2011-12	6,096,518
2012-13	6,239,035

Market capitalization which is the indicator of the industrial growth of the company is steadily increasing with the participation of investors from every quarters.

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FINDINGS

The growth in the capital market for the past seven years is having a correlation coefficient of 0.20, which is not at a significant relevance, having a lesser growth compared to the futures and options in equity derivative market.

The growth in the Whole sale debt market and the currency market is having a correlation coefficient of more than 0.90 which is highly correlated to the futures and options in the equity derivative market.

Interest rate future which relates to the debt market is yet to see its growth in the exchange traded activities. This segment shows the negative correlation with derivative market in the equity segment.

Cash market in the equity segment is growing two fold over the past seven years after the inception of the derivative market, whereas the debt market is also growing three fold during this period.

Market capitalization in National Stock Exchange has grown from its inception to the introduction of derivative market by 75% and it has grown by 820% after the introduction of the exchange traded derivative market. This indicates that the presence of derivative instruments facilitates more number of participants in the market as speculators, hedgers and arbitrageurs. The presence of domestic and foreign institutions increases the level playing ground for all types of investors in the Indian financial market.

Traded quantity in the cash market has grown 143% over 5 year period prior to the equity derivative market and it has grown by 403% over 12 years during post derivative products of futures and options in equity segment is introduced in the National Stock Exchange.

Traded Value in the cash market has grown 354% over 5 year period prior to the equity derivative market and it has grown by 427% over 12 years during post derivative products of futures and options introduced in the National Stock Exchange.

In spite of growth in the cash market and derivative market there is no significant change in the number of clients registered for internet trading. In fact there was an increase during 2007 to 2009 and it has reduced by 50% during 2009 to 2013. After the debacle of equity market during 2008-09 the interest of the investor in internet trading has gone done considerably.

In the equity derivative market segments the correlation coefficient between number trades in Index future and Index option for the past 7 years remains at 0.22 which is not at significant relevance level. Index options have grown more than 18 times whereas the index futures remain almost in the same level.

In the case of Stock futures and options segment there is a negative correlation of (-0.65) which indicates as the stock futures trading numbers are decreasing stock option are increasing for the past seven years.

Trading value in the Futures and options segment is showing different level of growth in respect of different participants. The Institutional investors share in this segment has grown from 12.44% to 16.63% and Proprietary trade by the trading members has increased from 24.59% to 44.52% which has shown a larger participation by them. The retail investors' participation has come down from 62.97% to 38.85% which indicates the lack of confidence and participation in this market over the period.

Equity market index at NSE has the yearly mean value of 1214.90 and standard deviation of 284.22 during pre derivative period and has yearly mean value of 4084.80 and standard deviation of

1493.30 post derivative period. This indicates the risk in post derivative period which has to be managed strategically.

Price earnings ratio of the equity traded in National stock exchange has a yearly mean of 17.68 and a standard deviation of 3.52 during pre derivative market period and yearly mean value of Price Earnings ratio of 18.96 and standard deviation of 2.83 during post derivative period. This indicates there is not much of variation in Price Earnings ratio during the two period of comparison.

Traded value of the top 50 shares in the equity market has positive correlation with the market capitalization value of these shares. This indicates that the shares are traded in line with their market capitalization.

More studies are carried under various indices and equities of the National Stock Exchange to bring out the impact of derivative market. Other financial indicators are also compared to arrive at the influence of derivative market on various segments.

Conclusion

There are numerous complaints about the price rise and inflation due to introduction of derivative products in India by different segments of people. But the economists have countered their allegations by giving the empirical evidences and explanation to nullify their doubts. This paper provides the sufficient data to understand the role of the derivative products and its role for hedging the risk by the parties involved in the transactions. The risk management aspect of derivative market is yet to establish its importance in the minds of the corporate sector so that the growth of this segment will see enormous growth in the years to come. With the globalization the activities under the brand of FII (Foreign Institutional Investors) and FDI (Foreign Direct Investments) have established deep root in the shores of India. It is necessary to understand the risk management and role of derivative market by every investor as well as corporate sector to tackle any uncertainty in Price, Interest rate and Exchange Rate. It is necessary for the emerging institutional investors as Insurance companies, Pension funds, Hedge funds adapt to this market conditions by new techniques of transferring risk using hedging mechanism. Financial Products, Technology and Communication networks are the sources to establish the desired objectives in this segment.

As Indian derivatives markets grow more sophisticated, greater investor awareness will become essential. Exchanges have programmes to inform and educate brokers, dealers, traders, and market personnel. In addition, institutions will need to devote more resources to develop the business processes and technology which is necessary for derivatives trading.

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