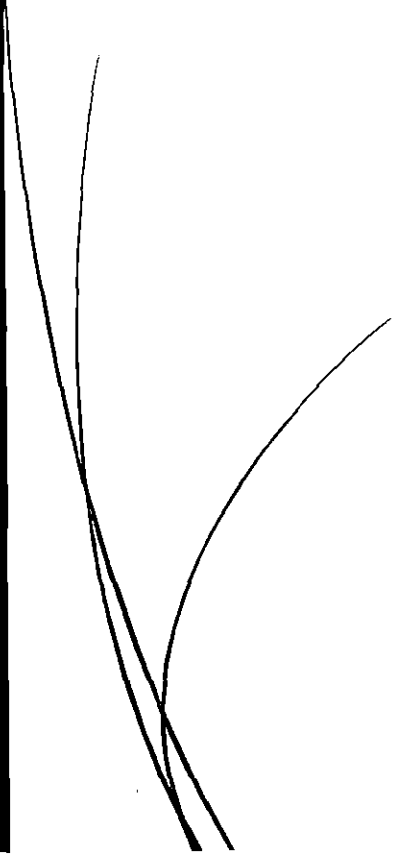




Chapter-6

*Summary, Conclusions &  
Suggestions*



## CHAPTER-VI

### SUMMARY, CONCLUSIONS & SUGGESTIONS

This chapter is the concluding part of the entire research work, which summarizes the findings of the research analysis, conclusion and suggestions. The suggestions and policy implications have been made keeping in mind the interest of investors, policy makers, regulators and academicians etc. The chapter ends with the scope for further research and limitations of the study.

#### 6.1 Introduction

The financial crisis gives the birth of reforms in the financial sector. The financial reforms took place in the Indian economy during the nineties. As a result, a vibrant secondary market was formed for stocks. For facilitating fair-trading to each market participant at a low cost, the reforms generated institutional structure. Though, in spite of the reforms the levels of concentration in trading as well as the level of speculative trades were too high. Because of this backdrop, the Gupta committee recommended the introduction of derivative instruments so that some of the speculative transactions, which currently take place in the spot market, can be attracted towards the derivatives market.

The derivatives market at the booming stage and become multi-trillion dollar markets over the years. Derivatives being vital for the stock market and they are not reducing in today's world and every institutional investor would want to use derivative as a tool to maximize its profits. The use of derivatives by various financial institutions and obstacles to derivative market development is debated. In my work, it is concluded that the derivatives market will continue to grow, and there is need to remove the obstacles in its way. Also, more products should be introduced in the derivatives market.

The financial markets can be subject to a very high degree of volatility by their very nature. Through the use of derivatives, the price risks can be transfer fully or partially by locking-in assets prices. Derivative products minimize the impact of fluctuations in asset prices on the profitability and cash flow situation of risk-averse investor.

Attributed as a major driving force behind growth and development of financial derivatives are:

- Increased volatility in asset prices in financial markets.
- Increased integration of financial markets with the international markets.
- Market improvement in facilities of communication and a sharp decline in costs.
- Providing economic agents a wider choice of risk management strategies through development of more sophisticated risk management tools.
- Introduction of new products in the market.
- Optimally combining the risks and returns over a large number of financial assets, leading to higher returns, reduces risk as well as transaction cost as compared to individual financial assets by innovations in the derivative markets.

By allowing the transfer of unwanted risk, derivatives can promote more efficient allocation of capital across the economy, increasing productivity in the economy.

The legal framework for derivatives trading is a crucial part of derivative market. The regulation plays a key role to ensure the efficient functioning of markets and avoidance of systemic failures. The main purpose of regulation is to promote the efficiency and competition rather than impeding it.

The market culture is a main contributory factor for success or failure of derivatives market, the underlying market including its depth and liquidity and financial infrastructure including the regulatory framework. The efficiency of derivatives market can be impaired through government interventions. The common regulatory objectives in all jurisdictions, like the financial integrity, efficiency, market reliability, and integrity and customer protection are critical to the success of any financial market.

The present state of earlier years of financial derivatives in India raises a number of crucial issues for policy and analysis. The very introduction of financial derivatives has been debated. One view is that the Indian market is not mature for highly leveraged products like derivatives, the introduction of which might enhance volatility in the asset markets turning them into 'casinos'. The other and opposite view is that

closer economic incorporation of the different countries of the world and progressive deregulation of financial sector, together with large fluctuations in real sectors of Indian economy in recent years, have exposed market players to different risks. India would be, according to this view, at a back foot unless financial derivatives as risk management tools are introduced. The later would, it is argued; improve liquidity and efficiency of the market by moderating volatility in the market for underlying assets. Derivatives are also seen as an indirect incentive for raising saving and investment rates in the economy. It may be too early to review the full impact on the Indian financial system of financial derivatives. Yet, it is of key importance for policy and, in particular, for the regulator (Securities and Exchange Board of India) to understand the basic mechanism of this new market and its interrelation with the underlying market.

After the introduction of the derivative market, there are certain changes that occur in the financial sector of the economy. These changes are in the price volatility, reduction in the risk of the investors and increase in the stock market trading. Thus, the purpose of this study is to highlight the impact of regulations and the development of derivatives product on the Indian Stock Markets. The main purpose of this study is to reveal the ongoing debate about the role of regulation and impact of Introduction of future derivatives on Indian stock market. Thus, the main research questions of this study are:

*'Whether the regulatory changes of derivatives market has affected the market efficiency of underlying stocks?'*

*'Whether the Introduction of financial derivatives have a significant impact on the spot market volatility?'*

Accordingly, the study analyses the regulatory announcement effect on the market efficiency of the underlying stocks by using Event Study and to analyses the impact of introduction of index futures and single stock futures on spot market volatility in India by using GARCH (1,1) model, the initial analysis of data set concluded that:

- Return series are not normally distributed and indicates skewness.
- The variance in error terms changes with time. This property of time series is called as heteroscedasticity.

- Squared returns are significantly correlated which shows volatility clustering and long memory behavior of returns.
- Presence of Strong evidence of ARCH effects in returns series.

The traditional measures of volatility were incompetent to capture the leptokurtosis, volatility clustering, mean reversion & heteroscedasticity characteristics of the time series data. GARCH model can effectively capture these characteristics & hence, has been used in this study.

The study is based on the following six objectives:

1. To trace the trend of the movement of the financial derivatives for the period of 14 years from 2000 to 2014.
2. To study the features in the present regulatory structure, its loopholes and put forward suggestions.
3. To analyze, whether the regulatory changes in derivatives market has affected the market efficiency of underlying Stocks.
4. To evaluate, whether the introduction of futures derivatives has a significant impact on the spot market volatility of indices and that of underlying stocks.
5. To examine, whether the futures derivatives can alter the structure of stock market volatility alone or changes in volatility is due to some other controlling factors.
6. To suggest policy implications, thereof.

## **6.2 Summary of Result and Findings**

After applying appropriate econometric and statistical tools researcher concluded certain valuable results and findings associated to the regulatory announcement effect and volatility effect of derivative market. Some findings and conclusions have been indirectly presented by the research in the present study. The available data have been analyzed with the help of appropriate econometric and statistical tools like Event Study Analysis, Unit Root Test, Autocorrelation Test, Normality Test, AR (1) and GARCH (1,1) model. The main results and finding are as below:

### 6.2.1 Regulatory Announcement Effect

*Objective 3: To analyze, whether the regulatory changes in derivatives market has affected the market efficiency of underlying stocks.*

In order to examine the impact of regulatory announcement of derivatives on market efficiency of underlying stock, the standard risk adjusted Event Study is being conducted. The event analysis technique examines whether any event has resulted in obtaining abnormal returns on the securities. Using ordinary statistical hypothesis testing procedures under the null hypothesis would draw assumptions about the abnormal returns due to an event.

**H<sub>0</sub>: AR=0**

Abnormal returns of stock prices show the impact of particular event on the stock prices after getting the values of alpha and beta. The expected return has been calculated and this has been further compared with the actual return. The actual return and expected average return within the event period should differ.

The results of 15 sample stocks are indicated that the amendments in derivatives market regulation i.e. Securities Law (Amendment) Act 2004 has not been affected the efficiency of underlying stocks. Here major concern is whether abnormal return around the event date (i.e. day = 0) is statistically significant or not.

The result concerning of all 15 sample stocks show that even though there are positive or negative returns, none of the abnormal returns are statistically significant on the event day (i.e. day =0). Since 1% level of significance the critical value of t-stat. is 2.528, the t-values of all the sampled stocks are less than the critical value. Thus, the null hypothesis that *abnormal returns are equal to zero* is **not rejected**.

Hence, it is concluded that the shareholders of the sampled stocks were not be able to earn abnormal return neither on announcement date nor day as defined by event period. This will lead to **accept** the null hypothesis that *Regulatory announcement has not affected the market efficiency of underlying stocks*.

The researcher concluded that the market for underlying stocks remains efficient in semi strong form even after the amendment in derivatives market regulation i.e. Securities Law (Amendment) Act 2004.

### 6.2.2 Volatility Effect

**Objective 4:** To evaluate, whether the introduction of futures derivatives has a significant impact on the spot market volatility of indices and that of underlying stocks.

**Objective 5:** To examine, whether the futures derivatives can alter the structure of spot market volatility alone or changes in volatility is due to some other controlling factors.

The present study also analyzed the impact of introduction of futures derivatives trading on the Indian stock market volatility. This has been discussed in two sections:

- Section-1 analyzed the impact of futures derivatives trading on Stock market volatility of indices and that of underlying stocks, based on 4<sup>th</sup> objectives of the study.
- Section 2. Examined the impact of futures derivatives on stock market volatility after controlling the macroeconomic factor, based on 5<sup>th</sup> objective of the study.

Every section has further separated into two parts. First part analysis is related to Index Futures and second part analysis is related to Single Stock Futures.

**Objective 4:** To evaluate, whether the introduction of futures derivatives has a significant impact on the spot market volatility of indices and that of underlying stocks.

#### **Section -1 (a) Impact of Index Futures on Stock Market Volatility:**

GARCH (1,1) model has been applied to analyze the impact of derivatives trading on stock market volatility of indices by using daily closing prices of S&P CNX Nifty & Nifty Futures. The data has been taken from 01<sup>st</sup> January 1996 to 11<sup>th</sup> June 2000 for pre introduction period and from 12<sup>th</sup> June 2000 to 11<sup>th</sup> June 2014 for post introduction period. Data for analysis have been collected from the official website of the NSE i.e. [www.nseindia.com](http://www.nseindia.com).

As a first step, daily closing prices have been used for calculating the lognormal returns.

In order to examine the pre and post effect of Index Futures, the descriptive statistics is used. A comparison of standard deviation of the Nifty return is estimated both before and after the introduction of Index Futures. The result presents that standard deviation has fallen from 0.018270 in the pre futures period to in the post futures period 0.015575. It can be concluded that Nifty volatility calculated by Standard Deviation describes the volatility in the post- futures is less than the volatility of the pre introduction of the futures. After that, for checking the stationarity of data, the researcher performed the ADF test with the null hypothesis of non-stationarity. The Null hypothesis of the Augmented Dickey-Fuller test assuming a unit root in daily Nifty & Nifty futures log returns have been rejected at 5% level of significance implying that daily Nifty and Nifty Futures log returns are stationary. The result of ADF has been showed that the p-value is less than the 5% level of significance. Hence, the null hypothesis of the ADF test assuming a unit root in daily Nifty log returns and Nifty futures log returns have been rejected at 5% significance level indicating that daily nifty log returns and Nifty futures log returns are stationary.

After that the mean equation has been formulated using Box Jenkins methodology as AR (1) model. The result of AR (1) model shows that the ARCH effect is present in the series.

After mean equation have been formulated as AR (1) model, the residuals of the model have been tested for the presence autocorrelation and heteroskedasticity or ARCH effect through the graph also, which indicated that small fluctuations are causing another small fluctuation for a long time and big fluctuation is causing another big fluctuation for a long time it means small volatility is causing another small volatility and big volatility is causing another big volatility for a long time. Thus, with this feature of volatility the researcher can introduce ARCH & GARCH model.

Further, a best GARCH family model will be chosen for analysis. A GARCH model will be best based on three assumptions. All three assumptions should be accepted. These assumptions are:

- There is no serial correlation.
- Residuals are normally distributed.
- There is no ARCH effect.



By using Ljung Box Q statistics researcher tried to check ACF (Autocorrelation function) and PACF (Partial Autocorrelation Function) of the residuals. The ACF and PACF showed significant correlation among the error term, which indicated that the mean equation is efficient enough to capture the dynamics of the time series. These residuals were then squared & Ljung Box Q statistic at lag 36 has been used again to test the ACF & PACF of the square residuals for any correlation. The results show that the p-value is more than 5% level of significance indicating, that there is no serial correlation.

To examine the second assumption that residuals are normally distributed some basic descriptive statistics of daily NSE Nifty log returns have been used. Some deviations from normal distribution have been also confirmed through the histogram of nifty returns. The results indicated that there exists excess kurtosis and a small skewness in the distribution of daily nifty returns compared to a normal distribution. The highly significant value of the Jarque Bera test statistics presents rejection of the null hypothesis of a normal distribution of Nifty log-return at 5% level of significance.

Further, the ARCH LM test has been used for testing the third assumption that there is no ARCH effect with the null hypothesis of no heteroskedasticity. The result shows that the p-value of chi-sq. is 0.2626 which is more than 0.05 at 5% level of significance which indicated that the null hypothesis of a normal distribution i.e. there is no ARCH effect; will be accepted. Thus, the result of ARCH LM Test at lag 36 defined that there is no ARCH effect. Error terms are not heteroscedastic. On the basis of above three assumptions, All the distribution models like the Normal Gaussian distribution, the Student-t with fixed degree of freedom and GED with fixed parameters gives the same results i.e. there is no serial correlation, No ARCH effect in the residuals. This is good sign but residuals are not normally distributed. The weakness of these three distributions is non-normality of residuals but many econometricians suggests that non-normality in the residuals may not be the serious problem as estimators are still consistent. Hence, we have chosen the student-t with fixed parameter as the best model for this analysis.

Therefore, GARCH (1,1) model has been used after examining the nature of data i.e. autocorrelation & heteroscedasticity in the error terms. For testing the impact of Index Futures on the volatility of Stock market, the GARCH (1, 1) equation has been

increased with a dummy variable taking value of '0' & '1' in pre and post derivatives period respectively.

The result shows that all the co-efficient in the conditional variance equation are significant at 5% level of significance including dummy variable as p-value being zero. The value of dummy variable coefficient is negative i.e. (-3.48E-05) which is indicating a decline in the volatility after the introduction of the index futures. Though, the degree of decline is only marginal. The sum of ARCH+GARCH term is very high. It is sum up to (0.167337+0.608543) 0.77 approximately. As a result, the rate of decay of particular shock on volatility is slow and volatility persists for a longer period of time.

The result indicates that the effect of introduction of index futures trading on Indian stock market may have impacted per se the volatility of the Nifty are confirmed. This is presented by the significance of the dummy variable. Furthermore, the measures of the effect due to the introduction of the Index futures trading (the value of the co-efficient dummy) has negative sign indicating that onset of the stock index futures results in reducing stock market volatility. The conditional volatility Graph is also presented that the volatility has declined.

The argument looks to confirm the decrease in volatility as a result of the activity in stock index futures. Thus, we **reject the Null Hypothesis** that *Introduction of Index futures does not affect the volatility of spot market.*

#### ***Section -1 (b) Impact of Single Stock Futures on Stock Market Volatility:***

GARCH (1,1) model has been used to observe the impact of introduction of Single Stock Futures on Stock Market volatility. The daily closing prices of S&P CNX Nifty & all 15 sampled Single Stock Futures have been taken from 01<sup>st</sup> January 1996 to 8<sup>th</sup> November 2001 for pre introduction period and from 9<sup>th</sup> November 2001 to 11<sup>th</sup> June 2014 for post introduction period. Daily closing prices have been used for calculating the lognormal returns.

The descriptive statistics have been used to analysis the pre and post effect of Single Stock Futures. A comparison of standard deviation of the Nifty Return is estimated both before and after the introduction of Single Stock Futures. Result shows that that standard deviation has fallen from 0.017803 in the pre stock futures period to in the

post stock futures period 0.015495. It is concluded that the volatility of Nifty in post-futures is less than the volatility of the pre introduction of the futures.

Further, for checking the stationarity of data, the ADF test has been conducted by the researcher. The result of ADF test shows that the calculated value of t-statistic is greater than the critical value and p-value is less than the 5% level of significance. Hence, the null hypothesis of the ADF test assuming a unit root in daily Single Stock futures log returns has been rejected at 5% significance level indicating that daily nifty futures log returns are stationary. The similar results have been achieved for all the sampled stocks

After that, the mean equation has been formulated, using Box Jenkins methodology as AR (1) model. AR (1) model has been used, as it is a preferred as the baseline model for formulating mean equation. For all SSF stocks, the same model has been used to maintain uniformity. The result indicated that the p-value is less than the 5% level of significance indicating that ARCH effect is presented. The similar results have been achieved for all sampled stocks.

After mean equation have been formulated as AR (1) model, the residuals of the model have been tested for the presence autocorrelation and heteroskedasticity or ARCH effect through the residual graph also. The graph shows that with this feature of volatility researcher can introduce ARCH & GARCH model.

Further, for analyzing the impact of Single Stock Futures on Stock market volatility the GARCH (1,1) model has been applied. The dummy variable has been included in the variance equation with the value of '0' & '1' in pre and post derivatives period respectively. A significant positive coefficient points towards an increase in volatility, due to derivatives & vice versa. The result of GARCH (1, 1) model indicated that coefficient of dummy variable is negative in case of 10 out of 15 sampled stocks and is significant, same is insignificant and negative in case of 5 out of 15 sample Single Stock futures. Thus, percentage of sampled stock shows that the volatility has been decreased which is significant is 67% and volatility has been decreased which is not significant is 33%. Hence, volatility has been decreased in case of 100% stocks. The coefficient of dummy variable is negative (whether significant or not) in all 15 sampled stocks indicating decline in volatility after the introduction of SSFs. The sum of ARCH+GARCH term is quiet high. It is sum up to 0.92 to 0.97 approximately. As

a result, the rate of decay of particular shock on volatility is slow and volatility persists for a longer period of time.

Thus, it is concluded that volatility of stock market has been decrease after the introduction of Single Stock Futures.

Therefore, We **Reject the Null Hypothesis** that *Introduction of Single Stock futures does not affect the volatility of spot market*. The decrease in stock market volatility after the introduction of derivatives period has been reported for Index Futures & Single Stock Futures as well, which leads to reject the null hypothesis of *Introduction of futures derivatives does not affect the volatility of spot market and of their indices as well as individual stocks*.

**Section 2 - Objective 5:** *To examine, whether the futures derivatives can alter the structure of spot market volatility alone or changes in volatility is due to some other controlling factors.*

**Section 2(a) Index Futures can alter the structure of spot market volatility alone.**

For this purpose, the Daily closing price of the data has been used from the range of 1<sup>st</sup> Jan 1996 to 12<sup>th</sup> June 2014. The daily closing price has been converted into lognormal returns for making the data stationary.

After that, by using the ADF test with the null hypothesis of non-stationarity has checked the stationarity of data. The result shows that the calculated value of t-statistic is greater than the critical value and p-value is less than 5% level of significance indicating that daily nifty log returns are stationary.

Then, we have taken a control variable in the mean equation to separate the effect of derivatives from other macro economic factors. The mean equation has been extended with returns on nifty junior index.

Thus, the error terms from the mean equation will be indicated the impact of derivatives trading only. After that, these error terms will be formed in the variance equation to get the volatility coefficients.

By using box Jenkins methodology, the mean equation has been formulated as AR (1) model. The result shows that low p-value of AR (1) model indicating that the

presence of ARCH effect. After mean equation have been formulated as AR (1,) model, the residuals of the model have been tested for the presence autocorrelation and heteroskedasticity or ARCH effect through graph also. The graph shows that residuals or error term is conditionally hetroscedastic and it can be represented by ARCH & GARCH model. Hence, ARCH and GARCH model has been introduced.

Therefore, after analyzing the nature of data i.e. autocorrelation & heteroskedasticity in the error terms, GARCH (1,1) model has been used with the purpose of testing the impact of Index Futures alone on the volatility of Stock market, the GARCH (1, 1) equation has been augmented with a dummy variable taking value of '0' & '1' in pre and post derivatives period respectively.

The result of GARCH (1,1) model indicated that the coefficient of dummy variable after controlling the impact of other macroeconomic factor is -5.29E-06 while it was -3.48E-05 before controlling the impact of other macroeconomic factors. Hence, even after controlling the market wide variable, the coefficient of dummy variable is negative & significant indicating a decrease in volatility as a result of Index Futures trading only but the decline is only marginal.

Therefore, on the basis of above results **THE NULL HYPOTHESIS** that *Index futures do not alter the structure of volatility of spot market alone WILL BE REJECTED.*

### **Section 2(b): Single Stock Futures can alter the structure of spot market volatility alone**

Similar procedure has been adapted to analysis whether the Single Stock Futures alter the structure of stock market volatility alone. The mean equation for all 15-sample stocks has been augmented with the logarithmic returns on nifty junior index. This has separated the effect of derivatives from other controlling factors. As a result, the error terms from the mean equation indicate the impact of Single Stock Futures alone. The mean equation has been formed as AR (1) model. The result shows that the p-value is below 0.05 at 5% level of significance indicating the presence of ARCH effect or heteroskedasticity. After AR (1) model, the residuals of the model have been tested for the presence autocorrelation and heteroscedasticity or ARCH effect through graph. The Graph shows that the small volatility is causing another small volatility

and big volatility is causing another big volatility for a long time. Hence, with this feature of volatility the researcher can introduce ARCH & GARCH model.

The GARCH (1, 1) equation has been augmented with a dummy variable taking value of '0' & '1' in pre and post derivatives period respectively.

To examine whether the SSF's can alter the structure of volatility of stock market alone the coefficient of dummy variable has been included in the variance equation. A significant positive coefficient points towards an increase in volatility, due to derivatives & vice versa. The result of GARCH (1, 1) model of all sampled stocks indicated that in case of 11 out of 15 sampled stocks the coefficient of dummy variable is negative and significant and in case of 4 out of 15 sampled stocks the coefficient of dummy variable is negative but insignificant. The percentage of stocks showing a decline in volatility, which is significant, is 73% and 27% is insignificant. Hence, the volatility has been decrease in 100% stocks, whether it is significant or not. The coefficient of dummy variable is negative (whether significant or not) in all 15 sampled stocks indicating decrease in volatility causing the introduction of SSFs only. The sum of ARCH+GARCH term is quiet high. It is sum up to 0.92 to 0.98 approximately. As a result, the rate of decay of particular shock on volatility is slow and volatility persists for a longer period of time.

The result indicates that the structural changes in the volatility of the Nifty due to Single Stock Futures are confirmed. Thus, we concluded that volatility of stock market has been decrease after the introduction of Single Stock Futures only.

The decrease in stock market volatility after the introduction of derivatives period has been reported for Index Futures & Single Stock Futures as well. Hence, We **Reject the Null Hypothesis** that *Futures derivatives do not alter the structure of spot market volatility alone of their indexes as well as individual stocks.*

**Table 6.1: Summary of Hypotheses Testing**

<i>No.</i>	<i>Hypotheses</i>	<i>Results</i>
<i>H<sub>01</sub></i>	<i>Regulatory announcement has not affected the market efficiency of underlying stock.</i>	<i>Accepted</i>
<i>H<sub>02</sub></i>	<i>Introduction of futures derivatives does not affect the volatility of spot market and of their indices as well as individual stocks.</i>	<i>Not Accepted</i>
	<i>H<sub>02a</sub>: Introduction of Index futures does not affect the volatility of spot market.</i>	<i>Not Accepted</i>
	<i>H<sub>02b</sub>: Introduction of Single Stock futures does not affect the volatility of spot market.</i>	<i>Not Accepted</i>
<i>H<sub>03</sub></i>	<i>Futures derivatives do not alter the structure of spot market volatility alone of their indexes as well as individual stocks.</i>	<i>Not Accepted</i>
	<i>H<sub>03a</sub>: Index futures do not alter the structure of volatility of spot market alone.</i>	<i>Not Accepted</i>
	<i>H<sub>03b</sub>: Single Stock Futures do not alter the structure of volatility of spot market alone.</i>	<i>Not Accepted</i>

*Source: Researcher's own compilation*

### **6.3 Conclusion**

Financial crisis gives the birth of reforms, reforms pave the way for the introduction of new risk hedging instruments like derivatives, and introduction of new instrument or product is the part of the development of the market.

On the basis of earlier studies it is clear that the major causes of financial crisis were high speculative activities and regulatory inefficiency or failures. High speculative activities generate high volatility in the market and high volatility can be the cause of market crash. Therefore, it is important for regulators, and policy makers that they should do regular monitoring, analysis the market structure and amendment in laws time to time and introduced new product for further development of the market so that market can be safe from the sudden generated dangers and risks. My research work tried to attempt this issue with the help of analyzing the impact of regulations and introduction of futures derivatives on stock market.

On the basis of my research analysis it is concluded that in case of regulatory announcement effect, the amendments in regulation of derivatives market i.e. Securities Law (Amendment) Act 2004 has not been affected the market efficiency of underlying stocks. On the other hand, regarding the impact of futures derivatives on stock market volatility, Index Futures and Single Stock Futures have led to decline in volatility of spot market in India.

Some researchers are of the view that derivatives are very dangerous instrument and it is the main cause of market crashes. Yes, at some extent this is true but we cannot ignore its benefits. Basically, derivatives were introduced in India as a hedging instrument but the other hidden objective behind the introduction of derivatives was to shift the high speculative activities from capital market to derivative market. The regulators and policy makers became success in their objective at some extent but the desire of a person to earn more and more money and lack of awareness about this new product make it dangerous.

Hedgers and speculators are two wheels of a vehicle. Hedgers are those who do not want to take risk they want to safe himself from unwanted risk with the help of derivative. The risk will be generated in future due to price fluctuation in the assets or other factors. Speculators are those who are interested to bear risk. Hence, hedgers use derivatives to reduce the risk, which arises due to adverse movements in prices of underlying assets whereas; speculators are those who are ready to take a risk from some return. Speculators participate in the market either expecting that the market price will go up or go down. It should be noted that speculative trading is very complex and dangerous. If one trades poorly, it may lead to huge losses. There are number issues that investors need to consider while doing speculative trading. They need to have oversight on future prospects moreover they also need to exercise good judgment on possible financial behavior. Additionally, investor must have ensured that their predictions fall in line with the nature of regulation in their operating environment.

Hence, derivatives are powerful hedging instrument, which can be relatively beneficial if handled correctly. It is a fact that you can lose a large amount of money in derivatives trading very quickly when the event that you thought was going to happen failed to occur.



The regulatory framework of derivatives trading is a critical part of overall regulatory framework of derivatives markets. The regulations and control of derivatives trading and settlement have been approved by the appropriate amendment to the byelaws of the stock exchanges where derivatives trading were allowed. However, the position of state intervention in the functioning of markets is a matter of considerable debate. It is generally decided that regulations have a very important and critical role to ensure the efficient functioning of markets and avoidance of systemic failures. The main objective of regulation is to promote the efficiency and competition rather than hamper it

The derivatives were introduced to boost the efficiency and competitiveness of the Indian financial market and with the help of special policies of regulatory framework of derivatives market, the regulators and policy makers eliminate the risk, which helps to put the investors on safer side of investment.

After the introduction of the derivative market, there are certain changes that occur in the financial sector of the economy. These are changes in the price volatility, reduction in the risk of the investors and increase in the stock market trading. Thus, the purpose of this study is to highlight some of the issue relating to the financial futures in India. The main purpose of this study is to reveal the volatility effect of the Indian financial futures market. It also studies the impact of regulatory announcement on market efficiency of underlying stocks and the various developmental works in the derivative market.

For this purpose, the researcher has employed appropriate econometrics and statistical tools on the available data. After the analysis of data the researcher found that the market for underlying stocks remains efficient in semi strong form even after the amendment in derivatives market regulation and the structural changes in volatility due to futures derivatives are confirmed which indicated that derivatives make sure better market efficiency.

#### **6.4 Suggestions**

On the basis of above results, researcher is going to give some fruitful suggestions which are as below:

- There was a point of debate in the L.C. Gupta Committee report on the introduction of separate derivatives exchange. But after analyzing, it has been found out that the present situation of the market is not relevant for introducing separate exchange for derivatives as the current arrangement and structure enable to carry out the trades efficiently. Therefore, there is no need to introduce a separate derivatives exchange presently.
- A strong single clearing corporation should be set up under exchange to clear all trades. This would help control settlement of trades in an efficient and transparent manner controlling to lower defaults in delivery and payment in multiple markets.
- The decline in the volatility after introduction of futures should relieve the worry of market participants especially that of market regulators. Therefore, this research work unties the strong relationship between stock and futures market and it suggested to adopt a microstructure perspective in dealing with the functioning of the modern capital markets.
- Rules and regulations related to investment in derivatives segment should be made easy for investors.
- New regulatory policies should be introduced in the market for the development of the market integrity and efficiency because the lack of regulatory monitoring and pitiable disclosure practice could be the cause of market inefficiency.
- For reducing the speculative trade practices in the market it is important for regulators that they should improve the payment and settlement system for derivatives trading.
- To have a reliable method of accounting for losses and gains from the derivatives trading, an appropriate framework to account for derivatives requires to be developed.
- The market structure, margin requirements, contracts design, and other measures should be constructive to all categories of investors to participate in these markets.

- Strong effects have to be measured to bring different participants to the market in order to attain minimum liquidity and strength of the market.
- The government should carry on its efforts to make stronger the stock exchanges and execution of awareness programs among investors and other market participants for increasing participation in derivatives markets.
- The transparency has been increased by the growth of distribution of price and volume information. The price and volume data has been improved the risk management efficiency. Hence, it provides great degree of protection to the investors.
- No appropriate accounting and taxation policy has been formed for derivatives trade in India. The VAT announced in the country in 2005 has not yet been uniformly executed by all States, it is causing the variation in the prices. Hence it is clear that taxation policy should be uniformly formed so that a truly national market can be developed for derivatives.

### 6.5 Scope for Further Research

- Current research work is based on futures market only while most of the derivatives and equity markets are based on exchange rate on a large scale and they are highly fluctuating in nature. Hence, further research work will be done on exchange rate.
- The present study is limited to small sample companies. By using large sample companies; future research may shed much more interesting results.
- Event Study Analysis has been conducted to analyze the announcement effect of regulation. For further research, other econometric and statistical tools can be used for any event.
- The daily data of near month is only used in this study instead of high frequency data. For future research, the high frequency data can be used for near month, middle month and far month.
- For analyzing the volatility effect, the GARCH (1, 1) model has been applied while there are various advance statistical tools and econometric models present, which can be provide better results.

- Study is limited to Indian Stock market. For future research, the researcher should concern to take a broad view about other stock markets.
- The Eviews 7 has been used in this study. For further research the more advanced software can be used for analysis for getting better results.
- This study focused only futures market instead of other financial derivatives products. The further research can be done by taking index options, stock options, interest rate derivatives and currency derivatives also.
- Further research can be done by analyzing the hedging effectiveness of derivatives trading as it helps the investors to take investment decisions.