

## Equity Derivatives as Risk Management Instruments : A Study of the Level of Satisfaction of the Investors

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### Abstract

*In India, the significance of capital market as a contributor for the growth of the economy is increasing day by day. The growth in global trade, technological advances and the market deregulations are the factors influencing this development. With the increasing awareness about the capital markets, a large chunk of investors are entering the markets to invest their funds and earn profits. But, as a by-product of this market, there is market volatility which is likely to cause the risk of loss to the investors. As a result there has been a corresponding increase in such financial products which enable the investors to minimise or hedge the various risks associated with the capital markets. Derivatives are the financial instruments which are widely used by the investors for this purpose. The study is an attempt to identify the strategies of risk management which the retail investors can use to minimise the risks associated with stock market investments.*

**Keywords:** *Equity Derivatives, Risk Management, Investment, Hedging*

### Introduction

It is important to understand the risks involved in investments in the stock market in India and the ways in which these risks can be minimised through the usage of Equity Derivatives. The various techniques available for risk management using Equity Derivatives and also ascertaining the primary intention with which the investors trade with these instruments. A derivative is a financial instrument whose value is determined by the underlying asset such as a stock, commodity etc. The various types of derivatives available in India include the futures, options, swaps etc. Besides, they include index linked derivatives.

The purpose of the study is to apprise the various risks involved in the capital markets and the way these risks could be effectively minimised using the equity derivatives. Also, the study seeks to examine the basic purpose for which investors usually trade in equity derivatives.

### Significance of the Study

The derivatives are understood to be the instruments that help in hedging, transfer or minimising of the risk to the investors. Many studies have been previously conducted to study how the companies use derivatives for their benefits, especially the use of commodity derivatives to minimise the risk from fluctuation in material prices, use of currency derivatives to hedge the foreign exchange risks. These instruments are used not only by the corporate, but also by the retail investors. Even the retail investors who wish to transfer their risk to the ones', who are willing to take risk, may make use of the derivatives, especially the equity derivatives. Hence this research aims to study the ways in which

retail investors can use equity derivatives for reducing risks involved in investing in equity market. The study is an attempt to identify the strategies of risk management which the retail investors can use to minimise the risks associated with stock market investments.

### Objectives of the Study

- (i) To make an overall study of the derivatives market in India, and more specifically the trading of derivatives in a typical stock broking firm.
- (ii) To study the major risks involved in trading securities in the capital markets, and to examine the strategies involving the use of equity derivatives being used to minimise such risks.
- (iii) To assess the extent to which investors use strategies involving the use of equity derivatives, and also to identify the primary objective behind their use of equity derivatives.

### Methodology, Scope, Data Sources and Analytical Tools

The duration of this study was limited to two months, and was conducted at Motilal Oswal Securities Ltd., Mangalore, Karnataka, India. The sample size was 30. Primary sources of data include official records available with the dealers at Motilal Oswal Securities Ltd, Mangalore. These sources also include data collected from the customers of Motilal Oswal, through the use of Questionnaire. Secondary sources of data include various authentic publications on finance, research journals, and official websites, relevant regulatory authorities and government departments.

The data collected as above was analysed using common statistical and mathematical tools. SPSS (Statistical Package for Social Sciences) has been used extensively for the statistical analysis.

### Literature Review

S.M. Lokare, in his research paper titled *Commodity Derivatives and Price Risk Management: An Empirical Anecdote from India, (2007)*, concludes that, by taking a position in the derivatives market, a producer can potentially offset losses in the spot market. This argument of risk reduction through hedging rests on the fact that the spot and future markets move together so that losses in one market can be made good through gains in another market. David Walsh in his journal article Risk Management Using Derivative Securities (1995) has said that, hedging risk of any sort using derivative securities has become an important part of any financial manager's job. He has discussed the strategies that can be used for hedging the risks using derivatives like forwards, futures, options and swaps.

An article by Srivastava, Sandeep, Surender S. Yadav and PK Jain, "Derivative Trading in Indian Stock Market: Broker's Perception", in IIMB Management Review, 2008, Vol 20, states that in India 25-30 percent of the total trading turnover of the derivative segment is contributed by the retail investors. The maximum trading was done in futures on individual shares. The study found that the investors use these securities for different purposes like risk management, profit enhancement, speculation and arbitrage.

### Data Analysis and Interpretation

The analysis of the data collected from various sources and its interpretation are presented in the following paragraphs, with a view to draw meaningful conclusions from the analysis.

Table 1 shows the age group of respondents who trade in the derivatives market. The highest number of respondents (53.33 percent) belong to the age group of 25-40 years and the minimum share comes from those who are below 25 years. The reason for this could be lack of practical knowledge about derivatives or comparatively lesser amount of investible funds in the hands of these investors.

Table 2 reveals that nearly 80 percent of the respondents fall within the income range of Rs. 2 Lakh to Rs. 6 lakh. The derivatives have to be traded as per the minimum quantity specified by the exchange (lot size), and generally the minimum contract size that has to be traded is Rs. 2 lakh. The investor in derivatives must have sufficient investible funds in hand, which is possible only if he has sufficient income out of which he has to set up investible corpus. Added to this factor, the brokerage cost on the derivatives may seem to be costlier for the investors with low income groups.

As per Table 3, historically stock markets have been one of the high return yielding investment avenues. The BSE's SENSEX and the NSE's NIFTY have given the returns as high as 24.5 percent and 25.5 percent respectively in the year 2012. This fact is reflected in the response of the respondents where, 57 percent of them agreed that the stock market is one of the high return yielding investment avenues, and 20 percent of them strongly agreed to this fact. About 20 percent of the respondents took a neutral stand.

It is a known fact that, to earn a high rate of return the investor must take the risk. Therefore, when stock market has been proved to be one of the high return yielding investment avenues, there has to be a risk factor in it. And this has been proven by the survey results in Table 4 in which 20 out of the 30 respondents (66.7 percent) have agreed to the fact that stock market investments are risky and another 30 percent of the respondents have strongly agreed to this fact. So in total almost 97 percent of the respondents have sensed this fact about the stock markets, the rest of them (3 percent) have taken a neutral stand and not even a single respondent has denied this fact.

The main intention of this question is to find out the different meanings of the word 'Risk' in the stock markets as perceived by the investors. Through the survey (Table 5) it was evident that around 47 percent of the respondents understand risk as the loss due to market volatility. Hence, majority of the respondents believe that, there are high risks of loss in the stock markets when the markets fluctuate wildly, which is nothing but the systematic risk. Another 27 percent of the investors perceive risk as the variability in the rate of returns for which the reason might be any factor affecting either the entire market or an individual company. About 20 percent of the investors have perceived it as similar to the unsystematic risk i.e. attached to individual scrip.

Though the exchange traded derivatives are the recent developments in Indian stock markets, which were introduced about a decade ago, they have been well accepted by the investors, and this is evident with the increasing trade volume in the Indian derivative markets. Therefore an attempt to find out the advantages, for which the exchange traded derivatives have become popular, was made through the survey. Hence it is evident from Table 6 that major advantage of derivative trading is the opportunity to hedge risks (opted by 37 percent of the respondents). Similarly, availability of leverage and opportunity to make profits through speculation are the other advantages of trading in derivatives (opted by 30 percent and 33 percent of the respondents respectively).

The main aim of introduction of derivatives in Indian stock exchanges is perceived to be risk minimisation. To find out the relevancy of this perception, a question regarding this was asked in the

survey and it is evident from Table 7 that, 53 percent of the respondents believe that derivatives are useful for risk minimisation and 16.7 percent of them have strongly agreed to the fact. A fair proportion of the respondents (16.7 percent) have taken a contrary position by saying that derivatives are not much useful for hedging risk. And about 14 percent of the respondents have taken the neutral stand.

An effort was made to find out the type of derivative which is widely traded by the respondents. It is evident from (Table 8) that a majority of the respondents (86.7 percent) trade in Equity Derivatives and only 13.3 percent of the respondents trade in Commodity derivatives. It is also evident that none of the respondents trade in currency derivatives and the reason for this may be that, the retail investors do not prefer to trade in currency derivatives as they are less exposed to foreign exchange risks and they may also find it difficult to understand the way in which the currency derivatives operate.

Table 9 shows the data regarding the cross comparison of two variables viz time period which the respondent had been investing in stock markets and the other variable is whether they are aware of the risk minimising strategies using equity derivatives. The above table shows that, there are 10 respondents who have been investing for more than a year ,but less than 3 years, and out of them only 3 (i.e, only 30 percent) are aware of the risk minimising strategies. Whereas under the category of respondents who have been investing for more than 3 years, there are 19 respondents, among whom 14 (74 percent) are aware of these strategies. Thus it can be proved that longer the experience of investment in stock markets, more will be the expertise and knowledge the investor will receive.

There are many strategies available for the investors to minimise the risk using equity derivatives, but finding out the strategy that is most widely used is a difficult task. The survey made an attempt to find the answer and it is evident from Table 10 that, investors use spreads, strangle and futures arbitrage almost in an equal manner and majority of the respondents (53 percent) have selected the option 'others' where they have specified the other strategies like hedging using futures, selling single call/put etc. 10 out of the 16 respondents who have selected the option 'others' have specified that, they do not use any of the strategies.

Table 11 shows that majority of the respondents (53.3 percent) use equity derivatives for the purpose of making more profits, and another 30 percent of the respondents use them for speculation purpose. Though the major purpose of introduction of equity derivatives was for risk hedging, their importance and purpose has evolved over the period of time. According to the respondents, the reason for it is the large volume of funds that is pumped into the derivatives segment in India and high liquidity arising out of it. When the markets are highly liquid, it gives an opportunity for the investors to trade more and make profits, and there is enough scope for speculation.

Table 12 shows that the respondents have equally (33.33 percent each) rated index futures and stock options as the instruments that are more helpful to hedge the risk. Similarly, 28 percent of the respondents feel that the stock futures are the best among other equity derivatives when it comes to hedging the risk. A very less proportion of respondents (6 percent) are of the view that the index options can hedge the risks better. Therefore it can be said that, futures (equity as well as index) seem to have the upper-hand over the options, when it comes to hedging the risk.

The index derivatives have become popular among the investors and this is evident from the volumes with which the index futures and options are traded on the exchange in India. What could be the reason for this trend? Table 13 answers this question. It is evident from the survey result that,

47 percent of the respondents are of the opinion that the index derivatives are easier to predict than the individual stocks. This is the main advantage of the index derivatives. Another 40 percent of the respondents are of the view that, index derivatives are very helpful to hedge the risk. Around 7 percent of the respondents have said that the index derivatives help to eliminate unsystematic risk by providing diversification.

Price in stock markets is determined on the basis of demand and supply and hence no individual investor can influence the prices in the market. Therefore an investor has to collect information regarding various factors that affect demand and supply. In this regard he has to do his own research or he has to depend on others to predict as to which stock is going to perform better and is worth investing in. Table 14 shows that, 20 percent of the respondents do their own research, 23 percent of them trade, based on the call given by their dealers, and the mere 7 percent depend on experts' opinion. But majority of the respondents (50 percent) use all the previously stated sources. This means that derivative traders are usually very cautious and gain good knowledge before taking any positions in the derivatives segment.

Equity derivatives have a short life i.e, at any point of time, an investor can get a derivatives contract on any stock or index at the most for a period of 3 months, after which they tend to expire and a new contract is rolled out. Therefore it is very risky to have open positions in derivatives, as they have shorter life-span. Technical analysis is a technique that uses several tools to determine the right time to enter/exit into/from the market and it is mainly used for predicting near term market movements. Therefore, the use of technical analysis might be considerably useful for the traders of equity derivatives. Hence, it is evident from Table 15 that about 66.7 percent of the respondents believe that the use of technical analysis can help to succeed in the derivatives market to a great extent. About 33.3 percent of the respondents do not see any link between the use of technical analysis and success in derivatives market.

Table 16 shows that about 17 percent of the respondents use Pattern Charts for the purpose of predicting the market movements in the near term. About 13 percent of the respondents use triangular graphs and some 10 percent of them use moving averages as the tools for timing the market. But a majority of the respondents (60 percent) do not make use of any tools of technical analysis. Though out of these 60 percent some of them believe that technicals do help in trading equity derivatives better, they do not use them because of lack of proper knowledge about the ways in which these tools can be used.

Though the derivatives are useful instruments for hedging risk as well as to make good profits through speculation, there are a number of factors which sometimes makes it difficult for the investors to trade in them. Table 17 shows that 43 percent of the respondents found the limited tenure/period of the derivatives as a constraint, whereas 23 percent of them found them to be highly risky, and 20 percent of them said that these instruments are quite difficult to understand. Other problems found were, the system of daily marking to market, high fluctuation in prices etc.

Table 18 shows that majority of the respondents (67) feel that trading in equity derivatives is not safer than that of spot market, and there are reasons also for such a response from them. The reasons are; investors tend to take on more positions than they actually can afford, high fluctuation of prices, huge sum of money involved etc. But there are also fair numbers of respondents (33 percent) who

agree with the statement that the equity derivatives are safer than spot market trading because of existence of high liquidity, risk hedging opportunities etc.

### Major Findings of the Study

- The investors believe that the equity derivatives help to minimise the risks in stock market investments
- The strategies of risk management using equity derivatives have been found effective, which the investor can make use of to reduce the risks in stock market investments.
- The investors were found to be making use of these strategies as they gain more and more experience in the stock markets. It was found that, longer the duration in which the person has been investing in stocks, greater are the chances that he is aware of these strategies and he uses them for his advantage.
- The investors consider availability of high leverage, risk hedging and scope for speculation is the main advantage of trading in derivatives.
- Equity derivatives were found to be the most widely traded instruments in the derivatives segment in India.
- The investors use the equity derivatives, more for the purpose of profit making and speculation than for risk hedging.
- Index futures and stock options were found to be the most useful risk hedging instruments for the investors.
- It was found that, investors tend to make their own research, consider dealers' call and take expert advice before taking any positions in the derivatives segment.
- The investors believed that the use of technical analysis can help to succeed in the derivatives market but most of them did not use it because of the complexity involved in such tools.
- It was found out through the survey that most of the investors (67 percent) feel that trading in equity derivatives is riskier than trading in stock markets.

### Recommendations

Based on the findings of the study as above, the following recommendations can be made:

- Though the strategies help minimise the risks, it is recommended that the investors keep a watch on their investments so that the losses could be further reduced.
- The use of technical analysis to predict the movement of the scrip or index in the near term can be done before formulating the strategies.
- Specific strategy should be used with a purpose instead of investing haphazardly in equity derivatives.
- Excessive speculation using derivatives should be avoided, as they can make the investors more prone to risk of loss as the derivatives market is highly volatile.

## Conclusion

After studying the role of equity derivatives in providing opportunities for the investors to minimise the risk of loss in the stock markets, it can be concluded that, the proper use of these instruments with specific objectives can serve the purpose to a considerable extent. Indian stock markets are driven by high liquidity and the turnover in the equity derivatives segment are 10 to 11 times higher when compared to the turnover in the cash market segment. And more importantly, client trading in the equity derivatives segment constitutes a considerable quantum of the total turnover. Given these facts, the equity derivatives can be considered to be the innovative gifts of the developed markets which help the investors to not only hedge the risk to those who are willing to take it, but also to make handsome profits through speculation. As these useful instruments (equity derivatives) are recent developments in the Indian stock exchanges which were introduced just a decade ago, they have become successful in gaining the confidence of the investors over the years. More and more informed investors are entering into this segment to enjoy the high liquidity in this segment and also add-on to the existing liquidity. Therefore, after the study it can be rightfully said that, when more people are educated and made aware of these useful instruments and other useful techniques in stock markets like technical and fundamental analysis, the Indian stock markets can see flourishing times by providing people with an efficient investment avenue where they can invest and earn favourable returns to immunize the impact of rising inflation in India.

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**Table 1. Age group of the respondents**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
below 25 years	3	10.0	10.0	10.0
25 to 40 years	16	53.3	53.3	63.3
40 to 55 years	7	23.3	23.3	86.7
above 55 years	4	13.3	13.3	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 2. Income level of the respondents**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
below Rupees 2 lakh	4	13.3	13.3	13.3
rupees 2 lakh to 4 lakh	10	33.3	33.3	46.7
rupees 4 lakh to 6 lakh	14	46.7	46.7	93.3
above rupees 6 lakh	2	6.7	6.7	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 3. Ability of the stock markets to provide good returns : ‘They give highest return’**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	6	20.0	20.0	20.0
Agree	17	56.7	56.7	76.7
Disagree	1	3.3	3.3	80.0
Neither agree nor disagree	6	20.0	20.0	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 4. Ability of the stock markets to provide good returns :  
'Stock Market Investment is Risky'**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	9	30.0	30.0	30.0
Agree	20	66.7	66.7	96.7
Neither agree nor disagree	1	3.3	3.3	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 5. Perception about 'The Risk' in stockmarkets**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Loss due to Volatility in the Stock Prices	6	20.0	20.0	20.0
Loss due to Market Volatility	14	46.7	46.7	66.7
Variability in Rate of Returns	8	26.7	26.7	93.3
Others	2	6.7	6.7	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 6. Advantages of trading in derivatives**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Availability of Leverage	9	30.0	30.0	30.0
Risk Hedging	11	36.7	36.7	66.7
Scope for Profits through Speculation	10	33.3	33.3	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 7. Derivatives help to minimise risk**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly agree	5	16.7	16.7	16.7
Agree	16	53.3	53.3	70.0
Disagree	5	16.7	16.7	86.7
Neither agree nor disagree	4	13.3	13.3	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 8. Type of derivatives traded by the respondents**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Equity Derivatives	26	86.7	86.7	86.7
Commodity Derivatives	4	13.3	13.3	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 9. The experience in stock markets can provide expertise to an investor**

Particulars	Duration of investment in Stock Markets				
	less than past 6 months	more than 6 months but less than a year	more than a year but less than a 3 years	more than past 3 years	
	Count	Count	Count	Count	
Respondent's awareness about the risk minimising strategies using equity derivatives	No	0	0	7	5
	Yes	1	0	3	14

(Source: Survey data)

**Table 10. Strategies used by the respondents**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Bull/bear Spread	5	16.7	16.7	16.7
Strangle	4	13.3	13.3	30.0
Arbitrage using futures	5	16.7	16.7	46.7
Others	16	53.3	53.3	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 11. Main objective of trading in equity derivatives**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Profit Making	16	53.3	53.3	53.3
Speculation	9	30.0	30.0	83.3
Hedging	5	16.7	16.7	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 12. The most useful risk hedging instrument among equity derivatives**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Stock Futures	8	26.7	26.7	26.7
Index Futures	10	33.3	33.3	60.0
Stock Options	10	33.3	33.3	93.3
Index Options	2	6.7	6.7	100.0
Total	30	100.0	100.0	

*(Source: Survey data)***Table 13. Uses of index derivatives**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Provide Diversification	2	6.7	6.7	6.7
Ease of Prediction of Market Movements	14	46.7	46.7	53.3
Risk Hedging	12	40.0	40.0	93.3
Others	2	6.7	6.7	100.0
Total	30	100.0	100.0	

*(Source: Survey data)***Table 14. Source of Information for the trades in equity derivatives**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Own research	7	23.3	23.3	23.3
Opinion of dealers	6	20.0	20.0	43.3
Experts' opinion	2	6.7	6.7	50.0
All the above	15	50.0	50.0	100.0
Total	30	100.0	100.0	

*(Source: Survey data)***Table 15. The use of technical analysis helps to succeed in derivatives market**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
No	10	33.3	33.3	33.3
Yes	20	66.7	66.7	100.0
Total	30	100.0	100.0	

*(Source: Survey data)*

**Table 16. The technical analysis tools used by the respondents**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Triangular Graphs	4	13.3	13.3	13.3
Head & shoulder Patterns	5	16.7	16.7	30.0
Moving Averages	3	10.0	10.0	40.0
Not using technical	18	60.0	60.0	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 17. Difficulty faced in derivatives trading**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
Difficult to Understand	6	20.0	20.0	20.0
High Risk	7	23.3	23.3	43.3
Limited Tenure	13	43.3	43.3	86.7
Others	4	13.3	13.3	100.0
Total	30	100.0	100.0	

(Source: Survey data)

**Table 18. Trading in equity derivatives is safer than trading in spot market**

Particulars	Frequency	Percent	Valid Percent	Cumulative Percent
No	20	66.7	66.7	66.7
Yes	10	33.3	33.3	100.0
Total	30	100.0	100.0	

(Source: Survey data)