Financial Derivatives: Myths and Realities With Retail Investors' View

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INTRODUCTION TO FINANCIAL DERIVATIVES

The world financial markets have undergone qualitative changes in the last three decades due to phenomenal growth of derivatives. An increasingly large number of organizations and investors now consider derivatives to play a significant role in implementing their financial decisions. Derivatives play a variety of roles, but, perhaps, the most important is hedging. Hedging involves transfer of market risk the possibility of sustaining losses due to unforeseen unfavorable price changes. A derivatives trading allows an investor to alter his market risk profile by transferring to counter-party some type of risk for a price. Hedging is the prime reason for the advent of derivatives and continues to be a significant factor driving investors to deal in derivatives[1].

Indian Capital market has also witnessed many significant changes; however, the most notable change in the capital market scenario has been the introduction of derivatives trading since the last three decades. Now those derivatives have become an integral part of the Indian Capital Market[2]. With the world derivative markets gaining momentum, there was a debate to introduce them in Indian financial markets also. While the protagonists to introduce derivatives trade put sound reasons forth, the opponents offered equally contrary arguments against such a measure. Since the positive factors outweighed the negative arguments, derivatives' trading was introduced in June 2000 with index futures. Subsequently, the markets traded in options with index options and stock options[3].

The prime motive behind the use of derivatives had been to bring out a reduction in exposure to risk and not to increase it. As a result, derivatives have been developed as a means of making decisions in the face of uncertainty. Derivatives serve as risk shifting instruments. At inception they were mainly used for reducing exposure to foreign exchange rates, interest rates, and stock indices. The process of employing derivatives is known as risk hedging. But their role is not limited to hedging, are increasingly used speculative, and arbitrage purposes also [8].

Derivatives are products of 'financial engineering' that meet the various needs of the markets and its players. They are the skeptical instruments today even after reaching a milestone in their growth. They are perceived to be a complex as their mathematical counterparts. But financial derivatives are relatively simple and easy to understand. Their values are completely determined from the value of underlying assets. Within a short span of three decades since their introduction, derivative markets have gained prominence and have become in dispensable to the day-to-day business activity around the world[9].

STATEMENT OF THE PROBLEM

Risk management is the very hot issue in the finance world. It is a major challenge for all the participants in financial market. Day by day the complexity in risk management is increasing. Even though there are many tools and techniques are available to manage risk, still there is requirement for sophisticated instruments to manage risk. Derivative instruments are developed as more sophisticated and innovative tools to handle risk. But still today market participants are not so familiar with derivatives. Lack of understanding of the market and lack of close link to those doing the day-to-day trading have also hindered the growth of these markets.

Lack of understanding as to how the derivatives in stock markets are to be operated is the major roadblock, in the success of the futures and options market in our country. In fact, even the LC Gupta Committee has noted in its report in March 1998 that "derivatives are not always clearly understood". A few well-publicized debacles involving derivatives trading in other countries has also created widespread apprehensions in the Indian public's mind. As derivatives trading is a high risk trading system and is a new area in the Indian capital market scenario, it is necessary to understand clearly the precise nature of the derivatives, their objective and scope, the types of risks associated therewith and the ways and means of minimizing these risks. The absence of such awareness and inadequate appreciation of the character, derivatives may result in a number of players burning their fingers. Even after nine years, from introduction of derivatives, market participants especially small-retail individual investors are not familiar with concept of derivatives. Yet they are under misconception about derivatives. They strongly believed the myths of derivatives. Indeed, they are feared about derivatives due to lack of knowledge of derivatives and their use.

Creating awareness by providing proper information is essential need of the day. Market participants, especially small investors, are very much needed clear guidance about risk management techniques. Proper knowledge should be given to the investors to safeguard their investment. It is the duty of the professionals both academicians and practitioners to provide precise and clear information to the investors regarding risk management and its methods. There is a big need of research in the area of risk management and its tools with the view of providing sophisticated knowledge to the investors and all the market participants and to the professionals. With this view this research is going to achieve its objectives.

The main concern is to provide a level–playing field for retail investors. Retail investors do not have easy access and

are, therefore, unable to manage their portfolio risks, as efficiently as big investors. This is unfair to retail investors, as they cannot utilize risk containment mechanisms available to them. In addition, establishment of local trading in derivatives brings these markets under the regulatory supervision of local markets, increasing investors' confidence in markets as well as enhancing investor participation.

Investors will find that there are lots of opportunities to make money once they understand the concept of derivatives and its application. Though there are several publications on this subject, a simple and concise write-up is rare. Investors need proper education and training for using derivatives without any hesitation. It is sure that after "digesting" the concepts of the derivatives the investor would be able to use derivatives products with more ease in his day-to-day trading.

There are many studies in India on econometrics and mathematical applications of financial derivatives. These focused on mathematical comparison of spot market and futures market volatility and their implications on each other. Some of them proved that there is impact of futures market on spot market vice versa. Some other studies proved that futures market has no impact on spot market vice versa. However, these findings not helped retail individual investors at large. And there is no much research work on retail investors' awareness and attitude about financial derivatives and risk management in India. In this view present study has been taken entitled "A Study on Financial Derivatives and Risk Management" with focusing on the following objectives.

OBJECTIVES OF THE STUDY
The main objective of this Study is to investigate investors' attitude toward financial derivatives and risk management starting with the initial presumption that investors on the capital market are risk-averse. The overall aim of this research is to gain an overall understanding of awareness, knowledge and application of derivatives as a risk management tool among retail investors to assist in the development of education, marketing and communication strategies. The Researcher provides a research to evaluate general attitude of investors toward derivatives and risk, using specific designed questionnaire. The sub objectives of the study mentioned as below:

To understand myths and realities of 'Financial Derivatives' with retail investors' view. And to develop clear guidelines for the investors to 'Risk management' through 'Financial Derivatives'

HYPOTHESES OF THE STUDY
Hypotheses are considered as the principal instruments in research. Hypotheses are mere assumptions or some suppositions to be proved or disproved. The following are the hypothesis made.

Hypothesis:
H_0: - The respondents are believed in Myths on Financial derivatives.

H_a: - The respondents are not believed in Myths on Financial derivatives.

RESEARCH METHODOLOGY
For the successful completion of the study both primary and secondary data has been collected using appropriate methods.

Primary data: A questionnaire-based survey was conducted to study the awareness and perceptions of retail investors concerning derivative products and risk management. Primary data obtained from retail investors, which include professionals like academicians, executives, doctors, advocates, engineers, and also businessmen, employees and others. Data collected from respondents for the study purpose comprises of 500 respondents, were surveyed with the help of questionnaires given and preliminary data were collected.

Questionnaire method is very much suitable to collect the primary data to study awareness of market participants about 'Risk management' and 'Financial Derivatives'. Schedule method along with questionnaire also used to identify the knowledge gap in usage of financial derivatives among retail investors. To reach the retail investors the researcher went to stock trading centers located in city area throughout the State and met investors personally and distributed and monitored/interviewed to fill up the questionnaire. Researcher visited important 19 districts/cities in Karnataka and collected primary data from investors who available at stock trading centers.

Secondary data: Secondary data gathered from different sources such as, Internet, web sites, professional magazines, reference books, newspapers, referred journals and seminar and/or conference books. In addition, books on financial derivatives and risk management written by various authors, periodicals and articles in the newspapers, magazines and Internet constitute the secondary sources of the study. Report on financial derivatives and risk management by some committees like L.C. Gupta Committee also referred.

Sampling Technique
The universe (population) for the study is total investors in Karnataka state. In general the universe is infinite, if we assume everybody invests in one or other form. But researcher considered only those investors who have D-Mat A/c therefore, the total population for the study is all the D-Mat A/c holders belongs to Karnataka during the 2008.

The sampling unit for the study is each individual retail investor.

The sample size for the study is only 500 respondents. Due to time and cost constraint researcher has taken only 500, which is considered optimum for the study.

Sampling design is based on probability sampling or random sampling in which every respondent will have equal chance of getting participated in survey. A random sampling process was adopted to select individuals .The eligibility criterion for selecting the respondent is the respondent should have D-mat account with any Depositories Participant. It is assumed that the D-mat account holders will have a little knowledge about stock market.

Sampling frame: From the survey area, (Karnataka) selected only 19 important districts/cities. Selected cities clustered into three groups; more important cities, important cities and less important cities on the basis of city's development, population and convenient. The only one city, Bangalore, is considered more important city, only seven cities namely, Mysore, Mangalore, Dharwad, Davanagere, Shimoga, Gulbarga and Bellary are considered important cities and all other cities are considered as less important cities. Since Bangalore city is the capital city of Karnataka

state, and more number of investors are available in the city. Therefore out of 500 sample size 125 respondents (25%) have been selected from Bangalore city itself. And from each important cities 30 respondents (6%) have been selected and 15 respondents (3%) each from other less important cities.

Time dimension: The survey fieldwork was conducted during the period May 2007-October 2008.

Tools used for data analysis: Z test statistic used for testing hypotheses.

Scope of the Study

In the cash market, retail investors have been the dominant group but are sensitive to market conditions; Foreign Institutional Investors (FIIs) have a growing significance. Compared to institutional investors, retail investors are much more sensitive to changes in market sentiment. Derivatives investment is complementary to stock investment, attracting a small group of retail investors who are more educated and of higher work status. Reasons for the mass participation of retail investors include the following privatization Technology, Government Policy, Regulatory policy, Employee remuneration.

Derivatives are generally perceived instruments which cause big losses. This study seeks to drive out the myths surrounding derivatives. The study also points out the economic benefits and risks associated with the trading of derivative instruments and how derivatives contribute to the improvement of capital markets and the economy as a whole. Suggestions for proper risk management for the end users have been proposed in light of the analyses.

This study may not be precisely concerned with particular period, because major part of research is purely based on secondary data. However the research experiments of the study is concerned only to the period from introduction of financial derivatives in Indian capital market to till today (i.e., June 2000 onwards). However, the survey has been conducted through questionnaire during the period 2007-2008.

In this study the Researcher considered only financial derivatives in general and equity derivatives in particular. And more emphasis is given for market risk rather other risks. Since the participants in derivatives market are spread all over the country the study is not consider only one particular geographical area. However, the survey that has been conducted on this study is restricted to Karnataka only.

Within the limited time an effort has been put to study the problems and prospects of Derivatives market. In-fact, derivatives market itself is a wide concept to cover every aspects of it in a single study. Hence, this study is covering only the aspects such as investors' awareness about financial derivatives, their attitude towards usage of derivatives, and their risk perception and so on.

RESPONDENTS' PROFILE

Respondents for this study are only individual retail investors. Respondents are very common, ordinary investors. According to SEBI retail investor or small investor is one who finances a listed company in the form of equity (shareholder) or debt (debenture holder) up to Rupees one lakh through an Initial Public Offering. Their holding in stock market is less than 10% of floating stock in stock market. Investors mean those who have D-Mat A/c with any Depository participants in India.

Respondents are belongs to different age group. For convenience, respondents are classified into six groups. According to the survey, 1% of respondents are belongs to below 20 years age group, 38% of respondents are belongs to age group of 21-30 years, 28% of respondents are come under the age group of 31-40 years, 20% of respondents are come under the group of 41-50 years old, 10% of respondents are belongs 51-60 years age group and 3% of respondents are belongs above 60 years group.

Education is one factor which strongly influences investors' behavior about investment decisions. Investors also classified according to their educational qualification. It is classified that into 4 groups namely, below degree, degree, above degree and others. According to survey 17% of respondents belongs to below degree category, 47% of respondents have been completed their Degree, 34% of respondents have been qualified above degree, and only 2% have been qualified other courses like diploma and certificate courses etc. It is clear that education plays an important role in investors' decision. 81% of investors have been qualified at least degree.

Occupation is indicator of economic conditions of the persons and one of the vital factors which influence investors. Investors have been classified on the basis of their occupation into 5 groups namely Academicians, Executives, Businessmen, Employees, Professionals and others. According to the survey 13% of respondents belong to academicians, 13% of respondents belong to Executives, 25% of respondents belong to businessmen, 30% of respondents belong to Employees category, 10% of respondents belong to Professionals, and 9% of respondents belong to others.

Executives include Company Managers, Brokers etc. Professionals include Engineers, Chartered accountants, financial consultants, advocates, Doctors etc. Employees include Government employees, Private employees, bank employees, retired employees etc. Businessmen include contractors, shop keepers, land lords etc. Others include students, self employed, house wives, farmers, and those who have not mentioned their occupation.

A big chunk of investors are Employees amounts to 30% followed by businessmen 25%. Academicians and executives are equal participants. Professionals' category consists of 10% of total number of respondents. Others such as students, house wives, farmers, and self employed also participating in capital market.

LIMITATIONS OF THE STUDY

1. Limitation of time: - This study has got limitations that, it is purely done for academic reasons and the time budget assigned for conducting the study is limited.
2. Due to lack of awareness about derivatives, many investors may not be responded accurately. The study is not focused on professional investors who have expertise and invests big amount in stock market. Because these professional investors are less in number and they are not easily accessible.
3. There is always sampling error. Investors' response may be biased. And the study reflects only D-mat a/c holders' view not all the investors in general.
4. One of the most serious limitations concerns the fact that the investors' response is absolutely comes from

subjective question and there is no way to reliably assess whether their actual behavior would mimic their answers.

5. Since sample size is low (500) and the survey covers only retail investors it cannot be generalised. Respondents are retail investors in general include both users and non users of derivatives.

6. The questionnaire targeted only retail investors, i.e. individuals trading on personal account. Large retail clients who traded on company account might be screened out and their opinions would then not be captured.

7. Since the study is only confined to Karnataka state all the investors are exclusively belongs to Karnataka only. Sample has been taken from all over the of Karnataka state. However, only 19 districts/city places have been selected for collection of primary data.

TESTING OF HYPOTHESES

Hypotheses are tested for deciding whether a sample data offer such support for a hypothesis that generalization can be made. Though hypothesis may not be proved absolutely, but in practice it is accepted if it has withstood a critical testing. To test hypothesis means to say (on the basis of the data has been collected) whether or not the hypothesis to be valid. The main question is whether to accept the null hypothesis or not to accept the null hypothesis?

Even though hypotheses can be proved on the basis of facts and figures, statistical tool is used for testing. Hypotheses were tested by using 'Z' test statistic at 1% level of significance. Since percentage method is used to analyse the data and sample size is considerably big. And the data is in qualitative in nature. Z test is suitable for comparing the sample proportion to a theoretical value of population proportion. If sample size 'n' is large, the binomial distribution tends to become normal distribution, and as such for proportion testing purposes we make use of the test statistic 'Z' as under:

$$\text{Test statistic 'z'} = \frac{p^\wedge - p}{\sqrt{\dfrac{p \times q}{n}}}$$

Where:

$p^\wedge$= Sample proportion
p = Probability of success
q = Probability of failure
n = Size of the sample
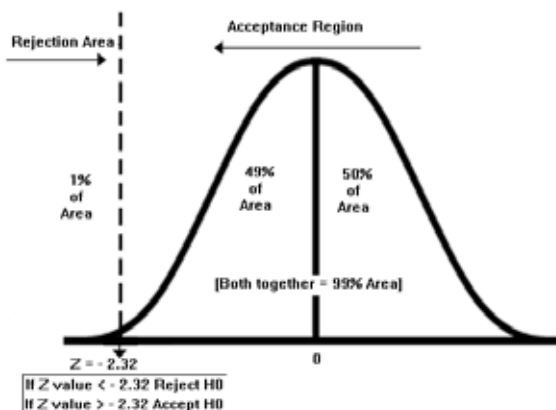
Since respondents response may not be hundred percent unbiased and accurate. And considering the sam-

ple size, researcher has taken 1% level of significance (α) this implies that null hypothesis (H_0) will be rejected when the sampling result (observed evidence) has less than 0.01 probability of occurring if H_0 is true. Using normal curve area table: Rejection area (R): z < - 2.32. If the computed value of z falls (less than) in the rejection region, H_0 is rejected at 1% level of significance. And we can conclude that, on the basis of sample information, H_0 is not true or vice versa.

H_0:-The respondents are believed in Myths on Financial derivatives.
H_a:-The respondents are not believed in Myths on Financial derivatives.

The above hypothesis is related with the objectives of the study. Most of the retail investors are unknowingly believed the myths on financial derivatives. The hypothesis is to prove that most of the retail investors are believed on myths of financial derivatives. The ten important myths have been identified and selected for testing; therefore, there are ten sub sets hypotheses are tested below which support for accepting or rejecting the main null hypothesis.

Myth number 01: Financial derivatives are new, complex and high-tech financial products.

Let us assume: More than 50% of investors believed the myth that financial derivatives are new, complex and high-tech financial products ($H_{0.1}$).

Alternatively, less than 50% of investors believed the myth that financial derivatives are new, complex and high-tech financial products ($H_{a.1}$).

The sample survey finds that, out of 500 respondents, 288 respondents said yes.

$p^\wedge$= observed sample proportion is 288/500 = 58%
p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$\text{Test statistic 'z'} = \frac{0.58 - 0.50}{\sqrt{\dfrac{0.5 \times 0.5}{500}}} = \frac{0.08}{0.02236} = 3.578$$

Test statistic 'z'=3.578

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does not fall in the rejection region, H_0 is accepted at 1% level of significance. And we can conclude that, on the basis of sample information, majority of respondents believed the myth that financial derivatives are new, complex and high-tech financial products, which supports for accepting main null hypothesis also.

Myth number 02: Financial Derivatives Are Purely Speculative and Highly Leveraged Instruments.

Let us assume: More than 50% of investors believed the myth that Financial Derivatives Are Purely Speculative and Highly Leveraged Instruments ($H_{0.2}$).

Alternatively, less than 50% of investors believed the myth that Financial Derivatives Are Purely Speculative and Highly Leveraged Instruments ($H_{a.2}$).

The sample survey finds that, out of 500 respondents, 315

respondents said yes.

$\hat{p}$ = observed sample proportion is 315/500 = 63%
p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$Test\ statistic\ 'z' = \frac{0.63 - 0.50}{\sqrt{\frac{0.5\ x\ 0.5}{500}}} = \frac{0.13}{0.02236} = 5.814$$

$$Test\ statistic\ 'z' = 5.184$$

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does not fall in the rejection region, H_0 is accepted at 1% level of significance. And we can conclude that, on the basis of sample information, majority of respondents believed the myth that Financial Derivatives Are Purely Speculative and Highly Leveraged Instruments, which supports for accepting main null hypothesis also.

Myth number 03: Only Large Organizations/Investors Have a Purpose for Using Derivatives.

Let us assume: More than 50% of investors believed the myth that Only Large Organizations/Investors Have a Purpose for Using Derivatives ($H_{0.3}$).

Alternatively, less than 50% of investors believed the myth that Only Large Organizations/Investors Have a Purpose for Using Derivatives ($H_{a.3}$).

The sample survey finds that, out of 500 respondents, 254 respondents said yes.

$\hat{p}$ = observed sample proportion is 254/500 = 51%
p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$Test\ statistic\ 'z' = \frac{0.51 - 0.50}{\sqrt{\frac{0.5\ x\ 0.5}{500}}} = \frac{0.01}{0.02236} = 0.447$$

$$Test\ statistic\ 'z' = 0.447$$

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does not fall in the rejection region, H_0 is accepted at 1% level of significance. And we can conclude that, on the basis of sample information, majority of retail investors believed the myth that Only Large Organizations/Investors Have a Purpose for Using Derivatives, which supports for accepting main null hypothesis also.

Myth number 04: Financial Derivatives Are Simply the Latest Risk-Management Fads.

Let us assume: More than 50% of investors believed the myth that Financial Derivatives Are Simply the Latest Risk-Management Fads ($H_{0.4}$).

Alternatively, less than 50% of investors believed the myth that Financial Derivatives Are Simply the Latest Risk-Management Fads ($H_{a.4}$).

The sample survey finds that, out of 500 respondents, 256 respondents said yes.

$\hat{p}$ = observed sample proportion is 256/500 = 51%
p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$Test\ statistic\ 'z' = \frac{0.51 - 0.50}{\sqrt{\frac{0.5\ x\ 0.5}{500}}} = \frac{0.01}{0.02236} = 0.447$$

$$Test\ statistic\ 'z' = 0.447$$

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does not fall in the rejection region, H_0 is accepted at 1% level of significance. And we can conclude that, on the basis of sample information, majority of respondents believed the myth that Financial Derivatives Are Simply the Latest Risk-Management Fads, which supports for accepting main null hypothesis also.

Myth number 05: Derivatives Take Money out of Productive Processes and Never Put Anything Back.

Let us assume: More than 50% of investors believed the myth that Derivatives Take Money out of Productive Processes and Never Put Anything Back ($H_{0.5}$).

Alternatively, less than 50% of investors believed the myth that Derivatives Take Money out of Productive Processes and Never Put Anything Back ($H_{a.5}$).

The sample survey finds that, out of 500 respondents, 211 respondents said yes.

$\hat{p}$ = observed sample proportion is 211/500 = 42%
p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$Test\ statistic\ 'z' = \frac{0.42 - 0.50}{\sqrt{\frac{0.5\ x\ 0.5}{500}}} = \frac{-0.08}{0.02236} = -3.578$$

$$Test\ statistic\ 'z' = -3.578$$

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does fall in the rejection region, H_0 is rejected at 1% level of significance. And we can conclude that, on the basis of sample information, majority of respondents not believed the myth that Derivatives Take Money out of Productive Processes and Never Put Anything Back, which supports for rejecting main null hypothesis, number 12 also.

Myth number 06: Only Risk-Seeking Organizations/Investors Should Use Derivatives.

Let us assume: More than 50% of investors believed the myth that Only Risk-Seeking Organizations/Investors Should Use Derivatives ($H_{0.6}$).

Alternatively, less than 50% of investors believed the myth that Only Risk-Seeking Organizations/Investors Should Use Derivatives ($H_{a.6}$).

The sample survey finds that, out of 500 respondents, 254 respondents said yes.

$\hat{p}$ = observed sample proportion is 254/500 = 51%

p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$\text{Test statistic 'z'} = \frac{0.51 - 0.50}{\sqrt{\frac{0.5 \; x \; 0.5}{500}}} = \frac{0.01}{0.02236} = 0.447$$

$$\text{Test statistic 'z'} = 0.447$$

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does not fall in the rejection region, H_0 is accepted at 1% level of significance. And we can conclude that, on the basis of sample information, majority of respondents believed the myth that Only Risk-Seeking Organizations/Investors Should Use Derivatives, which supports for accepting main null hypothesis also.

Myth number 07: The Risks Associated with Financial Derivatives Are New and Unknown.

Let us assume: More than 50% of investors believed the myth that The Risks Associated with Financial Derivatives Are New and Unknown ($H_{0.7}$).

Alternatively, less than 50% of investors believed the myth that The Risks Associated with Financial Derivatives Are New and Unknown ($H_{a.7}$).

The sample survey finds that, out of 500 respondents, 262 respondents said yes.

p^= observed sample proportion is 262/500 = 52%
p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$\text{Test statistic 'z'} = \frac{0.52 - 0.50}{\sqrt{\frac{0.5 \; x \; 0.5}{500}}} = \frac{0.02}{0.02236} = 0.895$$

$$\text{Test statistic 'z'} = 0.895$$

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does not fall in the rejection region, H_0 is accepted at 1% level of significance. And we can conclude that, on the basis of sample information, majority of respondents believed the myth that The Risks Associated with Financial Derivatives Are New and Unknown, which supports for accepting main null hypothesis also.

Myth number 08: Derivatives trading is an Unsafe and Risky.

Let us assume: More than 50% of investors believed the myth that Derivatives trading is an Unsafe and Risky ($H_{0.8}$).

Alternatively, less than 50% of investors believed the myth that Derivatives trading is an Unsafe and Risky ($H_{a.8}$).

The sample survey finds that, out of 500 respondents, 290 respondents said yes.

p^= observed sample proportion is 298/500 = 58%
p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$\text{Test statistic 'z'} = \frac{0.58 - 0.50}{\sqrt{\frac{0.5 \; x \; 0.5}{500}}} = \frac{0.08}{0.02236} = 3.578$$

$$\text{Test statistic 'z'} = 3.578$$

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does not fall in the rejection region, H_0 is accepting at 1% level of significance. And we can conclude that, on the basis of sample information, majority of respondents believed the myth that Derivatives trading is an Unsafe and Risky, which supports for accepting main null hypothesis also.

Myth number 09: Derivatives trading increase Systematic Risks.

Let us assume: More than 50% of investors believed the myth that Derivatives trading increase Systematic Risks ($H_{0.9}$).

Alternatively, less than 50% of investors believed the myth that Derivatives trading increase Systematic Risks ($H_{a.9}$).

The sample survey finds that, out of 500 respondents, 266 respondents said yes.

p^= observed sample proportion is 266/500 = 53%
p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$\text{Test statistic 'z'} = \frac{0.52 - 0.50}{\sqrt{\frac{0.5 \; x \; 0.5}{500}}} = \frac{0.02}{0.02236} = 0.895$$

$$\text{Test statistic 'z'} = 0.895$$

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does not fall in the rejection region, H_0 is accepting at 1% level of significance. And we can conclude that, on the basis of sample information, majority of respondents believed the myth that Derivatives trading increase Systematic Risks, which supports for accepting main null hypothesis also.

Myth number 10: Because of the Risks Associated with Derivatives, Regulators Should Ban Their Use.

Let us assume: More than 50% of investors believed the myth that Because of the Risks Associated with Derivatives, Regulators Should Ban Their Use ($H_{0.10}$).

Alternatively, less than 50% of investors believed the myth that Because of the Risks Associated with Derivatives, Regulators Should Ban Their Use ($H_{a.10}$).

The sample survey finds that, out of 500 respondents, 148 respondents said yes.

p^= observed sample proportion is 148/500 = 30%
p = probability of success is 50%
q = probability of failure is 50%
n = size of the sample is 500

$$Test\ statistic\ 'z' = \frac{0.30 - 0.50}{\sqrt{\dfrac{0.5 \times 0.5}{500}}} = \frac{-0.20}{0.02236} = -8.945$$

$$Test\ statistic\ 'z' = -8.945$$

Conclusion: using normal curve area table: R: z < - 2.32. As the computed value of z does fall in the rejection region, H_0 is rejected at 1% level of significance. And we can conclude that, on the basis of sample information, majority of respondents not believed the myth that Because of the Risks Associated with Derivatives, Regulators Should Ban Their Use, which supports for rejecting main null hypothesis, number 12 also.

The above tests proved that more than 50% of retail investors believed in eight myths out of ten myths (refer chart no. 5.11). By this we can say that the main null hypothesis is accepted and conclude majority of investors believed in myths on derivatives.

The above graphs also shows that both spot values of Nifty index and all the Nifty futures contracts values are moving hand in hand with same direction. We can say that there is high degree of association between the spot values and futures values of Nifty index. We can see that the relationship described by the data points is well described by straight line. Thus we can say that it is a linear relationship and there is direct relationship between Spot and futures prices. However, we cannot conclude that this can allow to predict future occurrence of the market.

CONCLUSION

It is proved that more than 50% of retail investors believed in eight myths out of ten myths on derivatives. By this we can conclude that majority of investors believed in myths and not knowing the realities and it is accepted that more number of investors believed in myths on derivatives.

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