'A Study on Financial

Derivatives'

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CHAPTER 1:

INTRODUCTION

Derivatives are an important breed of financial instrument which are central to today's financial markets. In India, the derivative market segment is very popular and quite active. It is very clear that in currency markets, commodity markets and stock markets involving all the market participants face considerable risk on account of price fluctuations regarding assets traded in these markets. In a financial market system, derivatives can improve a market's efficiency by price discovery, liquidity and transfer of risk. Moreover, investors and business houses use derivatives to hedge or manage their risks. The unfamiliarity and complexity of trading in derivatives has created an air of doubt among the investors inducing them to take differing perspectives on derivatives.

A derivative instrument helps to hedge the risk involved in the trading of an underlying asset. In short derivatives are those financial instruments which derive value from an underlying asset or index. The underlying assets are of two types, namely commodities like gold, cotton, pepper etc. and financial assets like shares, currencies, bonds etc. Based on the underlying assets, the derivatives are classified into commodity and financial derivatives. The basic purpose of these instruments is to provide commitments to prices for future dates for giving protection against adverse movements in future prices, in order to reduce the extent of financial risks. Not only this, they also provide opportunities to earn profit for those persons who are ready to go for higher risks. In other words, these instruments, indeed, facilitate to transfer the risk from those who wish to avoid it to those who are willing to accept the same. Therefore, by lock-in asset prices investors can minimize the impact of price fluctuations with profitability. The derivative instruments are traded for a variety of reasons. Butin India, derivatives are used as investment option, to hedge pre-existing asset risk by setting up a favorable position in the financial market and to use them to profit from the price movements through speculation. Therefore, the emergence of derivative products like forwards, futures, options and swaps in market has triggered the investors to invest in these instruments as a guard to face uncertainties with a chance to earn profitability.

This chapter gives a broad outlook on the research problem as well as the preference of derivatives as an investment option among the investors. The initial pages of this chapter highlight the statement of the problem, objectives, significance of the study, methodology and main limitations faced during the study.

1.1 STATEMENT OF THE PROBLEM

In Kerala, the retail investors see derivative instruments as a risky investment option because many of them lack the basic knowledge regarding their purpose and modus operandi. Most of the investors withdraw their investment decision in financial derivative due to lack of knowledge and technical support. A close examination of the derivative market brings out the fact that the retail investors are ready to invest in the derivatives with a support extended by a third party. The investors are encouraged to invest in these instruments through intermediaries like stock brokers and financial experts. The retail investors leave their investment decision in derivatives in the hands of the intermediaries. Even the most experienced investors in the market is facing difficulties due to lack of information at the right time. The stakeholders in the market like, SEBI and organized exchanges have adopted various measures and have set up guidelines to protect the interest of the investors. The exchanges and intermediaries are organizing various awareness programs, workshops and campaigns targeting the promotion of derivatives trading among the investors. The recent activities of the stakeholders, have influenced many investors to trade in derivatives with help of intermediaries. A detailed enquiry among investors, experts and intermediaries gave an insight into the present situation. On this basis, the study focused on the investor's preference in Futures and Options segment and brought out the problems confronted by them.

Therefore, a study on investor's preference towards Futures and Options was conducted in Ernakulam district among retail investors to find out the reasons for their preference towards Futures and Options segment in derivatives market, their level of satisfaction, the rate of returns, and to find out the problems faced by the investors in derivative market segment.

1.2 SIGNIFICANCE OF THE STUDY

Derivatives are important tools for risk management in the financial market. This research does not confine to investors preference towards Futures and Options but throws light on their level of satisfaction, their risk and returns, the factors influencing their decision to trade in them and the problems faced by retail investors in derivative market segment. This study is also intended to attract the investors towards derivative market segment. The derivatives can not only act as an investment option but can be used an effective tool to manage financial risk. I hope this study will give an insight to the retail investors and various other stakeholders like stock brokers, financial experts, professionals, institutional investors, academicians, researchers, statutory bodies etc.

1.3 SCOPE OF THE STUDY

The study on investor's preference towards Futures and Options is limited to Ernakulam District. The study aims to bring out the level of satisfaction, risk and returns and problems faced by an investors trading in financial derivatives in the state of Kerala. The study is aimed to motivate the investors in investing derivative market segment and to highlight the derivatives as a best choice of investment in the present scenarios. The study was carried out for a period of seven months, starting from March 1st 2016 to September 30th 2016.

1.4 OBJECTIVES OF THE STUDY

- TM To analyze the relationship between the risk and returns from Futures and Options trading to an investor in Ernakulam District.
- TM To examine the reasons considered for trading in Futures and Options derivatives.
- TM To assess the level of financial satisfaction from derivative trading.
- TM To identify the problems faced by the investors in Futures and Options trading.

1.5 DEFINITION OF KEY TERMS

Derivatives: Derivatives are broad set of instruments whose value depend on some underlying assets. The value is derived from underlying financial or physical assets. It is a financial instrument which derives its value/price from the underlying assets.

F&O Segment: The organized exchanges provide trading facilities for the trading in derivatives. The National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) have commenced trading in derivative market instruments, now trading in Index futures, IndexOptions and Stock options and futures.

Risk Management: Risk management is the process of evaluating the chance of loss of or harm and then taking steps to combat the potential risk.

Hedge: A hedge in an investment is done to reduce the risk of price movements in an asset. It's a risk management strategy used in limiting or offsetting probability of loss from fluctuations in the prices of commodities, currencies or securities. It's a transfer of risk without insurance.

Speculation: Speculation involves trading in a financial instrument involving high risk, in expectation of significant returns. The motive is to take maximum advantage from fluctuations in the market.

Futures Contract: Futures Contract means a legally binding agreement to buy or sell the underlying security on a future date. Future contracts are the organized/standardized contracts in terms of quantity, quality (in case of commodities), delivery time and place for settlement on any date in future. The contract expires on a pre-specified date which is called the expiry date of the contract. On expiry, futures can be settled by delivery of the underlying asset or cash. Cash settlement enables the settlement of obligations arising out of the future contract in cash.

Cash Settlement: It is process of performing a futures contract by payment of money difference rather than physical delivery of the commodity.

Contract Month: Contract month means the month in which the F&O Segment of the exchange require a contract to be finally settled.

Margin Money: When a person enters a futures contract, he need not pay the full value of the contract upfront-only a small percentage needs to be paid. That payment is called

margin money. Usually margin money would be a percentage ranging from 10% to as high as 35 or 40% in times of heavy volatility. For example – the margin required for buying 1 lot of reliance futures now is 15.70%. I.e., approximately Rs 29,000.00. The actual margin money required to be maintained changes every day, specified by the NSE.

Display on the Trading Screen: Futures are displayed on the trading screen just like equities. Each future contract will be in a coded form just like equities. Future contracts are displayed in alphabetical order. For a share / index / commodity, 3 contracts will be displayed. The near month contracts are listed first. The trading screen would also show the open price, high, low, traded quantity etc.

Long and Short Positions: Unsettled or open purchase position at any point of time is called a long position and unsettled sales position at any time point of time is called a short position.

Marked to Market: Futures contracts are monitored regularly by the authorities. Hence, Futures prices are marked to market. It means that every change in value to the investor is shown in the investor's account at the end of each trading day. The implication is that, if your futures position is in profits on a particular day, your account is credited with that much of profits (which would be taken away, if the prices fall on the next day). This process would keep going until you settle the contract. At the same time, if your position is in loss, the loss will be shown in your account on theend of the trading day and if such loss is beyond your initial margin you've given, you will have to pay the difference. **Options Contract:** Options Contract is a type of Derivatives Contract which gives the buyer/holder of the contract the right (but not the obligation) to buy/sell the underlying asset at a predetermined price within or at end of a specified period. This contract gives the buyer or holder of the contract the right (but not an obligation) to buy or sell the underlying security at a predetermined price.

Market Lot Size:Regular lot or Market Lot Size means the number of units that can be bought or sold in a specified derivatives contract as may be specified by the exchange from time to time.

Option Premium - This is the price paid by the buyer to the seller to acquire the right to buy or sell.

Strike Price or Exercise Price - The strike or exercise price of an option is the specified/ pre-determined price of the underlying asset at which the same can be bought or sold if the option buyer exercises his right to buy/ sell on or before the expiration day.

Option Holder: Is the one who buys an option which can be a call or a put option. He enjoys the right to buy or sell the underlying asset at a specified price on or before specified time. His upside potential is unlimited while losses are limited to the Premium paid by him to the option writer.

1.6 HYPOTHESES

- H1 : Level of satisfaction of the investors with the Future and Options trading is not high
- H2 : There is no significant difference in satisfaction level of male and female investors.

- **H3** : There is no significant difference in the satisfaction level of investors in relation to education.
- **H4** : *The level of satisfaction does not differ with age.*
- **H5** : *Trading in derivatives is independent of education.*
- **H6** : *Experience in derivatives trading is independent of education.*
- **H7** : *Experience in stock market is independent of education.*

1.7 RESEARCH METHODOLOGY

The present study is exploratory in nature and is envisioned to find out the reasons for investors preference towards Futures and Options. The study will analyse the level of satisfaction among the investors, the factors influencing their decision to invest and their risk and returns from Futures and Options trading. Besides this, the study also focus on the problems faced by the investors in Futures and Options trading. The study gives a clear picture of the present scenario in the derivative market of Ernakulam District with the help of accurate measures and supported facts.

1.7.1 POPULATION

The population consist of regular stock market investors spread over different places in Ernakulam District. Here, stock market investors refer to those who have a DEMAT account to operate and invest in stock market.

1.7.2 DATA SOURCE

The data for the study was collected from primary and secondary sources.

a) Primary Data: The primary data was collected from investors with help of a well-structured questionnaire. Before finalizing the questionnaire, a pilot study was conducted among 75 investors to make necessary correction in the

questionnaire before the final survey. The questionnaire consists of two sections, section 1 consist of demographic profile of the investors and in section 2, consists of questions related to derivative trading. The questions for the questionnaire were finalized in consultation with experts and professionals in the field of derivative market segment. The final data was collected from 175 investors who trade in exchange Futures and Options usingsimple randomsampling method by setting a population frame of200 investors in Ernakulam District.

b) Secondary Data: The secondary data for the study was collected from various sources. Statistical data for the study was collected from the web portals and reports of SEBI, NSE and BSE. For extensive research survey, various published sources like printed books, online journals, research thesis, dissertations and various online websites were used.

1.7.3 PERIOD OF SURVEY

The pilot study was conducted for three months from March 2016 to May 2016. After making necessary modifications in the questionnaire, the final survey was conducted from June 2016 to September 2016. The study covered 175 investors across the Ernakulam district. Moreover, secondary data from the NSE and BSE relating to Futures and Options trading and their reports were based on the final figures available from the year 2015.

1.7.4 PILOT SURVEY

A pilot study was conducted among 75 investors to make necessary changes in the first hand questionnaire. The study was conducted for a period of three months starting from March 2016 to May 2016. The responses from the pilot study was recorded and necessary changes were made in the questionnaire.

1.7.5 DATA ANALYSIS

The method used in the study is exploratory as it utilizes scoring of the variables. The collected data contains both the qualitative and quantitative data. Accordingly, the study uses both qualitative and quantitative techniques for the analysis of data. The statistical analysis comprised of two stages. The first stage examined the descriptive statistics of the measurement items and assessed the reliability and validity of the measure applied in this study. The second stage tested the proposed research model and this involves assessing the contributions and significance of the manifest variables path coefficients (Grimm, 2000)¹.

The computer program, Statistical Package for the Social Sciences (SPSS version 20) is used to analyze the data. In the case of the ranking questions, weighted average techniques with values starting from the highest possible rank to the lowest and weight as the number of respondents. The weighted mean is calculated for each category and ranks are assigned based on the values of the weighted mean. The mean, standard deviation, percentage and frequencies were first calculated to get the initial reaction of the respondents to each item in the questionnaire. Thus, all the items were analyzed using descriptive statistics.

Confirmatory factor analysis was used to explore the relationships between independent and moderating variables and to describe the construct of the theoretical frame work. This was done using the software AMOS 18 (Arbuckle, 2006 a)². In the confirmatory factor analysis, first a theoretically supported model was developed for each factor, a path diagram of casual relationships was constructed and, the parameter estimated in the model were examined based on the goodness of fit measures available in AMOS output (Byrnes, 2006)³.

By using SEM, it is a common practice to use a variety of indices to measure the model fit. In addition to the ratio of the $\chi 2$ statistic to its degree of freedom, with a value less than 5 indicating acceptable fit, researchers recommended a handful of fit indices to assess model fit (Kline, 2005)⁴. These are the Goodness of Fit Index (GFI), adjusted goodness of fit (AGFI), Normed Fit Index (NFI),

Standardized Root Mean Residual (SRMR), and the Comparative Fit Index (CFI). According to the usual procedures, the goodness of fit is assessed by checking the statistical and substantive validity of estimates (i.e. no estimates lie out of the admissible range, as the case for negative variances or correlations larger than one and, no estimates lack a theoretical interpretation, as the case for estimates of unexpected sign), the convergence of the estimation procedure, the empirical identification of the model, the statistical significance of the parameters, and the goodness of fit to the covariance matrix. Since complex models are inevitably misperceived to a certain extent, the standard χ^2 test of the hypothesis is perfect fit to the population covariance matrix is given less importance than measures of the degree of approximation between the model and the population covariance matrix. The *root mean squared error of approximation* (RMSEA) is selected as such a measure (Gignac, 2006)⁵.

Absolute fit measures

Likelihood ratio Chi-square statistic (p): usually greater than 0.05 or 0.01 is the level of acceptable fit.

Goodness of fit index (GFI): higher values closure to 1.0, indicates better fit.

Root mean square error of approximation (RMSEA): values ranging from .05 to 0.08 are acceptable.

Root mean square residual: smaller values are better.

Incremental fit measures

Tuker-Lewis Index (TLI): A recommended value of TLI is 0.09 or greater. The value closure to 1.0 indicates perfect fit.

Normal fit Index (NFI): A recommended value of NFI is 0.09 or greater. The value closure to 1.0 indicates perfect fit.

Adjusted goodness –of –fit index (AGFI): A recommended value of AGFI is 0.09 or greater. The value closure to 1.0 indicates perfect fit.

Parsimonious fit measures

Normal Chi-square (CMIN/DF): Lower limit 1.0 and upper limit2.0/3.0

Parsimonious goodness-of-fit index (PGFI): the value closure to 1.0 indicates perfect fit (Thompson, 2004)

Table 1.1: The following table gives the recommended level of fit indices

	χ^2	DF	Р	Normed χ2	GFI	AGFI	NFI	TLI	CFI	RMR	RMSEA
Recommende											
d fit			>0.05	<3	>0.90	>0.90	>0.90	>0.90	>0.90	<1	<1

Considering the above values, a conclusion was reached about the final model of each factor and their relationships. Correlation was then exercised to explore the relationships among the factors of independent and moderating variables. Moreover, multiple regressions were applied to investigate the association between independent and moderating factors (Cohen et.al, 2003)⁶

To facilitate easy analysis, statistical measures like Coefficient of variation, Mean percentage Score, Chi square- test of Independence, T-test, Z test and One way ANOVA has been used as part of the study.

1.8 LIMITATIONS OF THE STUDY

The study proposed to find out the reasons for investors preference towards exchange Futures and Options in Ernakulam District.

- TM The inference for the study reveals the situation of investors in small area compared to overall population and derivative market segment in India.
- TM The study is limited to Exchange Futures and Options. Although other derivative instruments like currency derivatives, Interest rate Derivatives and Swaps are gaining popularity these days.
- TM The data collection using the questionnaire method was time consuming and cumbersome.
- TM Since the study depends mainly on primary data, there is a possibility that the responses can be biased. Besides this, the study is focused on individual investors ignoring other players in the market like institutional investors.

1.9 CHAPTERISATION OF THE STUDY

- TM Chapter 1 Introduction
- TM Chapter 2 Review of Literature
- TM Chapter 3 Financial Derivatives Theoretical Background
- TM Chapter 4 Perception of investors towards Financial Derivatives.
- TM Chapter 5 Summary of findings, Conclusions and Suggestions

1.10 REFERENCES

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CHAPTER 2:

REVIEW OF LITERATURE

2.1 INTRODUCTION

Review of literature is body of knowledge that aim to review the important aspects of current and previous knowledge in a critical way. It has an ultimate objective of bringing the reader with up to date information with present literature on a topic and makes a foundation for another study that may be needed in the same area. It bridges the gap between existing knowledge and the knowledge to explore. This chapter deals with the discussion on the earlier studies relevant for the present topic of research that is investor's preference towards derivatives. To get a clear cut idea and for in-depth research work different nations and multiple contexts in various time periods were reviewed here,

- Barua *et al* (1994)¹ undertakes a comprehensive assessment of the private corporate debt market, the public sector bond market, the govt. securities market, the housing finance and other debt markets in India. This provides a diagnostic study of the state of the Indian debt market, recommending necessary measures for the development of the secondary market for debt. It highlights the need to integrate the regulated debt market with the free debt market, the necessity for market making for financing and hedging options and interest rate derivatives, and tax reforms.
- Abhyankar (1995)² compared the FTSE 100 stock index with the stock index futures market. He found support for the hypothesis that lower transaction costs is the primary reason for traders with market wide information to use the futures market.

- Pericli and Koutmos (1997)³ analysed the impact of the US S&P 500 index futures on spot market volatility. Their results showed that index futures did not have an escalating effect on spot market volatility. Pierluigi and Laura (2002) reported a decrease in the volatility of the underlying market on Italian Stock Market after the introduction of derivatives.
 - Cho (1998)⁴ points out the reasons for which reforms were made in Indian capital market stating the after reform developments.
- Anna A. Merikas et.al. $(1999)^5$ studied the factors that influence individual investor behavior in the Greek Stock Exchange. The results revealed that there is a certain degree of correlation between the factors that behavioral finance theory and previous empirical evidence identify as the influencing factors for the average equity investors, and the individual behavior of active investors in the Athens Stock Exchange.
- Oliveira and Armada (2001)⁶did not find any significant change on the spot market volatility of the Malaysia and Portuguese stock markets respectively.
- Chuang (2003)⁷ examined the price discovery Stock Exchange Capitalisation
 Weighted Index Futures) and MSCI (Morgan Stanley Capital International
 Taiwan Index Futures) during 1998-99 and found strong statistical evidence of
 market efficiency in its weak form.
- Bandivadekar and Ghosh, Sah and Omkarnath (2003)⁸ also investigated the behaviour of volatility in cash market in futures trading era. They also found that futures trading have led to reduction in volatility in the underlying asset market but they attributed the degree of decline in volatility in the underlying

market to the trading volume in futures market. They inferred that as the trade volume in the Futures and Options segment of BSE is very low, the volatility in BSE has not significantly declined; whereas in the case of NSE (where the trade volume is at the peak), the volatility in NIFTY has reduced significantly.

- Raju and Karande (2003)⁹ found a reduction in spot market volatility after the introduction of index futures in National Stock Exchange, India.
- Snehal Bandivadekar and Saurabh Ghosh (2003)¹⁰ have studied on the impact of introduction of index futures on spot market volatility on both S&P CNX Nifty and BSE Sensex using ARCH/GARCH technique.
- Shenbagraman (2004)¹¹ reviewed the role of some non-price variables such as open interests, trading volume and other factors, in the stock option market for determining the price of underlying shares in cash market. The study covered stock option contracts for four months from Nov. 2002 to Feb. 2003 consisting 77 trading days. The study concluded that net open interest of stock option is one of the significant variables in determining future spot price of underlying share. The results clearly indicated that open interest based predictors are statistically more significant than volume based predictors in Indian context.
- Pok and Poshakwale (2004)¹² in their studies on the KOSPI200 index of the Korean market and KLSE on the Malaysian one, found that while the derivatives increased the volatility of the underlying market, they simultaneously improved its effectiveness as well by increasing the speed at which information was impounded into the spot market prices.

- Chakrabarti and Mohanty $(2005)^{13}$ discuss how capital market in India is evolved in the reform period.
- Gupta and Singh (2006)¹⁴ also made an attempt to investigate the price discovery efficiency of the Nifty futures by considering lengthy time frame and their results showed the evidences that futures market has been an efficient price discovery vehicle.
- Mallikarjunappa and Afsal (2007)¹⁵ studied the volatility implications of the introduction of derivatives on the stock market in India using S&P CNX IT index and found that clustering and persistence of volatility in different degrees before and after derivatives and the listing in futures has increased the market volatility.
- Alexakis, P. (2007)¹⁶examined the stock market volatility before and after the introduction of index futures. He found that index futures had no significant effect on the spot markets.
- Paul Dawson (2007)¹⁷ in his journal provides with effective hedging techniques
 for covering foreign exchange risk in overseas equity investments.
- Sascha Wilkens $(2007)^{18}$ in her journal throws light empirically on returns of index call and put options traded at the Eurex i.e. European Exchange.
- Patrícia Teixeira Lopes (2007)¹⁹ in her journal focuses on accounting of energy derivatives in context of introduction of MIBEL derivatives market. This paper brought out that energy producers and users who hedge their risks using

exchange traded futures are coping up with compliance of IAS 39 hedge accounting, as it's easy and straightforward.

- Reddy and Sebastin (2008)²⁰ studied the temporal relationship between the equities market and the derivatives market segments of the stock market using various methods and by identifying lead-lag relationship between the value of a representative index of the equities market and the price of a corresponding index futures contract in the derivatives market. The study observed that price innovations appeared first in the derivatives market and were then transmitted to the equities market. The dynamics of such information transport between stock market and derivatives market were studied using the information theoretic concept of entropy, which captures non-linear dynamic relationship also.
- A new study of Kasman (2008)²¹ examined the impact of futures on volatility of the underlying asset (via GARCH model) including the question of whether a co integrating relation exists between spot prices and futures prices (via ECM model). They used the Istanbul Stock Price Index 30 (ISE 30) futures and spot prices and concluded that there is a long run relation (nearly one-to-one) between spot and futures prices and causality runs from spot prices to future prices, but not vice versa.
- Bodla and Kiran (2008)²² investigated the impact of index derivatives on the return, efficiency and volatility of the S&P CNX Nifty. The results of the study indicate increased market efficiency and reduced volatility with no price change in the underlying market due to introduction of derivatives. However, a

significant increase in volatility on the expiration day of derivative contracts has been observed.

- Satya Swaroop Debasish (2009)²³ in his paper investigated the effect of Nifty Futures trading on the volatility and operating efficiency of Indian Stock Market in general and the underlying stock in particular. The study covers a period of fourteen years i.e. from 1995 to 2009. The author has applied event study approach to test the change in volatility and efficiency of stock returns by making a comparison between pre and post introduction of Nifty Index Futures. The study revealed mixed results i.e. reduced spot volatility and reduced trading efficiency and in the short run, there is a trade-off gains and costs associated with the introduction of derivatives. The study concluded that the derivatives have led to market stabilization cut the market has to pay a price for it in the future of loss in the market efficiency.
 - Prof Pasqualina Porretta, Luca Ferraro, Massimo Proietti and Mario Rosati
 (2009)²⁴ has indicated the size and complexity of financial derivatives traded
 over OTC has shown an upward trend. In relation to this the size of interest rate
 derivatives has increased due its speculative nature, arbitrage and hedging
 strategies.
 - Debasish (2011)²⁵ examines the long-term relationship between spot prices and futures prices. The study finds a single long-term relationship for each of the selected companies across the six sectors.
 - Parantap Basu and William T. Gavin $(2011)^{26}$ in their article throws light on the massive trading on commodity derivatives in the past decade.

- YogeshManharlalDoshit (2011)²⁷ in his study is focused on how the risk could be managed. Products, markets and institutions have been developed to manage the price and income risks. Commodity exchanges provide facility for hedging the risks. This study finds that these commodity exchanges in India are not efficient and require depth to make them meaningful for large number of potential participants, primary producers of commodity.
 - An Chen and Michael Suchanecki (2011)²⁸ in their article, extended to the existing literature on options to Parisian exchange options, i.e. the option to exchange one asset for the other contingent on the occurrence of the Parisian time. Thus, these options are a special kind of barrier option which is knocked out or knocked in only if the value of the first asset is worth more than the other for a certain period of time, i.e. the ratio of the assets must be above or below one (or, in general, a given barrier) for a certain period of time. They derived closed- form solutions in terms of Laplace transforms for these options, introduce new options which are automatically exercised at the Parisian time, conduct some illustrative numerical analyses and give a number of examples from structured equity products, corporate finance, M&A, risk arbitrage and life insurance where the application of Parisian exchange options can be very useful.
- ChiraOldani (2011)29 in his journal focused on the assumption that the prices of the commodities are influenced by their derivatives. The inclusion of derivatives in the financial market has increased the volume of transactions and general price strength.

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- Luiz C. J. Perera (2011)³⁰ highlighted on the market perspectives of credit derivatives in the Brazilian financial structure and the difficulties faced by the banks and regulators to promote the operations of these instruments.
- Sanjay Kanti Das (2012)³¹ studied the investment habits and preferred investment avenues of the household. He examined investment attitude, preference & knowledge of capital market Institutions and instruments among the household. It was opined that households assign highest weightage to safety of investment and in most cases investors across all categories found insurance products to be the preferred avenue of investment.
- P. M. Vasudev (2012)³²in his paper focused on Credit derivatives played an important role in the Credit Crisis of 2008-09. The US Congress enacted the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010 as a comprehensive response to the Credit Crisis. Collateralized Debt Obligations (CDO) and Credit Default Swaps (CDS), which are among the major credit derivatives developed by the financial industry in the recent decades, are among the subjects covered in the lengthy Dodd-Frank legislation. Regulation seeks to streamline trade in derivatives and promote smooth clearing and settlement of transactions. He reviewed that measures proposed in the Dodd-Frank Act for regulating credit derivatives and question their adequacy. The Dodd-Frank Act merely attempts to improve the procedures or mechanics governing the trade in credit derivatives and promote prudential standards for the entities dealing in swaps. These are obviously inspired by experience – namely, freezing of the market during the Credit Crisis and companies such as AIG issuing Credit Default

swaps without serious concern about their ability to honor the obligations assumed under the contracts.

- Erik F. Gerding (, 2012)³³ has focused on the understanding and concerns about credit derivatives this Article argues for viewing many of the policy responses to credit derivatives, such as requirements that these derivatives be exchange traded, centrally cleared, or otherwise subject to collateral or 'margin' requirements, in a second, macroeconomic dimension. These rules have the potential to change – or at least better measure – the amount of liquidity and the supply of credit in financial markets and in the 'real' economy. By examining credit derivatives, this Article illustrates the need to see a wide array of financial regulations in a macroeconomic context.
 - Delphine Lautier and Franck Raynaud (2012)³⁴ in their working paper has used graph theory to highlight market integration, a favourable climate for systematic risk to appear by studying 12 year period returns on futures linked with commodities and other financial assets.
 - SunitaNarang (2012)³⁵ studied on the impact and implications of derivative trading in spot market. It has also focused on derivative trading enhancing the volatility and stability of financial market.
- DR. (MRS.) Kamlesh Gakhar and MS. Meetu (2013)³⁶ in their research journal has studied on the evolution of the Indian derivative market over and its growth .They have also focused on the main issues faced by the derivative markets in spite its growth to address the confidence of the investors in the market.

Antonio Castagna $(2013)^{37}$ in his paper analysed the pricing of the derivatives under CSA agreement.

Raghavendra (2013)³⁸ has focused on the price movement of Nifty and Junior Nifty indices for a period of sixteen years divided into two phases: Phase One, from 1996 to 2002 when derivatives were not introduced in India, and Phase Two, from 2002 to 2012, that is, after the introduction of derivatives. A risk return analysis was undertaken to study on the impact of derivatives in spot market.

- K. Soniya, G. Mohanraj and P. Karthikeyanin(2013)³⁹ in their journal have focused on the operational concepts of derivative instruments and its operations. The study was narrowed down to focus the profit/loss position for buyers and sellers trading in derivatives.
- Shaofang Li (2014)⁴⁰ examines the impact of financial derivatives on systematic risk of publicly listed U.S. bank holding companies (BHCs) from 1997 to 2012. The study revealed that higher use of interest rate derivatives, exchange rate derivatives, and credit derivatives corresponds to greater systematic interest rate risk, exchange rate risk and credit risk. There is a positive relationship between derivatives and risks persisting to derivatives for trading as well as for derivatives for hedging.

- Rose Mary Joy (2015)⁴¹ in her study on derivatives revealed that the main purpose of investment in derivatives is to hedge risk. Investors considered derivative market as a hedging tool than a speculative tool. The study had put insight into the level of acceptance among investors towards the different types of derivatives. The study concluded that the respondents are satisfied with the derivative market and is satisfied with the level of services offered by the broker/agent at the exchanges on derivative instruments. The level of awareness programmes carried out by regulators on derivative are found satisfactory
- Dr. E.V.P.A.S.Pallavi (2015)⁴² in his research journal has tried to focus on the patterns in currency derivatives with respect to National Stock exchange (NSE). The work also focused on the usage of currency derivatives to hedge exchange rate risk to the benefit of the country.
- SnehaNainwal-Holmes (2016)⁴³throwed light on the fears surrounded with derivatives and to harness them to improve the regulations for better control and returns. She also mentioned that regulatory reforms prescribed under the Dodd-Frank Act, European Market Infrastructure Regulation (EMIR) and Basel III could be promising steps towards preventing derivatives from becoming a threat to financial stability.
- MarouanIbenTaarit (2016)⁴⁴ in this paper highlights new developments in pricing derivatives within a default event. Based on stochastic expansion arguments, the pricing is made under a generic stochastic model for the default intensity. The derivative's price is expressed through a deterministic proxy for the default intensity to which is added an explicit summation of terms involving only Greeks computed under the proxy model. The impacts of the intensity's

volatility and the correlation between the default and the remaining risk processes become explicit and can be directly estimated. In addition, the accuracy of the formula does minimally Depend on the smoothness of the payoff function, which makes our approach very suitable for pricing in real market situations.

- □ VilimirYordanov (2016)⁴⁵ provides a novel methodology for precise diagnostics of the dependence in portfolio credit derivatives under a top-down setting. For the purpose he used a powerful but not so popular techniques based on majorization. The structure gives a direct access to the dependence structure of the portfolio. The study is focused on its boundary cases and sees how they are related to the majorization.
- Lawrence R. Glosten, Suresh Nallareddy and Yuan Zou (2016)⁴⁶ his paper investigates the effect of exchange-traded funds' (ETF) trading activity on the informational efficiency of their underlying securities. They found that ETF trading increases informational efficiency for stocks with weak information environments and for stocks with imperfectly competitive equity markets.
- □ SilkeProhl (2016)⁴⁷ in his paper presents the model for valuing credit derivatives portfolio.
- I-Hsuan Ethan Chiang W. Keener Hughen (October 2016)⁴⁸ explores in for the cross sectional pricing of oil futures thereby predicting the future returns.
- Julian Cook and Dennis Philip (2016)⁴⁹ proposed a new set of modeling tools for pricing options on this market and demonstrate their applicability to five liquid currencies versus the dollar. The discrete time affine nested GARCH

based model specification is the first of its type to be estimated directly from spot foreign exchange and short rate (timed deposit) quotes. Out-of-sample testing suggests that an affine term structure with stochastic volatility model estimated at a monthly frequency outperforms most specifications with no recourse to option market quotes to assist calibration.

Peter Christoffersen et. Al (2016)⁵⁰ in their research has gone a long way toward correcting lacuna for derivatives based on crude oil. Their approach is at the current frontier for research on equity derivatives, or indeed beyond it since they allow the jump intensity to vary stochastically over time. Their large sample of daily data spans nearly 25 years of crude oil futures and options, including multiple maturities and degrees of moneyless on each date. Bringing information from both the futures and options markets into the estimation allows much greater statistical power and, more importantly, enforces consistency in the modeling of both derivatives and their underlying. This is a significant advance in our understanding of the price dynamics of the most important commodity, and the futures and option contracts that are based on it.

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CHAPTER 3:

FINANCIAL DERIVATIVES

THEORETICAL BACKGROUND

"Derivatives are weapons of mass destruction" - Warren Buffet

3.1 MEANING AND DEFINITION

Before explaining the term financial derivative, let us see the dictionary meaning of 'derivative'. Webster's Ninth New Collegiate Dictionary (1987) states **Derivatives** as:

- 1. A word formed by derivation. It means, this word has been arisen by derivation.
- 2. As a noun it refers to something based on another source.
- 3. Something derived; it means that some things have to be derived or arisen out of the underlying variables. For example, financial derivative is an instrument indeed derived from the financial market.
- 4. The limit of the ratio of the change is a function to the corresponding change in its independent variable. This explains that the value of financial derivative will change as per the change in the value of the underlying financial instrument.
- 5. A chemical substance related structurally to another substance, and theoretically derivable from it. In other words, derivatives are structurally related to other substances.
- A substance that can be made from another substance in one or more steps.
 Incise of financial derivatives, they are derived from a combination of cash market instruments or other derivative instruments.

For example, you have purchased gold futures on May 2013 for delivery in August 2013. The price of gold on May 2013 in the spot market is `4500 per 10 grams and for futures delivery in August 2013 is `4800 per 10 grams. Suppose in July 2013 the spot price of the gold changes and increased to `4800 per 10 grams. In the same line value of financial derivatives or gold futures will also change.¹

Derivatives are broad set of instruments whose value depend on some underlying assets. The value is derived from underlying financial or physical assets. It is a financial instrument which derives its value/price from the underlying assets. Originally, underlying corpus is first created which can consist of one security or a combination of different securities. The value of the underlying asset is bound to change as the value of the underlying assets keep changing continuously.².

In the words of Robert L. McDonald, "A derivative is simply a financial instrument (or even more simply an agreement between two people) which have a value determined by the prices of something else".³

The securities contracts (Regulation) Act 1956 defines "derivative" as under section 2 (ac). As per this Derivative" includes

- a) "A security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security."
- b) "A contract which derived its value from the price, or index of prices at underlying securities."

The above definition conveys that the derivatives are financial products. Derivative is derived from another financial instrument/ contract called the underlying. A derivative derives its value from underlying assets. Accounting standard SFAS133 defines "a derivative instrument is a financial derivative or other contract which will comprise of all three of the following characteristics:

- a) It has one or more underlying asset, and one or more notional amount or payments provisions or both. Those terms determine the amount of the settlement or settlements.
- b) It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contract that would be expected to have a similar response to changes in market factors.
- c) Its terms require or permit net settlement. It can be readily settled net by a means outside the contract or it provides for delivery of an asset that puts the recipients in a position not substantially different from net settlement.

From the aforementioned, derivatives refer to securities or to contracts that derive from another whose value depends on another contract or assets. As such the financial derivatives are financial instrument whose prices or values are derived from the prices of other underlying financial instruments or financial assets. The underlying instruments may be an equity share, stock, bond, debenture, Treasury bill, foreign currency or even another derivative asset. Hence, financial derivatives are financial instruments whose prices are derived from the prices of other financial instruments.⁴

3.2 EVOLUTION OF DERIVATIVES

"If any one owe a debt for a loan, and a storm prostrates the grain, or the harvest fail, or the grain does not grow for lack of water; in that year, he need not give his creditor any grain, he washes his Debt tablet in water and pays no rent for the year."

The Cradle of Derivatives

This text is the 48th law out of 282 contained in the Code of Hammurabi. Hammurabi was a king of Babylon who reigned, according to some sources, from around 1792 to 1750 BC. Hammurabi engraved the eponymous code on stone steles. This code counts among the oldest written body of laws known today and covers almost all the aspects of civil as well as 2 commercial laws of that time. It deals to a great extent with contractual matters, establishing for example the wages to be paid to an oxdriver or to a doctor. It is renowned to be the most complete code of the Mesopotamian laws that have been conserved until today. In terms of contracts, one may recognise in this 48th law a kind of contract that once translated into a more modern language would stipulate the following: A farmer who has a mortgage on his property is required to make annual interest payments in the form of grain, however, in the event of a crop failure, this farmer has the right not to pay anything and the creditor has no alternative but to forgive the interest due. Experts in the field of derivatives would classify such a contract as a put option. In another word: If the harvest is plentiful and the farmer has enough grain to pay his mortgage interest, the put option would expire worthless. If his harvest fell short, however, he would exercise his right to walk away from making the pavment.⁵

In Ancient Mesopotamia, with a view to encouraging trade and securing the supply of commodities, both in time and geographical distance, the rulers' codes actually required that Purchases, sales and other commercial agreements be in written

form in order to provide buyers and sellers with the greatest possible legal certainty to engage in trade. The purpose was to minimise the "your word against mine" maxim in case of disputes. Merchants of the city-states of the region thus developed, in addition to the codes, commercial contracts. Records of such contracts have been found in cuneiform script on clay tablets. Some types of contracts were arrangements on the future delivery of grain that stipulated for instance before planting that a seller would deliver a certain quantity of grain for a price paid at the time of contracting. Such types of contracts not only dealt with grain but also with all sorts of commodities. Some of the contracts were "bearer" securities that could be transferred to third parties maturity. These types of contracts had the features of today's forwards and were used across borders. By about 1,400 BC, cuneiform script in the Babylonian language was even used in Egypt to record transactions with Crete, Cyprus, the Aegean Islands, Assyria and the Hittites. During the Ancient Mesopotamian period, derivatives contained, most of the time, a description of the parties, a description of the asset to be transferred, the price of the transaction, the date of delivery and sometimes a list and even a description of witnesses. Trading took place at the gates of the cities, at the quaysides in port cities and in the city centres, more precisely at the temples. In addition to their religious, political and military functions, the temples played a significant commercial role. They were directly and indirectly involved in trade and as a consequence in derivatives transactions. They functioned as trade repositories, were parties to contracts and offered warehouse facilities. They also provided quantity and quality measurement standards. Some functions of central clearing already appeared in Ancient Mesopotamia where temples operated as clearinghouses. Long-distance trade, including derivatives was regulated and supervised by the government ⁶

3.2.1 DERIVATIVES DESIGNED BY GREEK PHILOSOPHERS

A subsequent trace of derivatives in history can be found in Aristotle's Politics. Aristotle tells the story of Thales, another philosopher but also mathematician, who lived from around 625 to 550 BC in Miletus, which was one of the major cities of Ancient Greece. During wintertime, Thales predicted an unusually large olive harvest. He seized the opportunity to negotiate with the olive press owners the right, but not the obligation, to hire all the olive presses in the region for the following autumn. To secure this right, Thales made a cash deposit. It happened that the harvest was as predicted and the demand for the use of olive presses soared. Thales was then able to lease the presses at a substantial premium and made a fortune. Aristotle sought to demonstrate how easy it was for philosophers to become rich if they so desired, despite it not being their aim, but he did not seek to create a financial product that experts would today name a call option.⁷

3.2.2 DERIVATIVES IN THE MIDDLE AGES

In the middle Ages, derivatives continued to be an instrument facilitating trade. One early example of derivatives is a form of command which was used by Italian merchants from the 10th century on. Commandas were a kind of commercial partnership contract for sea or land ventures. One partner put up the money, whereas the other travelled on the venture. Many of these contracts could be considered as commodity forward contracts, as in exchange of the invested capital, the "venturer" agreed to acquire specified commodities. Another example of derivatives is the monti share. Monti shares were issued by Italian merchant cities in order to raise money. These shares were promises by the governments to repay debts in the future. It

Began as the sale of future government revenues to investors. By the 13th century, these shares were traded in secondary markets and were even used as a means of payment for goods or services instead of cash. Because they were perfectly fungible, these shares were the ideal instrument to develop contracts markets. However, these shares could not be sold freely, in particular to foreigners, and prices fluctuated with the fortunes of the cities. A further example of derivatives is the bill of exchange. Bills of exchange provided a medium of exchange in long distance trade. They were a promise to repay a certain amount of money in a different location, in a different currency and at a future date. Bills of exchange generated a credit as well as a change operation, which were both intimately linked. As trade expanded, the exchange business grew and professional money changers and trading of such bills emerged. The holders of the bills could hold them until maturity or sell them to third parties with a view to realising a financial gain. In transactions, they replaced the sending of gold or silver coins, which were sometimes out of stock. As it was difficult and costly to find buyers and sellers for specific transactions, centralised markets evolved. They facilitated cash transactions, but were also places where contracting for future delivery was common practice.

In market places, trading on the basis of samples of goods was common in the medieval time. It relieved merchants of the need to transport large quantities of merchandise on dangerous roads and with no guarantee of being able to sell it. Commercial agreements for future delivery often contained option-like features. For example, if the delivered merchandise was not of the same quality as the original sample, the buyer had the right to refuse the delivery. An early form of markets in the middle Ages was the periodical fair, which was supervised by Church institutions. Italian merchant cities had also well organised local markets. In the Most Serene Republic of Venice, for instance, there were specialised markets to respond to the

special Trading needs of different merchant groups. Derivatives mainly remained, in the current terminology, "over-the-counter" but the markets offered a kind of organisation with 6 regard to the "counters". Over time, periodical medieval markets lost their importance in trade in favour of permanent trading places located at the junction of port sites and land routes. ⁸

3.2.3 ORIGIN OF MODERN DERIVATIVE TRADING

The very first modern organised exchange was the Chicago Board of Trade (CBOT) established in North America in 1848. Other exchanges in futures trading in US included New York Cotton Exchange, established in 1870, New York Coffee Exchange in 1885. After CBOT, Chicago Mercantile Exchange (CME), the New York Mercantile Exchange and Chicago Board Options Exchange were established. The futures dominated the derivative trading for than 100 years. The new era of derivative trading began with the introduction of financial derivatives in 1970s. In 1975 CBOT created the first interest rate futures contract based on Ginnie Mae (GNMA) Mortgages.

In April 1973, the Chicago Board of Options Exchange was set up specifically for the purpose of trading in derivatives. In the year 1973 is known for the establishment of the Options exchange and publication of the options pricing model of Fisher Black and Myron Scholes. Equity based derivatives emerged in the 1980s. In 1982, the Kansas City Board of Trade launched the first stock index futures. In 1983 Chicago Board Options Exchange made a decision to create an option based on index of stocks known as CBOE 100 index and it was turned over to Standard and Poor's,later to be known as S&P 100.⁹

3.3 DERIVATIVE TRADING IN INDIA.

The origin of derivatives can be traced back to the need of farmers to protect themselves against fluctuations in the price of their crop. From the time it was sown to the time it was ready for harvest, farmers would face price uncertainty. Through the use of simple derivative products, it was possible for the farmer to partially or fully transfer price risks by locking-in asset prices. These were simple contracts developed to meet the needs of farmers and were basically a means of reducing risk.

Derivative markets in India have been in existence in one form or the other for a long time. In the area of commodities, the Bombay Cotton Trade Association started future trading way back in 1875. This was the first organized futures market. Then Bombay Cotton Exchange Ltd. in 1893, Gujarat VyapariMandall in 1900, Calcutta Hesstan Exchange Ltd. in 1919 had started future market. After the country attained independence, derivative market came through a full circle from prohibition of all sorts of derivative trades to their recent reintroduction. In 1952, the government of India banned cash settlement and options trading, derivatives trading shifted to informal forwards markets. In recent years government policy has shifted in favour of an increased role at market based pricing and less suspicious derivatives trading. The first step towards introduction of financial derivatives trading in India was the promulgation at the securities laws (Amendment) ordinance 1995. It provided for withdrawal at prohibition on options in securities. The last decade, beginning the year 2000, saw lifting of ban of futures trading in many commodities. Around the same period, national electronic commodity exchanges were also set up.¹⁰

The exchange traded derivatives started in India in June 2000 with SEBI permitting BSE and NSE to deal in equity derivative segment. To begin with, SEBI approved trading in index

Futures contracts based on S&P CNX Nifty and BSE-30 Sensex index, which commenced trading in June 2000. Later, trading in Index options commenced in June 2001 and trading in options on individual stocks commenced in July 2001. Futures contracts on individual stocks started in November 2001. In July 2012, SEBI has granted permission to MCX-SX to deal in equity derivatives. Starting from a controlled economy, India has moved towards a world where prices fluctuate every day. The introduction of risk management instruments in India gained momentum in the last few years due to liberalisation process and Reserve Bank of India's (RBI) efforts in creating currency forward market. Derivatives are an integral part of liberalisation process to manage risk. NSE gauging the market requirements initiated the process of setting up derivative markets in India. In July 1999, derivatives trading commenced in India. In less than three decades of their coming into vogue, derivatives markets have become the most important markets in the world. Today, derivatives have become part and parcel of the day-to-day life for ordinary people in major part of the world. Until the advent of NSE, the Indian capital market had no access to the latest trading methods and was using traditional out-dated methods of trading. There was a huge gap between the investors' aspirations of the markets and the available means of trading. The opening of Indian economy has precipitated the process of integration of India's financial markets with the international financial markets. Introduction of risk management instruments in India has gained momentum in last few years thanks to Reserve Bank of India's efforts in allowing forward contracts, cross currency options etc. which have developed into a very large market.

3.3.1 DEVELOPMENT OF DERIVATIVE TRADING IN INDIA.

The first step towards introduction of derivatives trading in India was the promulgation of the Securities Laws (Amendment) Ordinance, 1995, which withdrew the prohibition on options in securities. The market for derivatives, however, did not take off, as there was no regulatory framework to govern trading of derivatives. SEBI set up a 24-member committee under the Chairmanship of Dr.L.C.Gupta on November 18, 1996 to develop appropriate regulatory framework for derivatives trading in India. The committee submitted its report on March 17, 1998 prescribing necessary preconditions for introduction of derivatives trading in India. The committee recommended that derivatives should be declared as 'securities' so that regulatory framework applicable to trading of 'securities' could also govern trading of securities. SEBI also set up a group in June 1998 under the Chairmanship of Prof.J.R.Varma, to recommend measures for risk containment in derivatives market in India. The report, which was submitted in October 1998, worked out the operational details of margining system, methodology for charging initial margins, broker net worth, deposit requirement and real-time monitoring requirements. The Securities Contract Regulation Act (SCRA) was amended in December 1999 to include derivatives within the ambit of 'securities' and the regulatory framework were developed for governing derivatives trading. The act also made it clear that derivatives shall be legal and valid only if such contracts are traded on a recognized stock exchange, thus precluding OTC derivatives. The government also rescinded in March 2000, the three decade old notification, which prohibited forward trading in securities. Derivatives trading commenced in India in June 2000 after SEBI granted the final approval to this effect in May 2001. SEBI permitted the derivative segments of two stock exchanges, NSE and BSE, and their clearing house/corporation to commence trading and settlement in approved derivatives

contracts. To begin with, SEBI approved trading in index futures contracts based on S&P CNX Nifty and BSE–30 (Sense) index. This was followed by approval for trading in options based on these two indexes and options on individual securities.

The trading in BSE Sensex options commenced on June 4, 2001 and the trading in options on individual securities commenced in July 2001. Futures contracts on individual stocks were launched in November 2001. The derivatives trading on NSE commenced with S&P CNX Nifty Index futures on June 12, 2000. The trading in index options commenced on June 4, 2001 and trading in options on individual securities commenced on July 2, 2001. Single stock futures were launched on November 9, 2001. The index futures and options contract on NSE are based on S&P CNX Trading and settlement in derivative contracts is done in accordance with the rules, byelaws, and regulations of the respective exchanges and their clearing house/corporation duly approved by SEBI and notified in the official gazette. Foreign Institutional Investors (FIIs) are permitted to trade in all Exchange traded derivative products.

The following are some observations based on the trading statistics provided in the NSE report on the futures and options (F&O):

- Single-stock futures continue to account for a sizable proportion of the F&O segment. It constituted 70 per cent of the total turnover during June 2002. A primary reason attributed to this phenomenon is that traders are comfortable with single-stock futures than equity options, as the former closely resembles the erstwhile badla system.
- On relative terms, volumes in the index options segment continue to remain poor. This may be due to the low volatility of the spot index. Typically, options are considered more valuable when the volatility of the underlying (in this case, the

index) is high. A related issue is that brokers do not earn high commissions by recommending index options to their clients, because low volatility leads to higher waiting time for roundtrips.

- Put volumes in the index options and equity options segment have increased since January 2002. The call-put volumes in index options have decreased from 2.86 in January 2002 to 1.32 in June. The fall in call-put volumes ratio suggests that the traders are increasingly becoming pessimistic on the market.
- Farther month futures contracts are still not actively traded. Trading in equity options on most stocks for even the next month was non-existent.
- Daily option price variations suggest that traders use the F&O segment as a less risky alternative (read substitute) to generate profits from the stock price movements. The fact that the option premiums tail intra-day stock prices is evidence to this. If calls and puts are not looked as just substitutes for spot trading, the intra-day stock price variations should not have a one-to-one impact on the option premiums.
- The spot foreign exchange market remains the most important segment but the derivative segment has also grown. In the derivative market foreign exchange swaps account for the largest share of the total turnover of derivatives in India followed by forwards and options.
- Significant milestones in the development of derivatives market have been:
- a) Permission to banks to undertake cross currency derivative transactions subject to certain conditions (1996)

- b) Allowing corporates to undertake long term foreign currency swaps that contributed to the development of the term currency swap market (1997)
- c) Allowing dollar rupee options (2003).
- d) Introduction of currency futures (2008). I would like to emphasise that currency swaps allowed companies with ECBs to swap their foreign currency liabilities into rupees. However, since banks could not carry open positions the risk was allowed to be transferred to any other resident corporate. Normally such risks should be taken by corporates who have natural hedge or have potential foreign exchange earnings. But often corporate assume these risks due to interest rate differentials and views on currencies. ¹¹

3.4. OVER THE COUNTER DERIVATIVES VS EXCHANGE TRADED DERIVATIVES.

Over the Counter (OTC) derivatives are traded between two parties (bilateral negotiation) without going through an exchange or any other intermediaries. OTC is the term used to refer stocks that trade via dealer network and not any centralized exchange. These are also known as unlisted stocks where the securities are traded by broker-dealers through direct negotiations ¹².

In Exchange Traded Derivatives derivative, traded through an authorized exchange and cleared through a clearinghouse, that is characterized by standard terms and conditions, and is subject to standard margin requirements and clearing rules. Trading in exchange derivatives may occur in physical open outcry form, or increasingly in electronic form. The three main classes of exchange traded derivatives are futures, options, and futures options. contracts are available on a broad range of national and international asset references, including interest rates, foreign exchange, equities, and commodities. Also known as listed derivative.¹³

3.5 TYPES AND CLASSIFICATION OF DERIVATIVES.



Figure 3.1: General Classification of Derivatives.

There are many ways in which the derivatives can be categorized based on the markets where they trade, based on the underlying asset and based on the product feature etc. some ways of classification are following:

(1) On the basis of linear and non-linear: On the basis of this classification the financial derivatives can be classified into two big class namely linear and non-linear derivatives:

 (a) Linear derivatives: Those derivatives whose Over-the-counter (OTC) traded derivative: These values depend linearly on the underlying's value are called linear derivatives.

They are following:

- (i) Forwards.
- (ii) Futures.
- (iii) Options.
- (b) Non-linear derivatives: Those derivatives whose value is a non-linear function of the underlying are called non-linear derivatives.

They are following:

- (i) Options.
- (ii) Convertibles.

(iii) Equity linked bonds.

- (2) On the basis of financial and non-financial: On the basis of this classification the derivatives can be classified into two category namely financial derivatives and non-financial derivatives.
- (a) Financial derivatives: Those derivatives which are of financial nature are called financial derivatives.

They are following:

- (i) Forwards.
- (ii) Futures.
- (iii) Options.
- (iv) Swaps.

The above financial derivatives may be credit derivatives, forex, currency fixedincome, interest, insider trading and exchange traded.

(b) Non-financial derivatives: Those derivatives which are not of financial nature are called non-financial derivatives.

They are following:

- (i) Commodities.
- (ii) Metals.
- (iii) Weather.
- (iv) Others.

(1) On the basis of market where they trade: On the basis of this classification, the derivatives can be classified into three categories namely; OTC traded derivatives, exchange-traded derivative and common derivative. Derivative contracts are traded (and privately negotiated) directly between two parties, without going through an exchange or other intermediary.

(a) The OTC derivative market is the largest market for derivatives and largely unregulated with respect to disclosure of information between parties.

They are following:

- (i) Swaps.
- (ii) Forward rate agreements.
- (iii) Exotic options
- (iv) Other exotic derivative.

(b) Exchange traded derivative: Those derivative instruments that are traded via specialized derivatives exchange of other exchange. A derivatives exchange is a market where individual trade standardized contracts that have been defined by the exchange. Derivative exchange act as an intermediary to all related transactions and takes initial margin from both sides of the trade to act as a guarantee.

They may be followings:

- (i) Futures
- (ii) Options
- (iii) Interest rate
- (iv) Index product.
- (v) Convertible
- (vi) Warrants.
- (vii) Others.
- (c) Common derivative: These derivatives are common in nature/trading and classification.

They are following:

- (i) Forwards.
- (ii) Futures.
- (iii) Options.
- (iv) Binary options.
- (v) Warrant.
- (vi) Swaps.

3.5.1 FORWARDS.

A forward contract is a simple customized contract between two parties to buy or sell an asset at a certain time in the future for a certain price. Unlike future contracts, they are not traded on an exchange, rather traded in the over-the-counter market, usually between two financial institutions or between a financial institution and its client.

Example:

An Indian company buys Automobile parts from USA with payment of one million dollar due in 90 days. The importer, thus, is short of dollar that is, it owes dollars for future delivery. Suppose present price of dollar is ` 48. Over the next 90 days, however, dollar might rise against ` 48. The importer can hedge this exchange risk by negotiating a 90 days forward contract with a bank at a price ` 50. According to forward contract in 90 days the bank will give importer one million dollar and importer will give the bank 50 million rupees hedging future payment with forward contract. On the due date importer will make a payment of50 million to bank and the bank will pay one million dollar to importer, whatever rate of the dollar is after 90 days. So this is a typical example of forward contract on currency.

3.5.2 FUTURES.

Futures Contract means a legally binding agreement to buy or sell the underlying security on a future date. Future contracts are the organized/standardized contracts in terms of quantity, quality (in case of commodities), delivery time and place for settlement on any date in future. The contract expires on a pre-specified date which is called the expiry date of the contract. On expiry, futures can be settled by delivery of the underlying asset or cash. Cash settlement enables the settlement of obligations arising out of the future/option contract in cash. **Futures contracts** represent a step beyond

forward contracts. Futures contracts and forwardContracts accomplish the same economic task, which is to specify a price today for future delivery. This specified price is called the **futures price**. However, while a forward contract can be struck between any two parties, futures contracts are managed through an organized futures exchange. Sponsorship through a futures exchange is a major distinction between a futures contract and a forward contract.

To properly understand a futures contract, we must know the specific terms of the contract. In general, futures contracts must stipulate at least the following five contract terms:

- 1. The identity of the underlying commodity or financial instrument,
- 2. The futures contract size,
- 3. The futures maturity date, also called the expiration date, and
- 4. The delivery or settlement procedure,
- 5. The futures price.

3.5.2.1 UNDERSTANDING THE BASIC TERMS.

Lot Size: The exchange specifies a particular lot size for each type of derivatives. When you buy or sell futures, you do that in 'lots'. This lot size is not divisible. For example – the lot size of reliance futures is 250 shares. So, taking 1 lot of reliance futures would involve 250 shares. So if Reliance shares are trading at Rs.1000, then the value of 1 lot is Rs.250,000 (Rs 1000 x 250 Numbers). The exchange specifies the lot size. Lot size would be different for different stocks/commodities. Not all stocks traded in the exchange have equivalent futures contract. Stock are selected on the basis criteria specified by the SEBI.

Value of a Lot: The value of one lot would be the price of the share x lot size. In most cases, it is approximately Rs 2-3 lakhs.

Margin Money: When a person enters into a futures contract, he need not pay the full value of the contract upfront-only a small percentage needs to be paid. That payment is called margin money. Usually margin money would be a percentage ranging from 10% to as high as 35 or 40% in times of heavy volatility. For example – the margin required for buying 1 lot of reliance futures now is 15.70%. I.e., approximately Rs 29,000.00.The actual margin money required to be maintained changes every day, specified by the NSE.

Life of a Contract: The life of one contract is 3 months. At any point of time, 3 futures contract will be available for trading with different time limit to expiry – 1month, 2 month and 3 month contract. (Also called near month, mid-month and far month contracts)

Marked to Market: Futures contracts are monitored regularly by the authorities. Hence, Futures prices are marked to market. It means that every change in value to the investor is shown in the investor's account at the end of each trading day. The implication is that, if your futures position is in profits on a particular day, your account is credited with that much of profits (which would be taken away, if the prices fall on the next day). This process would keep going until you settle the contract. At the same time, if your position is in loss, the loss will be shown in your account on the end of the trading day and if such loss is beyond your initial margin you've given, you will have to pay the difference. **Display on the Trading Screen** Futures are displayed on the trading screen just like equities. Each future contract will be in a coded form just like equities. Future contracts are displayed in alphabetical order. For a particular share / index / commodity, 3 contracts will be displayed. The near month contracts are listed first. The trading screen would also show the open price, high, low, traded quantity etc.

Long and Short positions Unsettled or open purchase position at any point of time is called a long position and unsettled sales position at any time point of time is called a short position.

Spot and Spread. The cash market price is called the 'spot price' and the prices of futures contracts are called the 'futures price'. The term spread used to describe the difference between two prices. For example – reliance October futures may be trading at Rs 750 per share and reliance December futures may be trading at say, Rs 765. The difference is called spread. In fact, spread is a general term. The difference between the 'bid price' and 'ask price' is also called spread. Futures price will be greater than the spot price in a normal market.

Expiry Date of a Contract: Any futures contract would expire on the last Thursday of a month. On that date the contract ceases to exist and all the obligations must be fulfilled and the rights, if any, become invalid thereafter. Near month contract expire on the last Thursday of that month. For example – Infosys July contract (1 month) would expire on the last Thursday of July while Infosys September contract which is available for trading in July (3months contract) would expire on the last Thursday of September. If the last Thursday happens to be a holiday (like Christmas), the expiry will be fixed for the next day. In case of unforeseen circumstances the maturity date may be shifted to another day by the SEBI through a notification. At the expiry day, all contracts are
'automatically' settled. One the next day after the maturity, a new 3 month contract will be introduced.¹⁴

3.5.2.2 Basic mechanism of futures.

A futures contract calls for the delivery of the specified quantity at the specified rate on specified date. Or, before the maturity date it can be squared off. In India, the financial derivatives (futures) are compulsorily squared off on the maturity date. However, in case of commodities futures, delivery is made, if required, by the transfer of warehouse receipt .An investor can buy (a long position) or sell (a short position) a futures contract. The profit or payoff position of a futures contract depends on the differences between the specified price (of the futures contract) and the actual market price prevailing on the maturity date. For example, if an investor has purchased a futures contract in HLL at the rate of ` 300 and one contract in for 500 shares. The value of the contract is Rs.1,55,000 and his profit is ` 5,000. Similarly, if the rate is ` 296, then his loss is Rs. 2,000. Further, that if the investor has sold initially, then his loss and profit position would be `Rs.5,000 and Rs. 2,000 respectively. This can be summarized as follows:





Futures contact is zero sum game. Profit to one party is the loss of the other party. Simple reason being that every long position is represented by a short position in the market. The payoff positions of the long investor and short investor in futures are shown in Figure 3.01.

For Long investor: Profit = Spot price at Maturity – Futures Price Loss = Futures Price – Spot Price at Maturity For Short investor: Profit = Futures price – Spot Price at Maturity Loss = Spot Price at Maturity – Futures Price

In Figure 3.01 (A), K is the strike price. The figure shows that as the spot price at maturity increases, the profit of the long investor also increases. This break-even level is one when spot price is equal to strike price. Similarly, Figure 3.01 (B) shows that maximum profit to short investor appears if the spot price is 0.Thus profit decreases and Loss increases as the spot price increases. The breakeven appears when the spot price is equal to the strike price. The diagrams for buyer and seller are mirror image of each other.

Example:

A silver manufacturer is concerned about the price of silver, since he will not be able to plan for profitability. Given the current level of production, he expects to have about20.000 ounces of silver ready in next two months. The current price of silver on May 10 is `1052.5 per ounce, and July futures price at FMC is ` 1068 per ounce, which he believes to be satisfied price. But he fears that prices in future may go down. So he will enter into a futures contract. He will sell four contracts at MCX where each contract is of 5000 ounces at ` 1068 for delivery in July.

3.5.2.3 SETTLEMENT OF FUTURES CONTRACTS ON INDEX AND INDIVIDUAL SECURITIES.

The positions in the futures contracts for each member is marked-to-market to the daily settlement price of the futures contracts at the end of each trade day. The profits/ losses are computed as the difference between the trade price or the previous day's settlement price, as the case may be, and the current day's settlement price. The Clearing Members who have suffered a loss are required to pay the mark-to-market loss amount to NSCCL which is passed on to the members who have made a profit. This is known as daily mark-to-market settlement. Theoretical daily settlement price for unexpired futures contracts, which are not traded during the last half an hour on a day, is currently the price computed as per the formula detailed as,

F = S * e rt

Where:

F = theoretical futures price

S = value of the underlying index

r = rate of interest (MIBOR)

t = time to expiration

Rate of interest may be the relevant MIBOR rate or such other rate as may be specified. After daily settlement, all the open positions are reset to the daily settlement price. Clearing Members are responsible to collect and settle the daily mark to market profits / losses incurred by the TMs and their clients clearing and settling through them. The pay-in and pay-out of the mark-to-market settlement is on T+1 days (T = Trade day). The mark to market losses or profits are directly debited or credited to the Clearing Members clearing bank account.

Option To Settle Daily MTM On T+0 Day

Clearing members may opt to pay daily mark to market settlement on a T+0 basis. The option can be exercised once in a quarter (Jan-March, Apr-June, and Jul-Sep & Oct-Dec). Clearing members who wish to opt to pay daily mark to market settlement on T+0 basis shall intimate the Clearing Corporation as per the format specified in specified format. Clearing members who opt for payment of daily MTM settlement amount on a T+0 basis shall not be levied the scaled up margins. The pay-out of MTM settlement shall continue to be done on T+1 day basis.

Final Settlement

On the expiry of the futures contracts, NSCCL marks all positions of a CM to the final settlement price and the resulting profit / loss is settled in cash. The final settlement of the futures contracts is similar to the daily settlement process except for the method of computation of final settlement price. The final settlement profit / loss is computed as the difference between trade price and the previous day's settlement price, as the case may be, and the final settlement price of the relevant futures contract. Final settlement loss/ profit amount is debited/ credited to the relevant CMs clearing bank account on T+1 day (T= expiry day).Open positions in futures contracts cease to exist after their expiration day. ¹⁵

3.5.3 OPTIONS

Options Contract is a type of Derivatives Contract which gives the buyer/holder of the contract the right (but not the obligation) to buy/sell the underlying asset at a predetermined price within or at end of a specified period. The buyer / holder of the option purchases the right from the seller/writer for a consideration which is called the premium. The seller/writer of an option is obligated to settle the option as per the terms of the contract when the buyer/holder exercises his right. The underlying asset could include securities, an index of prices of securities etc.

Under Securities Contracts (Regulations) Act, 1956 options on securities has been defined as "option in securities" meaning a contract for the purchase or sale of a right to buy or sell, or a right to buy and sell, securities in future, and includes a teji, a mandi, a teji mandi, a galli, a put, a call or a put and call in securities. An Option to buy is called Call option and option to sell is called Put option. Further, if an option that is exercisable on or before the expiry date is called American option and one that is exercisable only on expiry date, is called European option. The price at which the option is to be exercised is called Strike price or Exercise price.

Therefore, in the case of American options the buyer has the right to exercise the option at any time on or before the expiry date. This request for exercise is submitted to the Exchange, which randomly assigns the exercise request to the sellers of the options, who are obligated to settle the terms of the contract within a specified time frame.

Example:

You look up the stock price and "HUM" is currently trading for \$42 a share. You buy 10 option contracts that give you the "right to buy" 1,000 shares of "HUM" at a "set price" of \$45 anytime between now and March (time period).

- \Box The underlying security: HUM
- The expiration month: March
- □ The strike or purchase price: \$45
- □ The type of option: Call, the right to buy stock

The contracts cost you \$1,665. That is what they were worth the day you bought them when the stock was trading at \$42 a share. This \$1,665 is a small price to pay compared to the \$42,000 you would have paid if you bought the stock outright (\$42 * 1000 shares).Eight days pass by and the stock price of Humana, Inc. increases in value as you expected. The stock is now trading for \$46 a share. Your contract is now worth more money and you essentially turn around and sell it to someone else for let's say \$2,534. In doing so, you would make a quick \$869 or 52% return on your money.

An option is a contract, which gives the buyer (holder) the right, but not the obligation, to buy or sell specified quantity of the underlying assets, at a specific (strike) price on or before a specified time (expiration date). The underlying may be commodities like wheat/ rice/ cotton/ gold/ oil or financial instruments like equity stocks/ stock index/ bonds etc.

3.5.3.1 IMPORTANT TERMINOLOGY

Underlying - The specific security / asset on which an options contract is based.

Option Premium - This is the price paid by the buyer to the seller to acquire the right to buy or sell

Strike Price or Exercise Price - The strike or exercise price of an option is the specified/ pre-determined price of the underlying asset at which the same can be bought or sold if the option buyer exercises his right to buy/ sell on or before the expiration day.

Expiration date - The date on which the option expires is known as Expiration Date. On Expiration date, either the option is exercised or it expires worthless. **Exercise Date** - is the date on which the option is exercised. In case of European Options the exercise, date is same as the expiration date while in case of American Options, the options contract may be exercised any day between the purchase of the contract and its expiration date (see European/American Option)

Open Interest - The total number of options contracts outstanding in the market at any given point of time.

Option Holder: is the one who buys an option which can be a call or a put option. He enjoys the right to buy or sell the underlying asset at a specified price on or before specified time. His upside potential is unlimited while losses are limited to the Premium paid by him to the option writer.

Option seller/ writer: is the one who is obligated to buy (in case of Put option) or to sell (in case of call Option), the underlying asset in case the buyer of the option decides to exercise his option. His profits are limited to the premium received from the buyer while his downside is unlimited.

Option Class: All listed options of a particular type (i.e., call or put) on a particular underlying instrument, e.g., all Sensex Call Options (or) all Sensex Put Options

Option Series: An option series consists of all the options of a given class with the same expiration date and strike price. E.g. BSXCMAY3600 is an options series which includes all Sensex Call options that are traded with Strike Price of 3600 & Expiry in May.¹⁶

3.5.3.2 Exercising The Option

If the holder of an equity option decides to exercise his right to buy (in the case of a call) or to sell (in the case of a put) the underlying shares of stock, the holder must direct his broker (if an Options Clearing Corporation clearing member) to submit an exercise notice to Options Clearing Corporation . In order to ensure that an option is exercised on a particular day, the holder must notify his broker before the broker's cutoff time for accepting exercise instructions on that day. Different firms may have different cut-off times for accepting exercise instructions from customers, and those cutoff times may be different for different classes of options. Options Clearing Corporation will then assign this exercise notice to one or more clearing members with short positions in the same series in accordance with its established procedures. If the exercise is assigned to a clearing member's customers' account, the clearing member will, in turn, allocate the exercise to one or more of its customers (either randomly or on a first in first out basis) who hold short positions in that series. The assigned clearing member will then be obligated to sell (in the case of a call) or buy (in the case of a put) the underlying shares of stock at the specified strike price. Generally speaking, Options Clearing Corporation clearing members settle the delivery and payment obligations arising from the exercise of a physically-settled equity option through the facilities of the correspondent stock clearing corporation.

3.5.3.3 Settlement of Options Contracts on Index And Individual Securities

Premium settlement is cash settled and settlement style is premium style. The premium payable position and premium receivable positions are netted across all option contracts for each CM at the client level to determine the net premium payable or receivable amount, at the end of each day. The CMs who have a premium payable position are required to pay the Premium amount to NSCCL which is in turn passed on to the members who have a premium receivable position. This is known as daily premium settlement.CMs are responsible to collect and settle for the premium amounts from the TMs and their clients clearing and settling through them. The pay-in and pay-out of the premium settlement is on T+1 day (T = Trade day). The premium payable amount and premium receivable amount are directly debited or credited to the CMs clearing bank account. Final Exercise settlement is effected for option positions at in-the-money strike prices existing at the close of trading hours, on the expiration day of an option contract. Long positions at in-the money strike prices are automatically assigned to short positions in option contracts with the same series, on a random basis.

For index options contracts and options contracts on individual securities, exercise style is European style. Final Exercise is Automatic on expiry of the option contracts. Option contracts, which have been exercised, shall be assigned and allocated to Clearing Members at the client level. Exercise settlement is cash settled by debiting/ crediting of the clearing accounts of the relevant Clearing Members with the respective Clearing Bank. Final settlement loss/ profit amount for option contracts on Index is debited/ credited to the relevant CMs clearing bank account on T+1 day (T = expiry day).Final settlement loss/ profit amount for option contracts on Individual Securities is debited/ credited to the relevant CMs clearing bank account on T+1 day (T = expiry day).Open positions, in option contracts, cease to exist after their expiration day. The pay-in / pay-out of funds for a CM on a day is the net amount across settlements and all TMs/ clients, in F&O Segment.¹⁷

3.5.4 SWAPS

A swap is an agreement between two or more people or parties to exchange sets of cash flows over a period in future. Swaps are agreements between two parties to exchange assets at predetermined intervals. Swaps are generally customized transactions. The swaps are innovative financing which reduces borrowing costs, and to increase control over interest rate risk and FOREX exposure. The swap includes both spot and forward transactions in a single agreement. Swaps are at the centre of the global financial revolution.

Swaps are useful in avoiding the problems of unfavourable fluctuation in FOREX market. The parties that agree to the swap are known as counter parties. The two commonly used swaps are interest rate swaps and currency swaps. Interest rate swaps which entail swapping only the interest related cash flows between the parties in the same currency. Currency swaps entail swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than the cash flows in the opposite direction.

The most common type of interest rate swap is one in which Party A agrees to make payments to Party B based on a fixed interest rate, and Party B agrees to make payments to Party A based on a floating interest rate. The floating rate is tied to a reference rate (in almost all cases, the London Interbank Offered Rate, or LIBOR).

Example:

Assume that Charlie owns a \$1,000,000 investment that pays him LIBOR + 1% every month. As LIBOR goes up and down, the payment Charlie receives changes. Now assume that Sandy owns a \$1,000,000 investment that pays her 1.5% every month. The payment she receives never changes. Charlie decides that that he would rather lock in a

constant payment and Sandy decides that she'd rather take a chance on receiving higherpayments. So Charlie and Sandy agree to enter into an interest rate swap contract. Under the terms of their contract, Charlie agrees to pay Sandy LIBOR + 1% per month on a \$1,000,000 principal amount (called the "notional principal" or "notional amount"). Sandy agrees to pay Charlie 1.5% per month on the \$1,000,000 notional amount.¹⁸

3.6 MARKET PARTICIPANTS IN DERIVATIVE MARKET

There are broadly three types of participants in the derivatives market - hedgers, traders (also called speculators) and arbitrageurs. An individual investor may play different roles in different market circumstances.

Hedgers: They face risk associated with the prices of underlying assets and use derivatives to reduce their risk. Corporations, investing institutions and banks all use derivative products to hedge or reduce their exposures to market variables such as interest rates, share values, bond prices, currency exchange rates and commodity prices.

Speculators: They try to predict the future movements in prices of underlying assets and based on the view, take positions in derivative contracts. Derivatives are preferred over underlying asset for speculation purpose, as they offer leverage, are less expensive (cost of transaction is generally lower than that of the underlying) and are faster to execute in size (high volumes market).

Arbitrageurs: Arbitrage is a deal that produces profit by exploiting a price difference in a product in two different markets. Arbitrage originates when a trader purchases an asset cheaply in one location and simultaneously arranges to sell it at a higher price in another location. Such opportunities are unlikely to persist for very long, since arbitrageurs would rush in to these transactions, thus closing the price gap at different

locations.¹⁹

3.7 USES OF DERIVATIVES

Derivatives are supposed to provide the following services:

- 1) One of the most important services provided by the derivatives is to control, avoid, shift and manage efficiently different types of risks through various strategies like hedging, arbitraging, spreading, etc. Derivatives assist the holders to shift or modify suitably the risk characteristics of their portfolios. These are specifically useful in highly volatile financial market conditions like erratic trading, highly flexible interest rates, volatile exchange rates and monetary chaos.
- 2) Derivatives serve as barometers of the future trends in prices which result in the discovery of new prices both on the spot and futures markets. Further, they help in disseminating different information regarding the futures markets trading of various commodities and securities to the society which enable to discover or form suitable or correct or true equilibrium prices in the markets. As a result, they assist in appropriate and superior allocation of resources in the society.
- 3) As we see that in derivatives trading no immediate full amount of the transaction is required since most of them are based on margin trading. As a result, large numbers of traders, speculators arbitrageurs operate in such markets. So, derivatives trading enhance liquidity and reduce transaction costs in the markets for underlying assets.
- 4) The derivatives assist the investors, traders and managers of large pools of funds to devise such strategies so that they may make proper asset allocation increase their yields and achieve other investment goals.

- 5) It has been observed from the derivatives trading in the market that the derivatives have smoothen out price fluctuations, squeeze the price spread, integrate price structure at different points of time and remove gluts and shortages in the markets.
- 6) The derivatives trading encourage the competitive trading in the markets, different risk taking preference of the market operators like speculators, hedgers, traders, arbitrageurs, etc. resulting in increase in trading volume in the country. They alsoattract young investors, professionals and other experts who will act as catalysts to the growth of financial markets.
- 7) Lastly, it is observed that derivatives trading develop the market towards 'complete markets'. Complete market concept refers to that situation where no particular investors be better off than others, or patterns of returns of all additional securities are spanned by the already existing securities in it, or there is no further scope of additional security.

3.8 CRITIQUES OF DERIVATIVES

Besides from the important services provided by the derivatives, some experts have raised doubts and have become critique on the growth of derivatives. They have warned against them and believe that the derivatives will cause to destabilization, volatility, financial excesses and oscillations in financial markets. It is alleged that they assist the speculators in the market to earn lots of money, and hence, these are exotic instruments. In this section, a few important arguments of the critiques against derivatives have been discussed.

Speculative and Gambling Motives

One of most important arguments against the derivatives is that they promote speculative activities in the market. It is witnessed from the financial markets throughout the world that the trading volume in derivatives have increased in multiples of the value of the underlying assets and hardly one to two percent derivatives are settled by the actual delivery of the underlying assets. As such speculation has become the primary purpose of the birth, existence and growth of derivatives. Sometimes, these speculative buying and selling by professionals and amateurs adversely affect the genuine producers and distributors. Some financial experts and economists believe that speculation brings about a better allocation of supplies overtime, reduces the fluctuations in prices, make adjustment between demand and supply, removes periodic gluts and shortages, and thus, brings efficiency tothe market. However, in actual practice, above such agreements are not visible. Most of the speculative activities are 'professional speculation' or 'movement trading' which lead to destabilization in the market. Sudden and sharp variations in prices have been caused due to common, frequent and widespread consequence of speculation.

Increase in Risk

The derivatives are supposed to be efficient tool of risk management in the market. In fact this is also one-sided argument. It has been observed that the derivatives market—especially OTC markets, as particularly customized, privately managed and negotiated, and thus, they are highly risky. Empirical studies in this respect have shown that derivatives used by the banks have not resulted in the reduction in risk, and rather these have raised new types of risk. They are powerful leveraged mechanism used to create risk. It is further argued that if derivatives are risk management tool, then why 'government securities', a riskless security, are used for trading interest rate futures which is one of the most popular financial derivatives in the world.

Instability of the Financial System

It is argued that derivatives have increased risk not only for their users but also for the whole financial system. The fears of micro and macro financial crisis have caused to the unchecked growth of derivatives which have turned many market players into big losers. The malpractices, desperate behaviour and fraud by the users of derivatives have threatened the stability of the financial markets and the financial system.

Price Instability

Some experts argue in favour of the derivatives that their major contribution is toward price stability and price discovery in the market whereas some others have doubt about this. Rather they argue that derivatives have caused wild fluctuations in asset prices, and moreover, they have widened the range of such fluctuations in the prices. The derivatives may be helpful in price stabilization only if there exist a properly organized, competitive and well-regulated market. Further, the traders behave and function in professional manner and follow standard code of conduct. Unfortunately, all these are not so frequently practiced in the market, and hence, the derivatives sometimes cause to price instability rather than stability.

Displacement Effect

There is another doubt about the growth of the derivatives that they will reduce the volume of the business in the primary or new issue market specifically for the new and small corporate units. It is apprehension that most of investors will divert to the derivatives markets, raising fresh capital by such units will be difficult, and hence, this will create displacement effect in the financial market. However, it is not so strong argument because there is no such rigid segmentation of investors, and investors behave rationally in the market.

Increased Regulatory Burden

As pointed earlier that the derivatives create instability in the financial system as a result, there will be more burden on the government or regulatory authorities to control the activities of the traders in financial derivatives. As we see various financial crises and scams in the market from time to time, most of time and energy of the regulatory authorities just spent on to find out new regulatory, supervisory and monitoring tools so that the derivatives do not lead to the fall of the financial system.²⁰The regulatory frame work in India is based on L.C. Gupta Committee report and J.R. Varma Committee report. It is mostly consistent with the international organization of securities commission (IUSCO). The L.C. Gupta Committee report provides a perspective on division of regulatory responsibility between the exchange and SEBI. It recommends that SEBI's role should be restricted to approving rules, bye laws and regulations of a derivatives exchange as also to approving the proposed derivatives contracts before commencement of their trading. It emphasizes the supervisory and advisory role of SEBI. It also suggests establishment of a separate clearing corporation.

3.9 COMMONLY TRADED EXCHANGE DERIVATIVES

Currency future (FX future): futures contract to exchange one currency for another at a specified date in the future at a price (exchange rate) that is fixed on the purchase date. On NSE the price of a future contract is in terms of INR per unit of other currency e.g. US Dollars. Currency future contracts allow investors to hedge against foreign exchange risk. Currency Derivatives are available on four currency pairs viz. US Dollars (USD), Euro (EUR), Great Britain Pound (GBP) and Japanese Yen (JPY). Currency options are currently available on US Dollars. The trading member is subject to a balance sheet net worth requirement of Rs. 1 crore while the clearing member is subject to a balance sheet net worth requirement of Rs. 10 crores. The clearing member is subject to a liquid net worth requirement of Rs. 50 lakhs.²¹

Stock Futures: These are financial contracts where the underlying asset is an individual stock. Stock Future contract is an agreement to buy or sell a specified quantity of underlying equity share for a future date at a price agreed upon between the buyer and seller. The contracts have standardized specifications like market lot, expiry day, and unit of price quotation, tick size and method of settlement.

Stock Options: A stock option is a contract that gives the buyer or the holder the right to buy or sell a specified number of shares at a specified price at a specified date in future. This is the most common type of options traded in organised exchanges. **Equity derivative** is a class of Derivatives whose value is at least partly derived from one or more underlying equity securities. Options and futures are by far the most common equity derivatives. This section provides you with an insight into the daily activities of the equity derivatives market segment on NSE. 2 major products under Equity derivatives are Futures and Options, which are available on Indices and Stocks²²

Table 3.1 : Instrument wise Volume and Turnover							
	Т						
Product	No. of contracts	Turnover (cr.)*	Premium Turnover (cr.)				
Index Futures	3,00,358	21,814.17	-				
Vol Futures	0	0.00	-				
Stock Futures	6,42,826	46,001.48	-				
Index Options	1,01,75,835	7,88,948.66	1,830.04				
Stock Options	4,07,949	30,235.84	490.74				
F&O Total	1,15,26,968	8,87,000.14	2,320.79				

Source: NSE

Index Options: It is an option contract based on stock market indices like S&P Nifty CNX 50, CNX IT and Bank Nifty on the NSE and SENSEX on the BSE. Index options give an investor the right to buy or sell a value of an index which represents group of stocks. They does not involve actual delivery of the index, instead are cash settled based ion the expectations about rise or fall in the index traders buy put or call index options.

Currency Options: A Currency Options offers the right to buy or sell a specified number of foreign currencies for a specified amount of domestic currency. They are used for hedging foreign exchange risk.

Index Futures: Any stock market index represents a group of shares. It is calculated by taking into consideration the prices of representative group of stocks traded in the particular stock market. An Index future, being a futures contract on a stock market index, notionally gives the right and obligation to buy or sell the portfolio of stocks represented by the index but in the index future trading, there is no delivery of the stocks, there is only cash settlement.Some of the stock indices on which futures are traded include S&P 100, S&P 500 in USA, NIKKEI 225 in Japan, FTSE 100 in UK, DAX in Germany, CAC 40 in France and Nifty in India.

Interest Rate Futures: An Interest Rate Futures is future contract with an interest bearing instrument as the underlying asset. An Interest Rate Future contract is "an agreement to buy or sell an interest bearing debt instrument at a specified future date at a price that is fixed today". In India the underlying security for interest rate futures traded in NSE and BSE are either Government bonds or T-Bills. Examples include, Treasury Bill futures and Bond Futures.²³

3.10 DERIVATIVES MARKET IN INDIA

In India, there are two major markets namely National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) along with other Exchanges of India are the market for derivatives.

3.10.1 DERIVATIVE PRODUCTS TRADED AT BSE.

The BSE started derivatives trading on June 9, 2000 when it launched "Equity derivatives (Index futures-SENSEX) first time. It was followed by launching various products which are shown in table no.2. They are index options, stock options, single stock futures, weekly options, and stocks for: Satyam, SBI, Reliance Industries, Tata Steel, Chhota (Mini) SENSEX, Currency futures, US dollar-rupee future and BRICSMART indices derivatives.

3.10.2 DERIVATIVE PRODUCTS TRADED AT NSE

The NSE started derivatives trading on June 12, 2000 when it launched "Index Futures S & P CNX Nifty" first time. It was followed by launching various derivative products. They are index options, stock options, stock future, interest rate, future CNX IT future and options, Bank Nifty futures and options, CNX Nifty Junior futures and options, CNX100 futures and options, Nifty Mid Cap-50 future and options, Mini index futures and options, Long term options. Currency futures on USD-rupee, Defty future and options, interest rate futures, SKP CNX Nifty futures on CME, European style stock options, currency options on USD INR, 91 days GOI T.B. futures, and derivative global indices and infrastructures indices. Subsequently, Various other products were introduced and presently futures and options contracts on the following products are available at NSE:

- a. Indices: Nifty 50, CNX IT Index, Bank Nifty Index, CNX Nifty Junior, CNX 100, Nifty Midcap 50, Mini Nifty and Long dated Options contracts on Nifty 50.
- b. Single stocks 228

3.11 MEMBERSHIP CATEGORIES IN THE DERIVATIVES MARKET.

The various types of membership in the derivatives market are as follows:

1. **Professional Clearing Member (PCM)**

PCM means a Clearing Member, who is permitted to clear and settle trades on his own account, on account of his clients and/or on account of trading members and their clients.

2. Custodian Clearing Member (CCM)

CCM means Custodian registered as Clearing Member, who may clear and settle trades on his own account, on account of his clients and/or on account of trading members and their clients.

3. Trading Cum Clearing Member (TCM)

A TCM means a Trading Member who is also a Clearing Member and can clear and settle trades on his own account, on account of his clients and on account of associated Trading Members and their clients.

4. Self-Clearing Member (SCM)

A SCM means a Trading Member who is also Clearing Member and can clear and settle trades on his own account and on account of his clients.

5. Trading Member (TM)

A TM is a member of the Exchange who has only trading rights and whose trades are cleared and settled by the Clearing Member with whom he is associated.

6. Limited Trading Member (LTM)

A LTM is a member, who is not the members of the Cash Segment of the Exchange, and would like to be a Trading Member in the Derivatives Segment at BSE. An LTM has only the trading rights and his trades are cleared and settled by the Clearing Member with whom he is associated. ²⁴

3.12 DEVELOPMENT AND REGULATION OF DERIVATIVE MARKETS BY SECURITIES AND EXCHANGE BOARD OF INDIA (SEBI)

The SEBI Board in its meeting on June 24, 2002 considered some important issues relating to the derivative markets including:

- □ Physical settlement of stock options and stock futures contracts.
- Review of the eligibility criteria of stocks on which derivative products are permitted.
- □ Use of sub-brokers in the derivative markets.
- □ Norms for use of derivatives by mutual funds

It has been guided by the following objectives:

(a) Investor Protection: Attention needs to be given to the following four aspects:

- (i) Fairness and Transparency: The trading rules should ensure that trading is conducted in a fair and transparent manner. Experience in other countries shows that in many cases, derivatives brokers/dealers failed to disclose potential risk to the clients. In this context, sales practices adopted by dealers for derivatives would require specific regulation. In some of the most widely reported mishaps in the derivatives market elsewhere, the underlying reason was inadequate internal control system at the user-firm itself so that overall exposure was not controlled and the use of derivatives was for speculation rather than for risk hedging. These experiences provide useful lessons for us for designing regulations.
- (ii) Safeguard for clients' moneys: Moneys and securities deposited by clients with the trading members should not only be kept in a separate clients' account but should also not be attachable for meeting the broker's own debts. It should be ensured that trading by dealers on own account is totally segregated from that for clients.
- (iii) Competent and honest service: The eligibility criteria for trading members should be designed to encourage competent and qualified personnel so that investors/clients are served well. This makes it necessary to prescribe qualification for derivatives brokers/dealers and the sales persons appointed by them in terms of a knowledge base.

- (a) Market integrity: The trading system should ensure that the market's integrity is safeguarded by minimising the possibility of defaults. This requires framing appropriate rules about capital adequacy, margins, clearing corporation, etc.
- (b) Quality of markets: The concept of "Quality of Markets" goes well beyond market integrity and aims at enhancing important market qualities, such as cost-efficiency, price-continuity, and price-discovery. This is a much broader objective than market integrity.
- (c) Innovation: While curbing any undesirable tendencies, the regulatory framework should not stifle innovation which is the source of all economic progress, more so because financial derivatives represent a new rapidly developing area, aided by advancements in information technology²⁵

3.12.1 SEBI GUIDELINES FOR DERIVATIVES MARKET

SEBI has laid the eligibility conditions for Derivative Exchange/Segment and its Clearing Corporation/House to ensure that Derivative Exchange/Segment and Clearing Corporation/House provide a transparent trading environment, safety and integrity and provide facilities for redressal of investor grievances. Some of the important eligibility conditions are:

- 1) Derivative trading to take place through an on-line screen based Trading System.
- The Derivatives Exchange/Segment shall have on-line surveillance capability to monitor positions, prices, and volumes on a real time basis so as to deter market manipulation.

- 3) The Derivatives Exchange/ Segment should have arrangements for dissemination of information about trades, quantities and quotes on a real time basis through at least two information vending networks, which are easily accessible to investors across the country.
- 4) The Derivatives Exchange/Segment should have arbitration and investor grievances redressal mechanism operative from all the four areas/regions of the country.
- 5) The Derivatives Exchange/Segment should have satisfactory system of monitoring investor complaints and preventing irregularities in trading.
- The Derivative Segment of the Exchange would have a separate Investor Protection Fund.
- 7) The Clearing Corporation/House shall perform full novation, i.e., the Clearing Corporation/House shall interpose itself between both legs of every trade, becoming the legal counterparty to both or alternatively should provide an unconditional guarantee for settlement of all trades.
- 8) The Clearing Corporation/House shall have the capacity to monitor the overall position of Members across both derivatives market and the underlying securities market for those Members who are participating in both.
- 9) The level of initial margin on Index Futures Contracts shall be related to the risk of loss on the position. The concept of value-at-risk shall be used in calculating required level of initial margins. The initial margins should be large enough to cover the one-day loss that can be encountered on the position on 99 per cent of the days.
- The Clearing Corporation/House shall establish facilities for electronic funds transfer (EFT) for swift movement of margin payments.

- In the event of a Member defaulting in meeting its liabilities, the Clearing Corporation/House shall transfer client positions and assets to another solvent Member or close-out all open positions.
- 12) The Clearing Corporation/House should have capabilities to segregate initial margins deposited by Clearing Members for trades on their own account and on account of his client. The Clearing Corporation/House shall hold the clients' margin money in trust for the client purposes only and should not allow its diversion for any other purpose.
- The Clearing Corporation/House shall have a separate Trade Guarantee Fund for the trades executed on Derivative Exchange/Segment.

SEBI has specified measures to enhance protection of the rights of investors in the Derivative Market. These measures are as follows:

- (i) Investor's money has to be kept separate at all levels and is permitted to be used only against the liability of the Investor and is not available to the trading member or clearing member or even any other investor.
- (ii) The Trading Member is required to provide every investor with a risk disclosure document which will disclose the risks associated with the derivatives trading so that investors can take a conscious decision to trade in derivatives.
- (iii) Investor would get the contract note duly time stamped for receipt of the order and execution of the order. The order will be executed with the identity of the client and without client ID order will not be accepted by the system. The investor could also demand the trade confirmation slip with his ID in support of the contract note. This will protect him from the risk of price favour, if any, extended by the Member.

- (iv) In the derivative markets all money paid by the Investor towards margins on all open positions is kept in trust with the Clearing House /Clearing Corporation and in the event of default of the Trading or Clearing Member the amounts paid by the client towards margins are segregated and not utilised towards the default of the member. However, in the event of a default of a member, losses suffered by the Investor, if any, on settled/closed
- (v) out position are compensated from the Investor Protection Fund, as per the rules,bye-laws and regulations of the derivative segment of the exchanges.

3.13 TRENDS IN DERIVATIVES SEGMENT

EquityDerivatives:India is one of the vibrant markets for exchange trade dequity derivatives in the world. The trading volumes in the equity derivative market surpassed that of the cash segment turnover by1 1.2 times in December 2015. The monthly total turn over in equity derivative marketat NSE increased by 6.5 percent to Rs.46,31,172 crore in December 2015 from Rs.43,47,054 crore in November 2015 (Figure3.04). The index options segment has been the clear leader in the product-wise turn over of the futuresandoptions segment in the NSE. In December 2015, the turnover in the index options category was 73.8 percent of the total turnover in the F&O segment of the NSE. During December 2015, index futures, stock futures, index options and stock options recorded increases in turnover over the previous month. The open interest in value terms in equity derivative segment of NSE decreased by 14.4 percent to Rs.1,54,964 crore as on December 31, 2015 from Rs.1,81,087 crore as on November 30, 2015.

		NSE			BSE	[
Particular			Percentage			Percentage
	Dec-15	Nov-15	ChangeOver	Dec-15	Nov-15	Change Over
1	2	3	4	5	6	7
		A. Turno	ver (`Crore)			
(i) Index	3,00,357	2,89,439	3.8	381	405	-6.1
(ii) OptionsonIndex						
Put	15,39,487	14,47,834	6.3	23,423	22,410	4.5
Call	18,80,247	17,49,524	7.5	90,213	79,201	13.9
(iii)StockFutures	6,30,521	5,97,633	5.5	27	16	67.7
(iv) OptionsonStock						
Put	90,667	86,405	4.9	3,280	1,650	98.7
Call	1,89,893	1,76,221	7.8	2,965	1,843	60.9
Total	46,31,172	43,47,054	6.5	1,20,288	1,05,526	14.0
		B. No.of	fContracts			
(i) IndexFutures	53,97,473	51,39,901	5.0	7,353	7,790	-5.6
(ii) OptionsonIndex						
Put	2,70,61,557	2,52,28,432	7.3	4,65,551	4,40,825	5.6
Call	3,17,97,538	2,92,69,261	8.6	17,14,077	14,88,080	15.2
(iii)StockFutures	1,24,28,874	1,18,76,912	4.6	551	332	66.0
(iv) OptionsonStock						
Put	18,23,472	17,40,663	4.8	64,064	30,652	109.0
Call	33,15,699	33,15,699	0.0	57,044	37,518	52.0
Total	8,18,24,613	7,65,70,868	6.9	23,08,640	20,05,197	15.1
	C.Op	oenInterestin	termsofValue(c	erore)		
(i) IndexFutures	18,564	19,452	-4.6	224	218	2.7
(ii) OptionsonIndex Put	30,876	43,654	-29.3	2	19	-88.2

Table 3.2 : Trends in Equity Derivatives Market.

Call	39,419	47,431	-16.9	2	19	-89.4
(iii)StockFutures	60.744	61.986	-2.0	1	2	-32.0
(iv) OptionsonStock		02,000		ſ		
Put	1,932	3,100	-37.7	6	9	-36.0
Call	3,429	5,464	-37.2	0	4	-97.3
Total	1,54,964	1,81,087	-14.4	235	272	-13.4
D.OpenInterestinter	msofNoofCont	racts				
(i) IndexFutures	3,20,341	3,35,105	-4.4	4,289	4,171	2.8
(ii) OptionsonIndex						
Put	5,23,583	7,41,448	-29.4	43	368	-88.3
Call	6,66,610	8,03,973	-17.1	38	364	-89.6
(iii)StockFutures	12,04,470	12,30,246	-2.1	29	43	-32.6
(iv) OptionsonStock						
Put	38,932	61,430	-36.6	81	204	-60.3
Call	67,861	1,07,460	-36.8	2	79	-97.5
Totol	28 21 707	22 70 662	14.0	4 492	5 220	14.2

Source :SEBI Bulletin



Source :SEBI Bulletin

The monthly total turnover in equity derivative segment of BSE increased by 13.9 percent to `1,20,288 crore in December2015 from `1,05,526 crore in November 2015. While index options comprised 94.5 percent of BSE's equity derivative turnover, stock options constituted 5.2 percent. During December 2015, index futures, stock futures, index options and stock futures recorded increases in turnover over the previous month. The open interest in value terms inequity derivative segment of BSE decreased by 13.4 percent to `235 crore as on December 31, 2015 from 272 crore as on November 30, 2015. In December 2015, NSE had 97.5 percent share in total equity derivatives turnover in India while BSE's share was 2.5 percent. In terms of open interest (in value terms), NSE had 99.85 percent share while BSE had 0.15 percent share.

VIX Futures: NSE introduced futures contracts on India VIX in Futures & Options segment of NSE w.e.f. February 26, 2014. India VIX isI ndia's first volatility Index which is a key measure of market expectations of nearer. The contract symbol is INDIA VIX and 3 weekly futures contract were made available for trading. The contracts shall expire on every Tuesday. The tick size is 0.25 and lot size is 550. During December 2015, no VIX futures contracts were traded at F&O segment of NSE contracts shall expire on every Tuesday. The tick size is 0.25 and lot size is

550. During December 2015, no VIX futures contracts were traded at F&O segment of NSE.

Currency Derivatives at NSE, MSEI and BSE: During D ecemb er 2015, the monthly turn over of currency derivatives at NSE increased by 5.8 percent to Rs.3,55,065 crore from Rs.3,35,711 crore in Novembe 2015. The turnover of currency derivatives at BSE increased by 7.7 percent to `1,93,962 crore in December 2015 from` 1,80,138 crore in November 2015. At MSEI, the monthly turnover of currency derivatives decreased by 17.9 percentto`15,817crore in December 2015 from` 19,275crore in November 2015.

Interest Rate Derivatives at NSE, BSE and MSEI: During December 2015, the monthly turnover of interest rate futures at NSE increased by 20.6 percent to `47,291 crore from `39,215 crore in November 2015. The turnover of currency derivatives at BSE increased by 31.9 percent to `17,793 crore in December 2015from `13,492 crore in November 2015.At MSEI, the monthly turnover of currency derivatives increased by 3.4 percent to `1,450 crore in December2015 from1,403 crore in November 2015²⁶

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CHAPTER 4:

PERCEPTION OF INVESTORS TOWARDS

FINANCIAL DERIVATIVES

4.1 INTRODUCTION

The relationship between risk and return from derivative trading calls for consideration of investor's satisfaction level in relation to different variables. The present study was conducted in Ernakulam district of the Kerala state. The level of satisfaction and attitude of the investors were analysed with the help of different statistical tools and methods. The method used in the study is exploratory as it utilizes scoring of the variables. The collected data contains both the qualitative and quantitative data. Accordingly, the study uses both qualitative and quantitative techniques for the analysis of data. The statistical analysis comprised of two stages.

The first stage examined the descriptive statistics of the measurement items and assessed the reliability and validity of the measure applied in this study. The second stage tested the proposed research model and this involves assessing the contributions and significance of the manifest variables path coefficients. The data were analyzed via SPSS 20.0 for Windows. Descriptive statistics were used to describe and summarize the properties of the mass of data collected from the respondents. Parametric statistics like independent sample Z test and the one-way analysis of variance were used for comparison of the factors considered between different level of the demographic variables. A level of 0.05 was established a priori for determining statistical significance.

The main objective of the study is to evaluate various problems faced by the F&O trading to an investor in Ernakulam District and their satisfaction level with F&O trading. In the present study, we converted opinion into a score for some variables. So, the answer may be subjected to random
variation and is influenced by psychological factors. Hence it is better to use psychometric scale development approaches to evaluate the relationship. The best model for testing the convergent validity and for modeling the best method is Structural Equation Model or confirmatory factor analysis. For the analysis initially an input model was developed by using AMOS-18 graphics.

An assessment of the statistical reliability is necessary before any further validation analysis. Reliability refers to degree of dependability or consistency of a scale. Unreliable scale will lack consistency of measuring the same item to the extent. Now a day, particularly for field survey, internal Consistency is estimated by using Cronbach's alpha. An alpha value of 0.70 or above is criterion for demonstrating strong internal consistency, alpha value of 0.60 or above is significant.

Accordingly, before conducting the SEM first we evaluate the reliability of the questionnaire using Cronbach's alpha. The following table gives the initial and final Cronbach's alpha for each of the construct considered. Result shows that all of the constructs has reliability greater than 0.6 so we proceed for further analysis.

Variables	Cronbach's Alpha	No. of Items
Level of satisfaction	0.858	10
Problems experienced in derivatives trading	0.653	9
Factors which can modulate derivative market	0.914	6
Reasons behind comparatively less derivative trading	0.671	5

Table 4.1: Cronbach's Alpha Reliability Test

4.2 **PROFILE OF THE RESPONDENTS**

The survey was conducted among the 175 investors in Ernakulam District. The investors were categorized on the basis of age, sex, education, occupation and monthly income. The influences of demographic control variables, that is, gender, age, education, income levels, and occupation towards the various accepts of financial literacy. The analyses were conducted using independent sample Z test and one way ANOVA.

4.2.1 GENDER WISE CLASSIFICATION OF INVESTORS

Table 4.2 states that gender wise classification of the respondents in Ernakulam district. 84 percent of the respondent constitute male respondents and 16 per cent are female respondents.

Gender	Responses	Percent
Male	147	84.0
Female	28	16.0
Total	175	100

Table 4.2: Gender wise classification of Respondents

Source: Primary data

Sex wise classification of investors are presented in the Figure 4.1. Of the total sample (175 investors) of investors in Ernakulam district, 147 respondents are male investors and rest of the respondents (28 investors) are female respondents



An independent sample Z test are often used to compare the satisfaction level of

variables for two different groups of participants, that is, male and female investors.

Hence a Z test was conducted, and the results were shown in the Table 4.3

Variable	Gender	N	Mean	Std. Deviation	z.	p value
Level of	Male	147	28.40	4.43	1.621	0.107
satisfaction	Female	28	26.86	5.54		

Table 4.3:Means, Standard deviation and z value for Gender.

Source: Primary data

The result shows that no significant difference in the satisfaction level exist between the male and female investors as the p value in these cases is greater than 0.05. So we accept the H0a hypothesis.

4.2.2 AGE WISE CLASSIFICATION OF INVESTORS

Age wise classification of respondents are presented in the Table 4.4. The table reveals that majority (41.7 percent) of the respondents are included in the 31–40 category. 30.3 percent of the respondents are 20-30 years' category. 16 percent of the respondents are 41-50 category and only 12 percent of the respondents were above 50 age category.

Category	Respondents	Percent
20-30 years	53	30.3
31-40 years	73	41.7
41-50 years	28	16.0
Above 50	21	12.0
Total	175	100.0

 Table 4.4: Age wise classification of Respondents.

Source: Primary data.

Figure 4.2 shows that investors are categorized into different age groups. Majority of the investors belonged to 31-40 age category and the next majority comes to 20-30 category.



Source: Primary data

Figure 4.2: Age wise classification of investors

H0b: The level of satisfaction does not differ with age.

H1b: The level of satisfaction differs with age.

A one sample analysis of variance (ANOVA) is used to test hypotheses about means when there are three or more groups of one independent variable. The result of the analysis is exhibited in Table 4.5

Variable	Age	N	Mean	Std. Deviation	F	p value
	20-30 years	53	24.92	5.59		
Level of	30-40 years	73	28.30	3.62	23.220	< 0.001
satisfaction	40-50 years	28	31.14	1.84		
	50&above	21	31.81	0.40		

Table 4.5: Means, Standard deviation and F value for Age

The results of the ANOVA reveals that assumed significance value(p) is less than 0.05. The results proved that the level of satisfaction differ with age. We reject the hypothesis H_{0b}.Since the ANOVA test indicate that the significant difference exists among the different Age group for the Satisfaction.

The present study was also conducted a post hoc test (multiple comparison test) for identify which among the age group differs significantly. This was presented in the Table 4.6.

(I) Age		Mean Difference (I-J)	Std. Error	Sig.
	30-40 years	-3.37684*	.71225	.000
20-30 years	40-50 years	-6.21833*	.92209	.000
	50&above	-6.88500*	1.01769	.000
	20-30 years	3.37684*	.71225	.000
30-40 years	40-50 years	-2.84149*	.87734	.001
	50&above	-3.50815*	.97733	.000
	20-30 years	6.21833*	.92209	.000
40-50 years	30-40 years	2.84149*	.87734	.001
	50&above	66667	1.13935	.559
	20-30 years	6.88500*	1.01769	.000
50&above	30-40 years	3.50815*	.97733	.000
	40-50 years	.66667	1.13935	.559

Table 4.6: Multiple Comparison Of Age Groups

The result of the analysis indicates that differences exist between all the groups except 40-50 years and above 50 years.

4.2.3 EDUCATION WISE CLASSIFICATION OF INVESTORS

The level of education of the respondents are shown in the Table 4.7. It is clearly evident from the table that majority of the respondents (60 percent) are professionals and remaining of them (40 percent) are qualified up to a graduate level.

Table 4.7. Education	Table 4.7. Education wise classification of the Respondents						
Education	Respondents	Percent					
Degree	70	40.0					
Professional	105	60.0					
Total	175	100.0					

Table 4.7: Education wise classification of the Respondents

Source: Primary data

Figure 4.3 presents the education wise classification of the investors in Ernakulam district. The study reveals that majority of the investors (60 percent) are professionally qualified while others (40 percent) have completed their graduate degree.



H0b: There is no significant difference in the satisfaction level of investors in relation to education.

H1b: There is significant difference in the satisfaction level of investors in relation to education.

One way ANOVAis used to test hypotheses about means when there are three or more groups of one independent variable. The result of the analysis is exhibited in Table 4.8.

Variable	Education	Ν	Mean	Std. Deviation	F	p value
Level of	Degree	70	30.43	2.03	33.190	< 0.001
satisfaction	Professional	105	26.64	5.25		

 Table 4.8: Means, Standard deviation and F value for Education

The results of the ANOVA shows that assumed significance value, (p) is less than 0.05. The results proved that the level of satisfaction differ with education of the respondent. We reject the hypothesis H_{0b} .Since the ANOVA test indicate that there is significant difference in level of satisfaction in respect of education. Therefore, we accept H1b hypothesis.

4.2.4 OCCUPATION WISE CLASSIFICATION OF INVESTORS

Occupation wise classificationreveals that 60 percent of the respondents are private sector employees, 16.6 percent are professionals, 9.1 percent are businessmen and rest of the respondents are government servants, retired employees and others engaged in daily wage activities and unemployed persons. This was exhibited in the Table 4.9.

Occupation	Respondents	Percent
Government/Semi-Government service	8	4.6
Private sector	105	60.0
Business	16	9.1
Professional Practice	29	16.6
Professional	4	2.3
Others	13	7.4
Total	175	100.0

Table 4.9: Occupation wise classification of the respondents

Source: Primary data

Figure 4.4 showed the occupation wise classification of investors. Majority of the respondents are private sector employees (60 percent), followed by professionals (16.6 percent), businessmen (9.1 percent) and others (including daily wage earners and unemployed persons) which constitute 7.4 percent.



H0b: The level of satisfaction does not differ with occupation.

H1b: The level of satisfaction differs with occupation.

A one sample analysis of variance(ANOVA) is used to test hypotheses that there is significant difference in the satisfaction level of investors in derivative trading. The result of analysis is exhibited in the Table 4.10.

Variable	Occupation	N	Mean	Std. Deviation	F	p value
	Government/Semi- Government service	8	31.50	0.53		
Level of	Private sector	105	27.02	4.80	12.239	< 0.001
satisfaction	Business	16	24.25	4.58		
	Professional Practice	29	31.24	1.18		
	Professional	4	32.00	0.00		
	Others	13	32.00	0.00		

Table 4.10: Means, Standard deviation and z value for Occupation

The results of ANOVA proved that significance level, P< 0.05. The results of analysis reveal that the level of satisfaction differ with occupation of the investors. Hence we reject the hypothesis H_{0b} .Since the ANOVA test indicate that there is significant difference in the satisfaction level of investors. Therefore, we accept H1b hypothesis, the level of satisfaction differs with occupation.

The present study also conducted a post hoc test for identifying the investors level of satisfaction in relation to occupation revealed that their satisfaction level in derivative trading is significantly different. This was presented in the Table 4.11.

(I) Occupation		Mean Difference (I-J)	Std. Error	Sig.
	Private sector	4.48095*	1.480	0.003
Government/Semi-	Business	7.25000^{*}	1.747	0.000
Government	Professional Practice	0.259	1.612	0.873
service	Professional	-0.500	2.471	0.840
	Others	-0.500	1.813	0.783
	Government/Semi-Government service	-4.48095*	1.480	0.003
	Business	2.76905*	1.083	0.011
Private sector	Professional Practice	-4.22233*	0.847	0.000
	Professional	-4.98095*	2.056	0.016
	Others	-4.98095*	1.187	0.000
	Government/Semi-Government service	-7.25000*	1.747	0.000
	Private sector	-2.76905*	1.083	0.011
Business	Professional Practice	-6.99138 [*]	1.257	0.000
	Professional	-7.75000*	2.256	0.001
	Others	-7.75000*	1.507	0.000
	Government/Semi-Government service	-0.259	1.612	0.873
Professional	Private sector	4.22233*	0.847	0.000
Practice	Business	6.99138 [*]	1.257	0.000
	Professional	-0.759	2.152	0.725
	Others	-0.759	1.347	0.574
	Government/Semi-Government service	0.500	2.471	0.840
	Private sector	4.98095*	2.056	0.016
Professional	Business	7.75000^{*}	2.256	0.001
	Professional Practice	0.759	2.152	0.725
	Others	0.000	2.307	1.000
	Government/Semi-Government service	0.500	1.813	0.783
	Private sector	4.98095*	1.187	0.000
Others	Business	7.75000^{*}	1.507	0.000
	Professional Practice	0.759	1.347	0.574
	Professional	0.000	2.307	1.000

The result of analysis indicates that here is no significant difference in the opinion of investors. These investors are engaged in government service, semi-government service, professional service and other services.

4.2.5 INCOME WISE CLASSIFICATION OF INVESTORS

The income wise classification of investors are presented in the table 4.12. The results shows that majority of the respondents (37.7 percent) earn Rs. 41,000 to Rs. 50,000 per month. Around 30.3 percent of the respondents earn more than Rs. 50,000 per month. 20.6 percent of the respondent earn Rs. 31,000 to Rs. 40,000 per month.

Monthly income	Respondents	Percent
Rs. 20000 to Rs.30000	20	11.4
Rs. 31,000 to Rs. 40,000	36	20.6
Rs.41, 000 to Rs 50,000	66	37.7
Rs 50,000 and above	53	30.3
Total	175	100.0

Table 4.12: Income wise classification

Source: Primary data

Figure 4.5 illustrate the monthly income of the investors in Ernakulam district. Out of the 175 respondents, 37.7 percent earn a monthly income of Rs. 41,000 to Rs. 50,000, followed by 30.3 percent of the respondents' earnings was above Rs. 50,000. 20.6 percent of respondent earns monthly income of Rs. 31,000 to Rs. 40,000.



Source: Primary data

Figure 4.5:Income wise classification of Investors.

H0b: The level of satisfaction does not differ with income.

H1b: The level of satisfaction does differ with income.

A one sample analysis of variance (ANOVA) is used to test the hypotheses that there is no significant difference in the satisfaction level of investors. The result of the analysis is shown in the Table 4.13.

Variable	Income	N	Mean	Std. Deviation	F	p value
	Rs 20000to Rs 30000	20	27.20	4.37		
Level of	Rs 30,000 to 40,000	36	24.67	5.30	21.016	< 0.001
Satisfaction	Rs.40, 000 to Rs 50,000	66	27.77	4.50		
	Rs 50,000 and above	53	31.36	1.23		
Source: Primary data						

Table	4.13:	Means.	Standard	deviation	and F	value for	Income
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The results of the ANOVA proved that assumed significance value less than 0.05. The results revealthat the level of satisfaction differ with income of the respondent. We reject the Null hypothesis and accept the Alternative hypothesis. The test results indicate that there is significant difference in the satisfaction level of investors in Futures and Options trading activity.

A post hoc test was also conducted to identify whether he income groups differs significantly. This was presented in the Table 4.14.

(I) Income		Mean Difference (I-J)	Std. Error	Sig.
	Rs 30,000 to 40,000	2.53333*	1.116	0.024
Rs 20000to Rs 30000	Rs.40, 000 to Rs 50,000	-0.573	1.022	0.576
	Rs 50,000 and above	-4.15849*	1.050	0.000
	Rs 20000to Rs 30000	-2.53333*	1.116	0.024
Rs 30,000 to 40,000	Rs.40, 000 to Rs 50,000	-3.10606*	0.829	0.000
	Rs 50,000 and above	-6.69182*	0.864	0.000
Rs.40, 000 to Rs	Rs 20000to Rs 30000	0.573	1.022	0.576
50,000	Rs 30,000 to 40,000	3.10606*	0.829	0.000
	Rs 50,000 and above	-3.58576*	0.738	0.000
	Rs 20000to Rs 30000	4.15849*	1.050	0.000
Rs 50,000 and above	Rs 30,000 to 40,000	6.69182*	0.864	0.000
	Rs.40, 000 to Rs 50,000	3.58576*	0.738	0.000

Table 4.14: Multiple Comparisons

The result of the analysis indicates there is significant variations between all the income groups except Rs. 20000 to Rs. 30000 income category and Rs.40, 000 to Rs 50,000 category.

4.3 DERIVATIVE TRADING – AN INSIGHT

Derivatives trading is dominating the commodity and financial market all over the world. Trading in derivative instruments require familiarization with basics, its purpose, trading practices,type of instrument, level of risk involved, experience and frequency in trading, amount of risk covered, and sources influenced in trade.

4.3.1 EXPERIENCE WISE CLASSIFICATION OF RESPONDENTS

An insight into the derivative trading showed that the experience of respondents in the stock market has a significant role in derivative trading. Majority of the respondents (51.9 percent) has an experience of 5 years and below, followed by respondents (38.9 percent) with 6 to 10 years. Hardly 2.9 percent of respondents has an experience ranging from 15 years and above.

Experience in stock market	Frequency	Percent
5years and below	90	51.4
6 to 10 years	68	38.9
11 to 15 years	12	6.9
15 years and above	5	2.9
Total	175	100

 Table 4.15: Experience wise classification of Respondents

Source : Primary Data

Figure 4.6 shows that experience of investors in the stock market. Out of the 175 respondents 51.4 percent has an experience of 5 years and below. Investors (38.9 percent) had an experience ranging from 6 to 10 years. The remaining respondents (6.9 and 2.9 percent) had an experience of more than 10 years.



Source: Primary data

Figure 4.6: Experience wise classification of investors.

4.3.2 EXPERIENCE IN DERIVATIVE TRADING

In Table 4.16 the experience wise classification of the investors engaged in derivative trading shows that most of the investors(34.3 percent) trading in derivatives has an experience of 3 to 4 years, followed by investors (30.9 percent) with an experience of 1 year or less. Out of the 175 investors, 29.7 percent of the investors had an experience ranging from 1 to 2 years.

Years of experience in derivatives trading	Frequency	Percent
Less than 1 year	54	30.9
1 to 2 years	52	29.7
3 to 4 years	60	34.3
5 years and above	9	5.1
Total	175	100
Source: Primary data	• •	

Table 4.16: Experience	e in Derivative trading
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Figure 4.7 shows that experience in derivative trading plays a dominant role in investor satisfaction. Among the 175 investors engaged in Derivative trading, 34.7 percent of the investorshad year exposure of 3 to 4 years in the trading, 30.9 percent with less than 1 year experience, 29.7 percent with 1 to 2 years of experience and a minority (5.1 year) with 5 or more than 5 years of experience.



Source: Primary data

Figure 4.7: Experience in Derivative trading.

4.3.3 FREQUENCY IN FUTURE AND OPTIONS DERIVATIVE TRADING

The frequency in derivative trading in among investors in Ernakulam district is shown in the Table 4.17. Majority of the investors in Ernakulam (39.4 percent) trade in derivatives frequently. Investors doing occasional trading constitute 34.9 percent. Only 14.3 percent of the investors always trade in derivatives.

How frequently do you trade in derivatives	Frequency	Percent
Rarely	20	11.4
Occasionally	61	34.9
Frequently	69	39.4
Always	25	14.3
Total	175	100

Table 4.17: Frequency in derivative trading

Source: Primary data

Figure 4.8, shows the frequency of derivative trading among 175 respondents. The figure shows that almost every investor in Ernakulam is trading in derivatives frequently (39.4 percent), followed by investors doing occasional trading (34.9 percent). Only 14.3 percent of investors are always engaged in Future and Options trading.



Source: Primary data



4.3.4 FUTURE AND OPTIONS TRADING – RISK ENDURANCE

Table 4.18 shows the level of risk tolerance among the investors engaged in Futures and Options trading in Ernakulam District. Among the 175 investors, 48.6 percent are ready to accept a medium level of risk in their investment.26.3 percent of the investors are willing to face high level of risk in their investment meanwhile only 16 and 9.1 percent of the investors ready to take very low risk on their investment.

Personal level of tolerance for investment risk	Frequency	Percent
Very Low	16	9.1
Low	28	16.0
Medium	85	48.6
High	46	26.3
Total	175	100

 Table 4.18: Investor's personal level of tolerance for investment risk

Source: Primary Data

The investor's level of risk endurance in their investment is shown in the figure 4.9. Majority of the respondents (48.6 percent) are ready to accept medium investment risk, followed by 26.3 percent with high investment risk, 16 percent with low investment risk and 9.1 percent with very low investment risk.



Source: Primary Data

Figure 4.9: Investors level of tolerance for investment risk

4.3.5. DERIVATIVE TRADING: LEVEL OF INVESTMENT

Table 4.9 shows the amount of money invested in Futures and Options trading. Majority of the respondents (44.6 percent) are ready to invest 10% to 30% of their money in futures and options, followed by 37 percent of the investors with 30% to 50%. Only 18.3 percent of the investors invest less than 10%.

How much do you invest in derivative products?	Frequency	Percent		
Less than 10%	32	18.3		
10% to 30%	78	44.6		
31% to 50%	65	37.1		
Total	175	100		
Source: Primary Data				

Table 4.19: Amount invested	d in derivative instruments
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Figure 4.10 shows the level of investment among investors engaged in derivative trading in Ernakulam. The figure shows that, out of the 175 respondents 44.6 percent of invest 30% - 40% of their income in derivatives.37.1 percent of the respondents invest 31% - 50%. Investors constituting 18.3 percent invest less than 10%.



Source: Primary Data

4.3.6 FUTURES AND OPTIONS – RATE OF RETURN

Return wise classification of the investors from the table 4.20 reveals that 40.6 percent of the investors earn a return around 21% to 50% from derivative trading. 32 percent of the investors earn a return between 11% and 20%. Out of the remaining investors 20.6 percent earn less than 10% and only a handful investors (6.9 percent) earn more than 51%.

Figure 4.10: Amount invested in derivative instruments

Average return on investment in derivative products	Frequency	Percent
Less than 10%	36	20.6
11% to 20%	56	32.0
21% to 50%	71	40.6
51% to 100%	12	6.9
Total	175	100

Table 4.20: Average return from derivative products

Source: Primary Data

Figure 4.11 shows average return of investors from derivative trading in Ernakulam. Out of the 175 respondents, majority the investors earn 21% to 50% while 32 percent of them earn 11% to 20%. The remaining investors of 20.6 percent earn less than 10% and rest of them (6.9 percent) earn 51% to 100%.



Source: Primary Data



4.3.7 DERIVATIVES – A LOSS HEDGER

Table 4.21 reveals the percentage of loss covered by hedging the derivatives by the investors in Ernakulam District. It's clear from the table that 56.6 percent of the investors covered 21% - 50% of the loss by hedging the derivatives.34.3 percent of the investors hedged derivatives for covering losses up to 20%. The remaining investors of 9.1 percent covered more than 50% of their losses through hedging the derivatives.

The percentage of loss covered by hedging the derivatives	Frequency	Percent
0 % - 20%	60	34.3
21% - 50%	99	56.6
51% - 100%	16	9.1
Total	175	100

 Table 4.21: Loss covered by hedging the derivatives

Source: Primary Data

Figure 4.12 bring out the percentage of loss covered by the respondents in trading in derivatives. Majority of the respondents (56.6 percent) covered 20% - 50% of their loss through hedging. Out of the remaining respondents, 34.3 percent covered less than 20% and 9.1 percent covered more than 50% of their loss.



Source: Primary Data

Figure 4.12: Loss covered by hedging the derivatives

4.3.8 DERIVATIVES: INVESTOR'S PREFERENCE

Table 4.22 shows investor's choice of derivative instrument. Stock futures is the most preferred derivative instrument among the investors has been ranked 1 with a mean of 3.50. Index futures has been ranked 2 with mean score of 2.79, which is the most preferred after stock futures. Stock options and index options are ranked 3 and 4.

Products do you prefer	Mean	Rank
Index options	1.54	4
Index futures	2.79	2
Stock options	2.17	3
Stock futures	3.50	1

 Table 4.22: Derivatives: Investor's preference.

Source: Primary Data

4.3.9 FUTURES AND OPTIONS TRADING: SOURCES INFLUENCED IN DERIVATIVE TRADING

Table 4.23 shows the factors which influenced the investors in choosing futures and options trading in Ernakulam district. The most influencing factor which behind derivative trading is the opinion the experts and professionals which has been ranked 1 with a mean of 4.98. The next best source of influence is the opinion of the stock broker which is ranked 2 with a mean score of 4. After stock brokers, respondents are channelized in to derivative trading by the influence of channels and media, ranked 3 with a mean of 2.63. Apart from the above, the sources like friends and relatives and others (seminars, conferences etc.) have been ranked 4 and 5 respectively.

Sources which influenced you to choose derivative trading	Mean	Rank
Stock broker	4.00	2
Friends/relatives	2.07	4
Channels / media	2.63	3
Others	1.32	5
Experts/experienced people	4.98	1

Table 4.23: Sources influenced in derivative Trading

Source: Primary data

4.3.10 DERIVATIVE TRADING: WHY DO INVESTORS TRADE/INVEST IN DERIVATIVES?

The investors in Ernakulam district has several reasons for investing/trading in derivatives. Table 4.24 reveals that investor's rationale behind trading in derivatives is to earn profit by speculation which is ranked 1 with a mean score of 4.86. The next reason for trading is derivatives is to hedge future loss, ranked 2 with mean of 3.73, followed by a mean score of 2.35 with rank 3 the investors choose derivatives to insure their principal investment. Other reasons like setting off previous investment losses and other factors like liquidity, price discovery are ranked 4 and 5 respectively.

Why do you trade/invest in derivatives	Mean	Rank
Others	1.67	5
To set off previous investment losses	2.25	4
To hedge the risk of future loss	3.73	2
To insure principal investment	2.35	3
To earn profit by speculation	4.86	1

Fable 4.24: 1	Reasons	for	derivative	trading
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Source: Primary data

4.4 SATISFACTION LEVEL OF INVESTORS IN DERIVATIVE TRADING

The present study uses Structural Equation Model for testing the following hypothesis.

H1: Making good returns from derivative markets (LS1) is an essential part (or

measures) for investor satisfaction in derivative trading.

H₂: Trading in Future and Options is convenient (LS2) is an essential part for investor

satisfaction in derivative trading.

H₃: Awareness about how to trade in derivative (LS3) is an essential part for investor satisfaction in derivative trading.

H₄: Helping in fair price determination (LS4) is an essential part for investor satisfaction in derivative trading.

H₅: Enhancing liquidity in the market (LS5) is an essential part for investor satisfaction in derivative trading.

 H_6 : Market offers wide variety of derivatives to hedge risk (LS6) is an essential part for investor satisfaction in derivative trading.

H₇: Development of innovative financial products (LS7) is an essential part for investor satisfaction in derivative trading.

H₈: Increase in volume of derivative trading (LS8) is an essential part for investor satisfaction in derivative trading.

H9: Enhanced market participation (LS9) is an essential part for investor satisfaction in derivative trading.

 H_{10} : Derivatives are good short term investment option (LS10) is an essential part for

investor satisfaction in derivative trading.

In the SEM, we start with an initial model and refined to reach the final model the model fit indices are presented in Table 4.25

	γ ²	DF	Р	Normed χ2	GFI	AGFI	NFI	TLI	CFI	RMRRN	ISEA
Level of satisfaction	68.438	25	.000	2.738	.935	.857	.931	.918	.954	.028	.100

Table4.25:Model fit Indices for CFA Level of satisfaction

All the attributes loaded significantly on the latent constructs. The value of the fit indices indicates a reasonable fit of the measurement model with data. In short, the measurement model confirms to the factor structure of the constructs. In table 4.26 we present the regression coefficients.

Path	Regression Coefficient	C.R.	Р	Variance explained (%)
LS1 \rightarrow Level of satisfaction	0.918	20.671	< 0.001	84.3
$LS2 \rightarrow Level of satisfaction$	0.645	10.055	< 0.001	41.7
LS3 \rightarrow Level of satisfaction	0.622	9.551	< 0.001	38.7
LS4 \rightarrow Level of satisfaction	0.327	4.452	< 0.001	10.7
LS5→Level of satisfaction	0.453	6.406	< 0.001	20.5
LS6 \rightarrow Level of satisfaction	0.174	2.305	0.022	3.0
LS7 \rightarrow Level of satisfaction	0.131	1.728	0.086	1.7
LS8 \rightarrow Level of satisfaction	0.918	20.671	< 0.001	84.3
LS9 \rightarrow Level of satisfaction	0.710	11.635	< 0.001	50.5
$LS10 \rightarrow Level of satisfaction$	0.894	18.905	< 0.001	80.0

Table 4.26: The regression Coefficients -Level of satisfaction

H₁: Making good returns from derivative markets (LS1) is an essential part for investor satisfaction in derivative trading.

The results (refer to Table 4.26) revealed that the regulatory construct Making good returns from derivative markets has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.918, which is more than 0.4 (also p value was significant). So we accept the hypothesis H₁ and conclude that making good returns from derivative markets (LS1) has significant influence on Level of satisfaction.

H₂: Trading in F&O is convenient (LS2) is an essential part for investor satisfaction in derivative trading.

The results (refer to Table 4.26) revealed that the regulatory construct Trading in F&O is convenient has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.645, which is more than 0.4 (also p value was significant). So we accept the hypothesis H₂ and conclude that Trading in F&O is convenient (LS2) has significant influence on Level of satisfaction.

H₃: Awareness about how to trade in derivative (LS3) is an essential part for investor satisfaction in derivative trading.

The results (refer to Table 4.26) revealed that the regulatory construct Awareness about how to trade in derivative has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.622, which is more than 0.4 (also p value was significant). So we accept the hypothesis H₃ and conclude that Awareness about how to trade in derivative (LS3) has significant influence on Level of satisfaction.

H₄: Helping in fair price determination (LS4) is an essential part for investor satisfaction in derivative trading.

The results (refer to Table4. 26) revealed that the Helping in fair price determination has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.327, which is less than 0.4 (p value was significant). So we reject the hypothesis H₄ and conclude that helping in fair price determination (LS4) has no significant influence on Level of satisfaction.

H₅: Enhancing liquidity in the market (LS5) is an essential part for investor satisfaction in derivative trading

The results (refer to Table 4.26) revealed that Enhancing liquidity in the market has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.453, which is more than 0.4 (also p value was significant). So we accept the hypothesis H₅ and conclude that Enhancing liquidity in the market (LS5) has significant influence on Level of satisfaction.

 H_6 : Market offers wide variety of derivatives to hedge risk (LS6) is an essential part for investor satisfaction in derivative trading.

The results (refer to Table 4.26) revealed that Market offers wide variety of derivatives to hedge risk has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.174, which is less than 0.4 (also p value was significant). So we reject the hypothesis H₆ and conclude that Market offers wide variety of derivatives to hedge risk (LS6) has no significant influence on Level of satisfaction.

H₇: Development of innovative financial products (LS7) is an essential part for investor satisfaction in derivative trading.

The results (refer to Table 4.26) revealed that the Development of innovative financial products has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.131, which is less than 0.4 (also p value was significant). So we reject the hypothesis H₇ and conclude that Development of innovative financial products (LS7) has no significant influence on Level of satisfaction.

H₈: Increase in volume of derivative trading (LS8) is an essential part for investor satisfaction in derivative trading.

The results (refer to Table 4.26) revealed that the regulatory construct Increase in volume of derivative trading has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.918, which is more than 0.4 (also p value was significant). So we accept the hypothesis H₈ and conclude that Increase in volume of derivative trading (LS8) has significant influence on Level of satisfaction.

H9: Enhanced market participation (LS9) is an essential part for investor satisfaction in derivative trading.

The results (refer to Table 4.26) revealed that the regulatory construct Enhanced market participation has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.710, which is more than 0.4 (also p value was significant). So we accept the hypothesis H₉ and conclude that Enhanced market participation (LS9) has significant influence on Level of satisfaction.

 H_{10} : Derivatives are good short term investment option (LS10) is an essential part for investor satisfaction in derivative trading.

The results (refer to Table 4.26) revealed that the regulatory construct Derivatives are good short term investment option has significant influence on Level of satisfaction as the standardized direct effect of this construct on Level of satisfaction was 0.894, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₁₀ and conclude that Derivatives are good short term investment option (LS10) has significant influence on Level of satisfaction.



Figure 4.13: Model for measuring investor satisfaction

The rectangle represents observed factors, Ovals in drawn in the diagram represents unobserved variable. The curved double headed arrows represent correlations or co-variances among the unobserved variables and the straight headed arrow represents the factor loadings of the observed variables. The small circles with arrows pointing from the circles to the observed variables represent errors /unique factors,

which are also known as squared multiple correlation of the standard error. This initial model is refined to reach the final model



Figure 4.14: Model for measuring investor satisfaction

The measurement model indicate that LS4, LS6 and LS7 has no impact on satisfaction as their standardized regression coefficient has value less than 0.4 and so they are removed from further analysis. To calculate the level of satisfaction of the investors the responses are scored as "5" for Strongly Agree,"4" for Agree,"3" for Neutral,"2" for Disagree , "1" for Highly Disagree. The total score of the 7 questions for all 175 respondents is found out, based on which we calculate the mean % score

of the satisfaction the participants. This score is classified into one of the four groups as not satisfied if the mean % score is less than 35%, Somewhat satisfied if the mean % score is between 35 to 50 per cent, satisfied if the mean % score lies in the interval 50 to 75% and Highly satisfied if the mean % score is above 75%. A one sample Z test is carried out to test the significance. The following table gives the Mean, SD, Mean % Score and Z value of the variables considered.

	N	Mean	Std. Deviation	Mean % score	CV	Z	p value
Satisfaction	175	28.15	4.64	80.44	16.49	5.427	< 0.001

Table 4.27: Means, Standard deviation and z value for satisfaction

The mean percentage score of level of satisfaction of the investors is 80.44% which indicate that the level of satisfaction of the respondents with the Future and Options trading is high. The $CV = \frac{Standard deviation*100}{\text{is Mean}}$ indicate that this score stable as the value is less than 20%. To test whether the sample information that we observe exists in the population or to verify that the level of satisfaction of the investors

with the Future and Options trading is high or not, we formulate the hypothesis

H₀: level of satisfaction of the investors with the Future and Options trading is good

H1: level of satisfaction of the investors with the Future and Options trading is high

To test the above hypothesis, we use one sample Z test and the result is exhibited in Table 4.39. From the table 4.27 the p value is less than 0.5 which indicates that the test is significant. So, we conclude that the level of satisfaction of the investors with the F&O trading is high.

4.5. DIFFICULTY IN FUTURES AND OPTIONS TRADING

By using Structured Equation Model we test the following hypothesis;

H₁: Maintaining margin money is major problem in derivative trading.

H₂: Complexity of the instrument is major problem in derivative trading.

H3: Lack of sufficient training is major problem in derivative trading.

H₄: High speculation is major problem in derivative trading.

H₅: Futures and Options are available in odd lots is major problem in derivative trading.

H₆: Misleading tips and advertisement is major problem in derivative trading.

H₇: Huge volatility is major problem in derivative trading.

H₈: Lack of timely information is major problem in derivative trading.

H₉: Other factors are a major problem in derivative trading.

	χ ²	DF	Р	Normed χ2	GFI	AGFI	NFI	TLI	CFI	RMR	RMSEA
Problems	48.660	18	.000	2.703	.942	.856	.901	.865	.932	.023	.099

Table 4.28: Model fit Indices for CFA Problem

Source: Primary data

All the attributes loaded significantly on the latent constructs. The value of the fit indices indicates a reasonable fit of the measurement model with data. In short, the measurement model confirms to the factor structure of the constructs. In table 4.29 we present the regression coefficients.

Path	Regression Coefficient	C.R.	Р	Variance explained (%)
Maintaining margin money \rightarrow Problem	0.204	2.714	0.007	4.2
Complexity of the instrument \rightarrow Problem	0.788	13.982	< 0.001	62.1
Lack of sufficient training \rightarrow Problem	0.208	2.768	0.006	4.3
High speculation \rightarrow Problem	0.553	8.167	< 0.001	30.5
Future and Options are available in odd lots→Problem	0.344	4.703	<0.001	11.8
Misleading tips and advertisement →Problem	0.378	5.216	<0.001	14.3
Huge volatility \rightarrow Problem	0.003	0.039	0.969	0.01
Lack of timely information \rightarrow Problem	0.859	16.912	< 0.001	73.9
Other factors \rightarrow Problem	0.499	7.187	< 0.001	24.9

Table 4.29: The regression Coefficients – Problem

H₁: Maintaining margin money is a major problem in derivative trading.

The results exhibited in Table 4.29 revealed that the regulatory construct maintaining margin moneyhas no significant influence on Problem as the standardized direct effect of this construct on Problem was 0.204, which is less than 0.4. So, we reject the hypothesis H_1 and conclude that maintaining margin money is not a major problem in derivative trading.

H₂: Complexity of the instrumentis a major problem in derivative trading.

The results exhibited in Table 4.29 revealed that the regulatory construct Complexity of the instrument has significant influence on Problem as the standardized direct effect of this construct on Problem was 0.788, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₂ and conclude that Complexity of the instrument is major problem in derivative trading.
H₃: Lack of sufficient training is major problem in derivative trading.

The results exhibited in Table 4.29revealed that the regulatory construct Lack of sufficient training has no significant influence on Problem as the standardized direct effect of this construct on Problem was 0.208, which is less than 0.4. So, we reject the hypothesis H₃and conclude that Lack of sufficient training is not a major problem in derivative trading.

H₄: High speculation is major problem in derivative trading.

The results exhibited in Table 4.29 revealed that the regulatory construct High speculation has significant influence on Problem as the standardized direct effect of this construct on Problem was 0.553, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₄ and conclude that High speculation is major problem in derivative trading.

H₅: Future and Options are available in odd lots is major problem in derivative trading.

The results exhibited in Table 4.29 revealed that the regulatory construct Future and Options are available in odd lots has no significant influence on Problem as the standardized direct effect of this construct on Problem was 0.344, which is less than 0.4. So, we reject the hypothesis H_5 and conclude that Future and Options are available in odd lots is not a major problem in derivative trading

H₆: Misleading tips and advertisement is major problem in derivative trading.

The results exhibited in Table 4.29 revealed that the regulatory construct Misleading tips and advertisement has no significant influence on Problem as the standardized direct effect of this construct on Problem was 0.378, which is less than 0.4. So, we reject the hypothesis H_6 and conclude that Misleading tips and advertisement is not a major problem in derivative trading

H₇: Huge volatility is major problem in derivative trading.

The results exhibited in Table 4.29 revealed that the regulatory construct huge volatility has no significant influence on Problem as the standardized direct effect of this construct on Problem was 0.003, which is less than 0.4. So, we reject the hypothesis H_7 and conclude that huge volatility is not a major problem in derivative trading.

H₈: Lack of timely information is major problem in derivative trading.

The results exhibited in Table 4.29 revealed that the regulatory construct Lack of timely information has significant influence on Problem as the standardized direct effect of this construct on Problem was 0.859, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₈ and conclude that Lack of timely information is major problem in derivative trading.

H9: Other factors is major problem in derivative trading.

The results exhibited in Table 4.29 revealed that the regulatory construct Other factors has significant influence on Problem as the standardized direct effect of this construct on Problem was 0.499, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₉ and conclude that other factors is major problem in derivative trading.





4.6 PERFORMANCE OF DERIVATIVE MARKET

Structural Equation Model is used to identify the factors which can modulate derivative market efficiently. The following hypothesis are tested;

H₁: High Margins is a factor which modulate derivative market efficiently.

H₂: Adequate awareness is a factor which modulate derivative market efficiently.

H₃: Monitoring of high volume/ value trades is a factor which modulate derivative

market efficiently.

H₄: Periodic Training to Market Participants is a factor which modulate derivative market efficiently.

H₅: Monitoring Speculative tendencies is a factor which modulate derivative market efficiently.

H₆: Ensuring basic compliance for competent Market Participants is a factor which modulate derivative market efficiently.

	χ^2_{\cdot}	DF	Р	Normed χ2	GFI	AGFI	NFI	TLI	CFI	RMR	RMSEA
Factors	10.682	2	.005	5.341	.980	.787	.991	.947	.993	.022	.158

Table 4.30: Model fit Indices for CFA Modulating Factor.

All the attributes loaded significantly on the latent constructs. The value of the fit indices indicates a reasonable fit of the measurement model with data. In short, the measurement model confirms to the factor structure of the constructs. In table 4.31we present the regression coefficients.

Path	Regres sion Coeffic ient	C.R.	Р	Variance explaine d (%)	Rank
High Margins →Modulating Factor	0.666	10.538	< 0.001	44.4	5
Adequate awareness \rightarrow Modulating Factor	0.653	10.236	< 0.001	42.7	6
Monitoring of high volume/ value trades →Modulating Factor	0.944	23.260	<0.001	89.1	2
Periodic Training to Market Participants →Modulating Factor	0.784	13.845	<0.001	61.5	3
Monitoring Speculative tendencies →Modulating Factor	1.101	49.839	<0.001	121.3	1
Ensuring basic compliance for competent Market Participants →Modulating Factor	0.667	10.562	<0.001	44.5	4

Table 4.31: The regression Coefficients -Modulating Factor.

H₁: High Margins is a factor which modulate derivative market efficiently.

The results exhibited in Table 4.31 revealed that the regulatory construct High Margins has significant influence on Modulating Factor as the standardized direct effect of this construct on Modulating Factor was 0.666, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₁and conclude that High Margins is a factor which modulate derivative market efficiently.

H₂: Adequate awareness is a factor which modulate derivative market efficiently.

The results exhibited in Table 4.31 revealed that the regulatory construct Adequate awareness has significant influence on Modulating Factor as the standardized direct effect of this construct on Modulating Factor was 0.653, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₂ and conclude that adequate awareness is a factor which modulate derivative market efficiently.

H₃: Monitoring of high volume/ value trades is a factor which modulate derivative market efficiently.

The results exhibited in Table 4.31 revealed that the regulatory construct Monitoring of high volume/ value trades has significant influence on Modulating Factor as the standardized direct effect of this construct on Modulating Factor was 0.944, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₃and conclude that Monitoring of high volume/ value trades is a factor which modulate derivative market efficiently.

H₄: Periodic Training to Market Participants is a factor which modulate derivative market efficiently.

The results exhibited in Table 4.31 revealed that the regulatory construct Periodic Training to Market Participants has significant influence on Modulating Factor as the standardized direct effect of this construct on Modulating Factor was 0.784, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₄ and conclude that Periodic Training to Market Participants is a factor which modulate derivative market efficiently.

H₅: Monitoring Speculative tendencies is a factor which modulate derivative market efficiently.

The results exhibited in Table 4.31 revealed that the regulatory construct Monitoring Speculative tendencies has significant influence on Modulating Factor as the standardized direct effect of this construct on Modulating Factor was 1.101, which is more than 0.4 (also p value was significant). So we accept the hypothesis H₅ and conclude that Monitoring Speculative tendencies is a factor which modulate derivative market efficiently.

H₆: Ensuring basic compliance for competent Market Participants is a factor which modulate derivative market efficiently.

The results exhibited in Table 4.31 revealed that the regulatory construct Ensuring basic compliance for competent Market Participants has significant influence on Modulating Factor as the standardized direct effect of this construct on Modulating Factor was 0.667, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₆and conclude that ensuring basic compliance for competent Market Participants is a factor which modulate derivative market efficiently.



Figure 4.17: Model evaluating the efficiency of Derivatives market



4.7 BARRIERS IN DERIVATIVE TRADING

The Structural Equation Model is used to identify the reasons behind comparatively less derivative trading in Kerala. The following hypothesis were formulated for explaining the Structural Equation Model;

H₁: Lack of technical and fundamental knowledge is a reason behind comparatively less derivative trading in Kerala.

H₂: Lack of awareness is a reason behind comparatively less derivative trading in Kerala.

H₃: Misleading information is a reason behind comparatively less derivative trading in Kerala.

H₄**:** Risk involved is a reason behind comparatively less derivative trading in Kerala.

H₅: There are some other reasons behind comparatively less derivative trading in Kerala.

Table 4.32: Model fit Indices for CFA for reasons behind comparatively less derivative Trading in Kerala

	$\chi^2_{.}$	DF	Р	Normed χ2	GFI	AGFI	NFI	TLI	CFI	RMR	RMSEA
Reasons	7.530	4	.110	1.883	.982	.933	.923	.899	.960	.018	.071

All the attributes loaded significantly on the latent constructs. The value of the fit indices indicates a reasonable fit of the measurement model with data. In short, the measurement model confirms to the factor structure of the constructs. In Table 4.33 we present the regression coefficients.

Table 4.55: The regression Coefficients –Reasons.								
Path	Regression Coefficient	C.R.	Р	Variance explained (%)	Rank			
Lack of technical and fundamental knowledge →Reason	0.523	7.613	<0.001	27.3	2			
Lack of awareness \rightarrow Reason	0.456	6.456	< 0.001	20.8	4			
Misleading information →Reason	0.691	11.146	< 0.001	47.7	1			
Risk involved→Reason	0.470	6.690	< 0.001	22.1	3			
Others →Reason	0.240	3.210	0.002	5.8				

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H1: Lack of technical and fundamental knowledge is a reason behind comparatively less derivative trading in Kerala.

The results exhibited in Table 4.33 revealed that the regulatory construct Lack of technical and fundamental knowledge has significant influence on Reason as the standardized direct effect of this construct on Reason was 0.523, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₁ and conclude that Lack of technical and fundamental knowledge is a reason behind comparatively less derivative trading in Kerala.

H₂: Lack of awareness is a reason behind comparatively less derivative trading in Kerala.

The results exhibited in Table 4.33 revealed that the regulatory construct Lack of awareness has significant influence on Reason as the standardized direct effect of this construct on Reason was 0.456, which is more than 0.4 (also p value was significant).

So, we accept the hypothesis H_2 and conclude that Lack of awareness is a reason behind comparatively less derivative trading in Kerala.

H₃: Misleading information is a reason behind comparatively less derivative trading in Kerala.

The results exhibited in Table 4.33 revealed that the regulatory construct Misleading information has significant influence on Reason as the standardized direct effect of this construct on Reason was 0.691, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₃ and conclude that Misleading information is a reason behind comparatively less derivative trading in Kerala.

H₄: Risk involved is a reason behind comparatively less derivative trading in Kerala.

The results exhibited in Table 4.33 revealed that the regulatory construct Risk involved has significant influence on Reason as the standardized direct effect of this construct on Reason was 0.470, which is more than 0.4 (also p value was significant). So, we accept the hypothesis H₄and conclude that Risk involved is a reason behind comparatively less derivative trading in Kerala.

H₅:Others factors is a reasons behind comparatively less derivative trading in Kerala.

The results exhibited in Table 4.33 revealed that the regulatory construct others have no significant influence on Reason as the standardized direct effect of this construct on reason was 0.240, which is less than 0.4 (also p value was significant). So we reject the hypothesis H₅ and conclude that other factors are not a reason behind comparatively less derivative trading in Kerala.





Figure 4.20: Hindrances in Derivatives market.

4.8 RISK AND RETURNS FROM FINANCIAL DERIVATIVES

The risk and returns from derivative trading is analysed using the statistical measure of correlation. Correlation was appropriate to analyze the relationship between the two variables which were interval-scaled and ratio-scaled. Pearson's Correlation is used to identify the relationship between risk and returns. The result is exhibited in the Table 4.52

Table 4.34: Correlation between risk and returns.							
Variables	Correlation	Lower	Upper	7	n		
v ai lables	Correlation	bound	bound	L	р		
risk and returns	0.515	0.478	0.552	7.902	< 0.001		

Table 4.34 shows the correlation between risk and returns 0.515, which indicate that there is significant positive relationship between risk and returns.

4.9 DERIVATIVE TRADING: SOCIO – DEMOGRAPHIC CROSS ANALYSIS

The level of satisfaction and attitude of the investors vary with sociodemographic factors. Hence the opinion expressed by the respondents vary with their socio-demographic characteristics. This is verified by an independent sample chi-square test and the results are exhibited.

4.9.1 SOCIO DEMOGRAPHIC CROSS ANALYSIS: GENDER AND DERIVATIVES TRADING

The gender wise cross analysis is carried out in the Table 4.35 using Pearson Chi-Square Test. For the question "Do you trade in Financial Derivatives" 97.3 percent of the male and 100 percent of the female says yes. This indicate that the trading in financial derivative does not vary with gender.

Table 4.35: Gender * Do you trade in Financial Derivatives Cross

tabulation

			Do you trade	e in Financial	
			Deriv	Total	
			Yes	No	
		Count	143	4	147
Gender	Male	% within Gender	97.3%	2.7%	100.0%
		Count	28	0	28
	Female	% within Gender	100.0%	0.0%	100.0%
Total		Count	171	4	175
		% within Gender	97.7%	2.3%	100.0%

To find out whether this holds in the population or not the following hypothesis is tested,

H0a: The trading in financial derivative is independent of sex.

H1a: The trading in financial derivative dependent on sex.

An independent sample chi square test is carried out for testing the above hypothesis and the result are exhibited in the Table 4.36. The result indicate that test is not significant as the p value is greater than 0.05 and we accept the hypothesis H0a. So we conclude that the trading in financial derivative is independent of sex.

Table 4.36: Chi-Square Tests.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0.0373	1	0.847
			Not significant

4.9.2 SOCIO DEMOGRAPHIC CROSS ANALYSIS: GENDER AND FREQUENCY DERIVATIVES TRADING

Table 4.537 shows cross tabulation of variables gender and frequency in derivative trading in the present study. The variables are analysed by using Pearson's Chi-square test.

Table 4.37:Gender *	^c How frequently d	lo you trade in	derivatives	Cross tabulation
---------------------	-------------------------------	-----------------	-------------	-------------------------

			How frequer	ntly do you	ı trade in der	ivatives	Tatal
			Rarely	Occasi onally	Frequently	Always	Total
	Male	Count	16	49	57	25	147
Gender		% within Gender	10.9%	33.3%	38.8%	17.0%	100.0%
	Female	Count	4	12	12	0	28
		% within Gender	14.3%	42.9%	42.9%	0.0%	100.0%
Total		Count	20	61	69	25	175
		% within Gender	11.4%	34.9%	39.4%	14.3%	100.0%

To find out whether this holds in the population or not the following hypothesis is tested,

H0a: The frequency of trading in financial derivative is independent of sex.

H1a: The frequency of trading in financial derivative is dependent on sex.

The Chi square test is carried out for testing the above hypothesis and the result are exhibited in the Table 4.38. The result indicate that test is not significant as the p value is greater than 0.05. Therefore we accept the hypothesis H0a and conclude that the

frequency of trading in financial derivative is independent of sex.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.405	2	0.301
			Not significan

Table 4.38: Chi-Square Tests

4.9.3 SOCIO DEMOGRAPHIC CROSS ANALYSIS: GENDER AND

EXPERIENCE IN DERIVATIVES TRADING

The variables gender and experience in derivative trading are cross tabulated as

revealed in Table 4.39 and is analysed by using Chi-Square test.

	Experience in stock market						
			5years and below	5 to 10 years	10 to 15 years	15 years and above	Total
	N 1	Count	74	56	12	5	147
Condor	Male	% within Gender	50.3%	38.1%	8.2%	3.4%	100.0%
Gender	Gender	Count	16	12	0	0	28
	Female	% within Gender	57.1%	42.9%	0.0%	0.0%	100.0%
		Count	90	68	12	5	175
То	tal	% within Gender	51.4%	38.9%	6.9%	2.9%	100.0%

Table 4.39: Gender * Experience in stock market Cross tabulation

To find out where these variables are independent the following hypothesis is tested,

H0a: The experience in trading financial derivative is independent of sex.

H1a: The experience in trading financial derivative is dependent on sex.

The Chi square test is carried out for testing the above hypothesis and the result are exhibited in the Table 4.40 .The result indicate that test is not significant as the p value is greater than 0.05. So we accept the hypothesis H0a we conclude that the experience in stock market is independent of sex.

Table 4.40: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.587	2	0.166
			Not significant

4.9.4. SOCIO DEMOGRAPHIC CROSS ANALYSIS: AGE AND EXPERIENCE IN DERIVATIVES TRADING.

Table 4.41 shows the variables age and experience tabulated and analyzed by

using Pearson's Chi-square test.

			Ex	perience ir	n stock mark	xet	Total
			5years and below	5 to 10 years	10 to 15 years	15 years and above	
	20-30	Count	45	8	0	0	53
	years	% within Age	84.9%	15.1%	0.0%	0.0%	100.0%
	30-40	Count	33	36	4	0	73
	years	% within Age	45.2%	49.3%	5.5%	0.0%	100.0%
	40-50 years	Count	8	16	4	0	28
		% within Age	28.6%	57.1%	14.3%	0.0%	100.0%
	50&	Count	4	8	4	5	21
	above	% within Age	19.0%	38.1%	19.0%	23.8%	100.0%
		Count	90	68	12	5	175
	Total	% within Age	51.4%	38.9%	6.9%	2.9%	100.0%

Table 4.41: Age * Experience in stock market Cross tabulation

To find out where these variables are independent the following hypothesis is tested,

H0a: The experience in trading financial derivative is independent of age.

H1a: The experience in trading financial derivative is dependent on age.

The Chi square test is carried out for testing the above hypothesis and the result are exhibited in the Table 4.42 .The result indicate that test is significant as the p value is less than 0.05. So we conclude that the experience in trading financial derivative is dependent of age.

Table 4.42: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.581	3	<0.001
			Significant

4.9.5 SOCIO DEMOGRAPHIC CROSS ANALYSIS: AGE AND

DERIVATIVES TRADING.

Age wise cross tabulation is carried in Table 4.43. The table shows age wise classification of the respondents with their response to Futures and Options trading.

Table 4.43: Age * Do	you trade in	Financial	Derivatives	Cross tabulation.
8	•			

53 100.0%
53 100.0%
100.0%
73
100.0%
28
100.0%
21
100.0%
175
100.0%

To find out where these variables are independent the following hypothesis is tested,

H0a: Trading financial derivative is independent of age.

H1a: Trading financial derivative is dependent on age.

The Chi square test is carried out for testing the above hypothesis and the result are exhibited in the Table 4.44 .The result indicate that test is not significant as the p value is less than 0.05. Therefore we accept accept the hypothesis H0a and reject H1a. So we conclude that thetrading in financial derivative is independent of age.

 Table 4.44: Chi-Square Tests.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	0.613	1	0.434
			Not significant

4.9.6 SOCIO DEMOGRAPHIC CROSS ANALYSIS: AGE AND FREQUENCY

IN DERIVATIVES TRADING

Table 4.45 shows the variables age and frequency in derivatives trading is

tabulated and analysed by using Pearson's Chi-square test.

			How	frequently do you	trade in deriv	atives	
				Rarely Occasionally Frequently Always			
	20.20	Count	0	16	29	8	53
	20-50 years	% within Age	0.0%	30.2%	54.7%	15.1%	100.0%
	30-40 years	Count	4	20	32	17	73
Age	5	% within Age	5.5%	27.4%	43.8%	23.3%	100.0%
	40-50 years	Count	12	12	4	0	28
		% within Age	42.9%	42.9%	14.3%	0.0%	100.0%
	50&above	Count	4	13	4	0	21
		% within Age	19.0%	61.9%	19.0%	0.0%	100.0%
	Total	Count	20	61	69	25	175
		% within Age	11.4%	34.9%	39.4%	14.3%	100.0%

Table 4.45: Age * How frequently do you trade in derivatives Cross tabulation

To check whether these variables are independent the following hypothesis is tested,

H0a: Frequency in derivative trading is independent of age.

H1a: frequency in derivative trading is dependent on age.

The Chi square test is carried out for testing the above hypothesis and the result are exhibited in the Table 4.46 .The result indicate that test is significant as the p value is less than 0.05.Therefore we accept reject H0a and accept H1a.Thus, we conclude that the frequency in derivative trading is dependent of age.

Table 4.46: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.774	6	<0.001
			significant

4.9.7 SOCIO DEMOGRAPHIC CROSS ANALYSIS: EDUCATION AND EXPERIENCE IN STOCK MARKET

The socio demographic factor of the respondent i.e. education is cross tabulated with experience of the respondent in the stock market in the table 4.47. These variables are analysed by using Pearson's Chi-square test and the results are exhibited in table 4.48.

			I	Experience in stock market			
				5 to 10 years	10 to 15 years	15 years and above	Total
		Count	21	36	8	5	70
Education	Degree	% within Education	30.0%	51.4%	11.4%	7.1%	100.0%
Lucation	Professional	Count	69	32	4	0	105
		% within Education	65.7%	30.5%	3.8%	0.0%	100.0%
Total		Count	90	68	12	5	175
		% within Education	51.4%	38.9%	6.9%	2.9%	100.0%

Table 4.47: Education * Experience in stock market Cross tabulation

To check whether these variables are independent the following hypothesis is tested,

H0a: Experience in stock market is independent of education.

H1a: Experience in stock market is dependent on education.

The Chi square test is carried out for testing the above hypothesis and the result are exhibited in the Table 4.48. The result indicate that test is significant as the p value is less than 0.05. Therefore we accept reject H0a and accept H1a.Thus, we conclude that Experience in stock market is dependent on education.

 Table 4.48: Chi-Square Tests.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.583	2	<0.001
			significant

4.9.8 SOCIO DEMOGRAPHIC CROSS ANALYSIS: EDUCATION AND FINANCIAL DERIVATIVES

The socio demographic factor of the respondent i.e. education is cross tabulated with experience of the respondent in the stock market in the table 4.49. These variables are analysed by using Pearson's Chi-square test and the results are exhibited in table 4.50.

			Do you trad Deriv	Do you trade in Financial Derivatives		
			Yes	No		
		Count	66	4	70	
Education	Degree	% within Education	94.3%	5.7%	100.0%	
		Count	105	0	105	
	Professional	% within Education	100.0%	0.0%	100.0%	
		Count	171	4	175	
Total		% within Education	97.7%	2.3%	100.0%	

Table 4.49: Education * Do you trade in Financial Derivatives Cross tabulation

To check whether these variables are independent the following hypothesis is tested,

H0a: Trading in derivatives is independent of education.

H1a: Trading in derivatives is dependent on education.

The Chi square test is carried out for testing the above hypothesis and the result are exhibited in the Table 4.50 .The result indicate that test is significant as the p value is less than 0.05.Therefore we accept reject H0a and accept H1a.Thus, we conclude that trading in derivatives is dependent on education.

Table 4.50: Chi-Square Test.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.140	1	.013
			significant

4.9.9 SOCIO DEMOGRAPHIC CROSS ANALYSIS: EDUCATION AND YEARS OF EXPERIENCE

In the present study, Table 4.51 shows cross tabulation of variables education and years of experience in derivative trading. The variables are analysed by using Pearson's Chi-square test.

			Years of	ears of experience in derivatives trading				
			Less than 1 year	1 to 2 years	3 to 4 years	5 years and above	Total	
	5	Count	9	20	32	9	70	
	Degree	% within Education	12.9%	28.6%	45.7%	12.9%	100.0%	
Education	Professional	Count	45	32	28	0	105	
		% within Education	42.9%	30.5%	26.7%	0.0%	100.0%	
Total		Count	54	52	60	9	175	
		% within Education	30.9%	29.7%	34.3%	5.1%	100.0%	

 Table 4.51: Education * Years of experience in derivatives trading Cross

 tabulation

To check whether these variables are independent the following hypothesis is tested,

H0a: Experience in derivatives trading is independent of education.

H1a: Experience in derivatives trading is dependent on education.

The Chi square test is carried out for testing the above hypothesis and the result are exhibited in the Table 4.52. The result indicate that test is significant as the p value is less than 0.05.Therefore we accept reject H0a and accept H1a.Thus, we conclude that Experience in derivatives trading is dependent on education.

Table 4.52: Chi-Square Tests. Value df Asymp. Sig. (2-sided) 2 0.019 Pearson Chi-Square 7.924 significant

CHAPTER 5:

SUMMARY OF FINDINGS,

CONCLUSIONS AND SUGGESTIONS

5.1 INTRODUCTION

The derivatives have become quite popular trading activity all over the world. Despite this fact, the awareness about derivatives, their economic function, trading practice and their purpose is not quite popular. In Kerala, the term derivatives are treated as risky investment option and investors not ready to investment in them. The study focuses on the investors in Ernakulam District of Kerala to find out their preference towards Futures and Options, their level of satisfaction, reasons, their risk and returns and the problems faced by them in derivative trading. The study is aimed to motivate and encourage individual investors to invest in exchange driven derivatives.

The main objectives of the study are as follows;

- TM To analyze the relationship between the risk and returns from Future and Options trading to an investor in Ernakulam District.
- TM To examine the reasons considered for trading in Future and Options derivatives.
- TM To assess the level of financial satisfaction from derivative trading.
- TM To identify the problems faced by the investors in Future and Options trading. As part of the study the following hypotheses were formulated;

H1:Level of satisfaction of the investors with the Future and Options trading is not high
H2: There is no significant difference in satisfaction level of male and female investors.
H3: There is no significant difference in the satisfaction level of investors in relation to education.

H4: The level of satisfaction does not differ with age.

H5: *Trading in derivatives is independent of education.*

H6: *Experience in derivatives trading is independent of education.*

H7:Experience in stock market is independent of education.

5.2. SUMMARY OF FINDINGS

A study on investors preference towards Exchange Futures and Options covered 175 respondents (Investors) in Ernakulam District. The following are the main findings of the study;

Findings Based On Profile Of The Respondents.

- It is revealed that majority of the respondents under study are male investors.
 This indicate that Futures and Option trading is popular among males compared to female investors.
- 2. It also revealed satisfaction level among the respondents is not based on their gender.
- 3. The study shows that investor within the age group of 20 to 30 years are constitute major proportion of investors who trade in derivatives in Ernakulam District while investors with age above 50 years constitutes a very low proportion of investors in derivative market segment.
- 4. It is found out that the age of the respondents is has no significant effect on the level of satisfaction among the investors. So we can say that investor's satisfaction is not based on their age.
- The study shows that investors having professional degree aredominating the Futures and Options market compared to investors with bachelor's degree.
- 6. It also found that there that level of education of the investors influence their satisfaction from derivative trading.

- 7. Most of the investors under the study are private sector employees constituting
 60 percent of the respondents followed by professionals, Businessmen, daily
 wage earner and unemployed persons.
- 8. It can be seen from the study that occupation of the investors influences their level of satisfaction from Futures and Options trading.
- 9. It can be found that most of the investors under the study earn Rs. 41,000 to Rs. 50,000 per month, followed by investors more than Rs.50,000 p.m.This shows that investors with high monthly income are ready to invest in derivatives compared to low income groups. Therefore we can conclude that income of the respondents effect their level of satisfaction.

An Insight into Derivative Trading –Findings

- 1. The study shows experience of respondents in the stock market has a significant role in their derivative trading. Majority of the respondents (51.9 percent) has an experience of 0 to 5 years, followed by respondents (38.9 percent) with 6 to 10 years. Hardly 2.9 percent of respondents has an experience ranging from 15 years and above. Thus we can conclude that exposure to the stock market guides the investor who are willing to take risk to invest in futures and options.
- 2. It clearly shows that investors need to have experience to trade in the derivative market segment. Majority of the investors have an experience of 3 to 4 years. It also seen that investor with less than a year exposure to derivative market segment are trading in derivatives. Thus, we can conclude that derivative trading are becoming quite popular these days.
- The study shows that most the investors in Ernakulam are frequently trading in derivatives. So we can conclude that investors earn a reasonable return from trading.

- 4. Most of the investors in the district are willing to tolerate risk at a medium level while trading in derivatives. This brings out the fact, if there is a return from trading investors are willing to take more risk.
- 5. It can be seen that majority of the investors invest 10 percent to 30 percent of their money in futures and options, followed by 37 percent of the investors with 30 percent to 50 percent. This indicates that investors are now willing to invest more and is actively participating in the Futures and Options segment.
- 6. Majority of the investors are earning 21 percent to 50 percent return from futures and options market. Thus we can conclude that Futures and Options trading is one of the most profitable investment avenues in the present scenario.
- 7. Majority of the investor's hedge 21 percent to 50 percent of their investment risk through Futures and Options. Therefore it is clear that apart from earning returns derivatives are an effective tool for hedging investment risks.
- 8. The study shows that Stock Futures are the most preferred derivative instrument among investors. Stock Options and Index Options are least preferred by investors.
- 9. Most of the investors are guided to trade in derivatives based on advices and opinions from experts or professionals. It is also seen that investors are influenced to invest in derivatives on advices and opinions from stock brokers.
- 10. The study shows that the primary motive of majority of the investors to trade and invest in derivatives is, to earn profit through speculation. It also found that hedging investment risk is only secondary to the investor.

Findings Based on Investors Level Of Satisfaction.

- Good returns from derivative markets has significant influence on Level of satisfaction of the investors. In short, earning good returns from the market leads to investor satisfaction.
- 2. It found that the convenience in the trading of the Futures and Options market increases the satisfaction of the Investors.
- 3. It is that the investors who knows the trading mechanisms in futures and option are highly satisfied to trade in Derivatives.
- 4. The use of derivatives for fair price estimation of a security has does not lead to investor's satisfaction.
- 5. It is found that enhancing liquidity in the market has no does not lead to investor's satisfaction in the futures and options segment.
- 6. The study shows that innovative derivative instruments has does not lead to investor's satisfaction.
- The study reveals that increase in the volume of trade of derivative instruments leads to investor's satisfaction.
- 8. It found that through increased market participation the satisfaction level of investors can be improved.
- 9. The study shows that derivatives being a short term investment increases the investor's level of satisfaction.
- 10. It found out from the study that the Investors level of satisfaction with Futures and Options trading is high

Findings based on difficulties faced by investors in Futures and Options Trading

- The study revealed that maintaining the margin money is not a major problem faced by the investors trading in Futures and Options segment.
- 2. It is found that majority of the investors is facing difficulty in trading futures and options due its complexity.
- Lack of training in the derivatives market segment is not a major difficulty faced by the investors.
- 4. The study shows that high speculation in the derivatives market is main problem confronted by investors.
- Misleading tips and advertisement is not a major problem in derivative trading for the investors.
- Price changes and fluctuations pose a great problem for the investors trading in the futures and options market.
- 7. It is revealed that lack of timely information to the investors at the right time is one of the main obstacles faced by the investors.
- 8. The study shows that other factors like economic policy, market situations etc. is a major problem faced by the investors in the Derivative market segment.

Findings based on Factors Modulating The Derivative Market.

- The investors are of the opinion that high margins acts as a guide to modulate the Futures and Options.
- 2. It found that adequate amount of awareness regarding derivative market segment could modulate the derivatives market to a great extent.
- The monitoring of high value trades on a continuous basis can lead to effective control of the derivatives market.

- 4. The periodic training to the market participants can modulate the derivatives market effectively.
- 5. The study reveals that monitoring the speculative tendencies in the market can lead to effective modulation of the Futures and Options Segment.
- The study shows that ensuring basic compliance for competent Market Participants is a factor which modulate derivative market efficiently.

Findings based on barriers in derivative trading in Kerala

- 1. It is found out that lack of technical and fundamental knowledge is one of the main reason behind comparatively less derivative trading in Kerala.
- 2. The study revealed that lack of awareness among the investors in Kerala is a reason behind comparatively less derivative trading in Kerala.
- Most investors believe that misleading information leads disadvantageous position of derivative and its trading in Kerala.
- 4. The study shows that most the investors in Kerala are concerned about the risk involved in derivative trading.
- 5. Other factors income, general economic conditions, amount involved are not a reason behind low derivative trading in Kerala.

Findings Based on Risk and Returns From Financial Derivatives.

The risk and returns from derivative trading is analysed using the statistical measure of correlation. The study shows that there is significant positive relationship between risk and returns. Thus we conclude that risk and returns from the Futures and Options Segment indicating that Futures and Options are good derivative instruments for trading.
Findings on Derivative Trading: Socio – Demographic Cross Analysis.

- It is found out that investor's trade in derivatives is not dependent on its age.
 Thus, we can conclude that age does not influence the investors derivative trading.
- 2. The study revealed that the frequency in derivative trading is not effected by the age of the investors.
- 3. The experience of the investors in the derivatives market is not dependent of his age. Thus we can conclude that age of the investors does not influence his experience in derivatives market.
- 4. The study also revealed that trading in derivatives is dependent on education of the investor. Thus, we can conclude that only those investors with sound theoretical and academic knowledge can trade in Exchange Futures and Options effectively.
- 5. The study shows that experience in the derivatives is related to the investor's educations. This indicates that investors with sound educational background and experience in the derivative market segment would able to hedge their investment losses and earn profits through speculation.

5.3. TESTING OF HYPOTHESES

a) **H**₁:Level of satisfaction of the investors with the Future and Options trading is

not high

The mean percentage score of level of satisfaction of the investors is 80.44% which indicate that the level of satisfaction of the respondents with the Future and Options trading is high. The CV= $\frac{\text{Standard deviation*100}}{\text{score is Mean}}$ indicate that this stable as the value is less than 20%. To test whether the sample information that we observe exists in the population or to verify that the level of satisfaction of the investors

with the Future and Options trading is high or not, we formulate the hypothesis. To test the above hypothesis, we use one sample Z test and the p value is less than 0.5 which indicates that the test is significant. So, we conclude that the level of satisfaction of the investors with the F&O trading is high.

b) H2: *There is no significant difference in satisfaction level of male and female investors.*

An independent sample Z test are often used to compare the satisfaction level of variables for two different groups of participants, that is, male and female investors. Hence a Z test was conducted. The result shows that no significant difference in the satisfaction level exist between the male and female investors as the p value in these cases is greater than 0.05. So we accept the HOa hypothesis.

c) H3: There is no significant difference in the satisfaction level of investors in relation to education.

One way ANOVA is used to test hypotheses about means when there are three or more groups of one independent variable. The results of the ANOVA shows that assumed significance value, (p) is less than 0.05. The results proved that the level of satisfaction differ with education of the respondent. We reject the hypothesis H_{0b} . Since the ANOVA test indicate that there is significant difference in level of satisfaction in respect of education. Therefore, we accept H1b hypothesis.

d) **H4**: *The level of satisfaction does not differ with age.*

A one sample analysis of variance (ANOVA) is used to test hypotheses about means when there are three or more groups of one independent variable. The results of the ANOVA reveals that assumed significance value (p) is less than 0.05. The results proved that the level of satisfaction differ with age. We reject the hypothesis H_{0b} .Since the ANOVA test indicate that the significant difference exists among the different Age group for the Satisfaction.

e) H5: Trading in derivatives is independent of education.

The Chi square test is carried out for testing the above hypothesis .The result indicate that test is significant as the p value is less than 0.05.Therefore we accept reject H0a and accept H1a.Thus, we conclude that trading in derivatives is dependent on education.

f) **H6:** *Experience in derivatives trading is independent of education.*

The Chi square test is carried out for testing the above hypothesis. The result indicate that test is significant as the p value is less than 0.05. Therefore we accept reject H0a and accept H1a. Thus, we conclude that Experience in derivatives trading is dependent on education.

g) **H7:***Experience in stock market is independent of education.*

The Chi square test is carried out for testing the above hypothesis .The result indicate that test is significant as the p value is less than 0.05.Therefore we accept reject H0a and accept H1a.Thus, we conclude that trading in derivatives is dependent on education.

5.4 CONCLUSION

The investor's preference towards the Futures and Option are influenced by various factors. The investors like to invest in those financial instruments which yield high returns with minimum risk. The derivative instruments are a perfect blend of both risk and returns. This research is intended to analyse the individual investors for the reasons in choosing to trade in Futures and Options, their risk and returns, problems faced during such trading and their level of satisfaction. From the study we arrive at some useful conclusions,

- TM The main factors which induced the customer to trade in financial derivatives is the based on the opinions of the experts, professionals and stock brokers. Thus we need to focus on training the market participants, so that they give the right information to the investors.
- TM The study revealed that complexity of the instrument and its trading posed a great difficulty for the investors to trade in Exchanges. Therefore the investors must given adequate training to trade in the Futures and options market segement. Programmes like National Seminars, Mock trading terminals, Workshops, Advertisements and Stock Brokers Meet must be conducted on regular basis to familiarize with concepts and trading mechanisms.
- TM The general trend in the turnover of financial derivatives like Stock futures,
 Stock Options, Index Options, Index futures are showing a upwards trend in
 India. This is expected to continue in the future also.

- TM From the study it is clear that investor like to trade in derivatives due to its high returns from speculation. This should be a primary focus of concern for the authorities and should channelize the efforts to make the derivatives a hedging tool rather than speculative tool.
- TM The concerned authorities must see that the derivatives market can be effectively controlled by monitoring high value transactions, proper awareness, periodic training and speculative control.
- TM The investors in Ernakulam District are too concerned with risk factor of the investment. Most of the investor with adequate stock market exposure also concerned about risk of Derivatives.
- TM The educated and experienced investors are making reasonable returns from the derivatives market, this indicates that investors with sound theoretical and practical experience can trade in derivatives without making losses.
- TM The study shows the majority of the investors in the Ernakulam District engaged in Futures and Options trading hedge 21 percent to 50 percent of their investment .This gives a clear cut picture of the popularity and emergence of a new era of trading in the possible future.

5.5 SUGGESTIONS

Based on the findings under the study we can conclude that derivative market segment has grown substantially over the many years. The study on investors in Ernakulam District has thrown light on many areas which would help the understanding of the Futures and Options segment in India. Based on the study done the following suggestions are made;

- TM Most of the investors are not aware about the derivatives and its trading mechanisms. The investors mostly depend on professionals or experts and stock broker for trading in derivatives. There on the light of the above concerned authorities must take efforts to educate the investors.
- TM The SEBI must take active role in monitoring the Exchanges and ensure guidelines to make sure that no investor's interest are violated because the investors in Ernakulam District use derivatives a speculative tool rather to hedge their risk.
- TM The main reasons for the problems in the Futures and Options trading in the study is that lack of right information at the right time. This can be rectified by the authorities by providing necessary information through their online websites, Social media, National Seminars and so on. The Stock Broking firms should provide mock trades, handouts and advices to create an optimism among the investors.
- TM Proper and effective grievance cells, Helplines and Offices either offline or online should be open for derivative market segment throughout the country so that every person could get information free of cost and file / register their complaints.

- TM The derivative market segment should open up new types of instruments which is easy to trade and earn reasonable return. This would motivate the investors who are not ready to take risk to jump into derivative market segement.
- TM Trading in Derivatives should be promoted among the investors by providing them tax rebates and concessions.
- TM Based on the experience of the traders in the derivatives proper measure must take by the authorities concerned. The new investors in the market has to be given proper orientation, practice and guidance at regular intervals.
- TM Derivative industry needs to develop products to fulfils customer needs and help customers understand how its products cater to their needs.
- TM Periodical review should be done for investment and risk analysis of the investors at regular intervals properly.
- TM Stock exchanges should start up helplines, employ skilled persons who are experts in the field of derivatives, conduct training programmes and create a convenient trading floor for the investors who are new to Futures and Options.

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APPENDIX

QUESTIONNAIRE

Dear Sir/Madam,

The following questions seek information from investors doing derivative trading. Please answer all the questions. Your sincere opinion on all the questions is the most appropriate answer for my study. Kindly co-operate to complete my research successfully. Thank You!!

SECTION 1

Personal Profile

1. Name (Optional)	1.	Name	(Optional))
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:

2. Gender	:	Male	Female
3. Age	:	20-30 years	31-40 years
		41-50 years	50 years & above
4. Educational Qualification	:	S.S.L.C and below	Pre degree/plus two
		Degree	Professional
		Others (specify)
5. Occupation	:	Government/Semi-Governm	nent service
		Private sector Business	Professional Practice
		Agriculture Retire	ed (Specify)
		Others (specify)
6. Monthly Income	:	Rs 20,000 &below	
		Rs 21,000 to Rs 30,000	
		Rs 31,000 to 40,000	
		Rs.41, 000 to Rs 50,000	
		Rs 50,000 and above	

SECTION 2

1.	How many years of experies	nce do you have in stock market?				
	5years and below	5 to 10 years				
	10 to 15 years	15 years and above				
2.	Do you trade in Financial D	erivatives?				
	Yes	No				
3.	How many years of experies	nce do you have in derivatives trading?				
	Less than 1 year	1 to 2 years				
	3 to 4 years	5 years and above				
4.	How frequently do you trac	le in derivatives?				
	(Put) in any one column of	your choice tick (اع) mark				
	AlwaysFrequently					
	Occasionally	Rarely				
5.	Which of the following proc	ducts do you prefer? (Please rank 1, 2, 3, and 4				
	accordingly)					
	Stock futures Index	t futures				
	Stock options Index	options				
6. Wh	y do you trade/invest in deriv	atives?				
	(Please rank according to yo	our preference 1, 2, 3, 4)				
	a) To earn profit by specu	lation				
	b) To hedge the risk of fut	ure loss				
	c) To set off previous inve	estment losses				
	d) To insure principal inve	estment				
	e) Any others (pleas	e specify)				

Very Low	Lo	ow I	Medium	High	Very High				
. As a percentage	e of the total a	mount in your	investment por	tfolio, how n	nuch do you				
invest in deriva	tive products?	,							
Less than 1	10% 10%	6 to 30%	30% to 50%	50% to	100%				
9. The information from the following sources below influenced you to choose									
derivative trading?									
(Rank them 1, 2	2, 3, 4)								
a) Friends/relat	ives	b) Stock	k broker						
c) Channels / m	nedia	d) Exper	ts/experienced p	eople					
e) Any others	(please s	pecify)						
0. What is your a	verage return	on investment	t in derivative p	roducts?					
Less than 10%	10% to 2	0% 209	% to 50% 5	0% to 100%					
100% and Above	e								
11. Express your	opinion (Dark	en the circle©))						
<u> </u>	<u>-</u> F (/						
Suffered losses in $F\&O$	Always	Frequently	Occasionally	Rarely O	Never O				
trading		0	0						
	Highly		Disagram	Highly	No opinion				
F&O Trading		Agree \bigcirc	Disagree						
F&O Trading is risky	Agree	Agree ()	Disaglet	disagree	0				
F&O Trading is risky	Agree	Agree ()	Disagree	disagree O	0				
F&O Trading is risky F&O Trading	AgreeO Highly	Agree ()	Disagree O	disagree O Highly	O No opinion				
F&O Trading is risky F&O Trading earns returns	Agree Highly Agree O	Agree ()	Disagree O	disagree O Highly disagree O	O No opinion O				

12. The percentage of loss covered by hedging the derivatives?

0 % - 20% 20% - 50% 50% - 100% 100% and Above

13. Please indicate the level of satisfaction with the statements below by darkening the circles on the scale from 5 to 1 where "5" represents Strongly Agree, "4" represents Agree, "3" Neutral, "2" represents Disagree , "1" for Highly Disagree

Sl.No.	Statements	5	4	3	2	1
1.	You aremaking good returns from derivative markets.	0	0	0	0	0
2.	Trading in F&O is convenient.	0	0	0	0	0
3.	You are aware about how to trade in derivative	0	0	0	0	0
4.	Helps in fair price determination.	0	0	0	0	0
5.	Derivative trading has enhanced liquidity in the market.		0	0	0	0
6.	Market offers wide variety of derivatives to hedge risk.	0	0	0	0	0
7.	Derivatives have helped in development of innovative financial products.	0	0	0	0	0
8. 9.	Your volume of derivative trading has increased.Trading in derivatives enhanced market	0	0	0	0	0
	participation	0	0	0	0	0
10.	Derivatives are good short term investment option.	0	0	0	0	0

14. Express your opinion with the statements indicating the possible problems experienced in derivatives trading below by darkening the circles on the scale from 5 to 1 where "5" represents Strongly Agree, "4" represents Agree, "3" Neutral, "2" represents Disagree , "1" for Highly Disagree

Sl.No.	Statements	5		4	3 2	1
1.	Maintaining margin money Complexity of the instrument		0	0	0	0
2.			0	0	0	0
3.	Lack of sufficient training	0	0	0	0	0
4.	High speculationF&Os are available in odd lotsMisleading tips and advertisement		0	0	0	0
5.			0	0	0	0
6.			0	0	0	0
7.	Huge volatility	0	0	0	0	0
8.	Lack of timely information .	0	0	0	0	0
9.	Other factors	0	0	0	0	0

15. Personally evaluate the factors which can modulate derivative market efficiently.

	*** 11		D.	Highly	No
High Margins	Highly Agree	Agree O	Disagree O	disagree	$\stackrel{\text{opinion}}{\circ}$
	<u> </u>			O Highly	No
Adequate awareness	Highly Agree	Agree O	Disagree O	disagree	opinion O
Monitoring of high	Highly			Highly	No
volume/ value trades	Agree _O	Agree _O	Disagree _O	disagree O	opinion _O
Periodic Training to Market Participants	Highly Agree ○	Agree 🔿	Disagree ()	Highly disagree O	No opinion 🔿
Monitoring Speculative tendencies	Highly Agree _O	Agree _O	Disagree _O	Highly disagree O	No opinion _O
Ensuring basic compliance for	Highly			Highly	No
competent Market	Agree O	Agree O	Disagree O	disagree O	opinion \bigcirc

16. As per your opinion, what are the reasons behind comparatively less derivative trading in Kerala?

Darken the circles on the scale from 5 to 1 where "5" represents Strongly Agree, "4" represents Agree, "3" Neutral, "2" represents Disagree , "1" for Highly Disagree

Sl.No.	Statements			4	3 2	1
1.	Lack of technical and fundamental knowledge	0	0	0	0	0
2.	Lack of awareness	0	0	0	0	0
3.	Misleading information	0	0	0	0	0
4.	Risk involved	0	0	0	0	0
5.	OthersFactors (Specify)	0	0	0	0	0

THANK YOU