

# Financial Derivatives: A Risk-Return Analysis with special reference to F&O Segment in Ernakulam District

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**Abstract** - The international financial system has undergone many significant structural changes in recent years: major financial institutions have merged; many companies have globally expanded, thus considerably intensifying competition. The trend followed by banks and corporations was amplified by long-term changes occurred into the structure of the industry. This expansion led to the emergence of new risks, both credit and operational. Into the last 30 years many corporations have found that is more advantageous to get funding from public by issuing bonds rather than borrow directly from banks. Banking institutions found themselves competing with increasingly fierce, reducing margins and giving loans with higher maturities to doubtful clients. On the other hand, customers request increasingly sophisticated and complicated ways to finance their activity, to protect themselves against risks and to invest their liquid assets. In this context, derivatives had a spectacular evolution. If previously were used only by financial institutions, demand has grown today covering all industries. But global derivatives industry is in a continuous consolidation. The derivative instruments are traded for a variety of reasons. But in 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.

**Keywords** —F&O Segment, Futures Contract, Cash Settlement, Contract Month, Options Contract, Strike Price.

## I. INTRODUCTION

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 risk-return in Futures and Options segment 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 risk and return analysis of Futures and Options segment in derivatives market to find out the problems faced by the investors in derivative market segment.

## II. PREVIOUS LITERATURE

Raghavendra (2013)<sup>[1]</sup> 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)<sup>[2]</sup> 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)<sup>[3]</sup> 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)<sup>[4]</sup> 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)<sup>[5]</sup> 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)<sup>[6]</sup> threw 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.

MarouanIben Taarit (2016)<sup>[7]</sup> 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.

Vilimir Yordanov (2016)<sup>[8]</sup> 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)<sup>[9]</sup> 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.

### III. OBJECTIVES

The present study on investor's preference towards Futures and Options is limited to Ernakulam District. 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 risk - returns and the problems faced by them in derivative market segment. This study is 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. The 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. The relationship between risk and return from derivative trading calls for consideration of investor's hindrances and obstacles in the derivative market segment. Therefore there is need to analyse the risk and return in the derivative market segment. The present study is designed with the following objectives,

The analyze the relationship between the risk and returns from Futures and Options trading.

- To identify the problems faced by the investors in Financial Derivative trading.

### IV. METHODOLOGY

The present study is exploratory in nature and is envisioned to find out the risk-return for investors from Futures and Options. Besides this, the study also focuses on the problems faced by the investors in Futures and Options trading. Stock market investors refer to those who have a DEMAT account to

operate and invest in stock market. 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 computer program, Statistical Package for the Social Sciences (SPSS version 20) is used to analyze the 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 using simple random sampling method by setting a population frame of 200 investors in Ernakulam District.

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.

#### IV. FINANCIAL DERIVATIVES – ANALYSIS AND INTERPRETATION

The present study was conducted in Ernakulam district of the Kerala state. 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.

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.

**Table 1: Cronbach’s Alpha Reliability Test**

Variables	Cronbach's Alpha	No. of Items
Problems experienced in derivatives trading	0.653	9

#### Financial Derivatives-Risk and Return Analysis

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.

**Table 2. : Correlation between risk and returns**

Variables	Correlation	Lower bound	Upper bound	Z	p
risk and returns	0.515	0.478	0.552	7.902	<0.001

Table 2.shows the correlation between risk and returns as 0.515, which indicate that there is significant positive relationship between risk and returns

#### Financial Derivatives-Risk and Return Analysis

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

**H<sub>1</sub>:** Lack of technical and fundamental knowledge is a reason behind comparatively less derivative trading in Kerala.

**H<sub>2</sub>:** Lack of awareness is a reason behind comparatively less derivative trading in Kerala.

**H<sub>3</sub>:** Misleading information is a reason behind comparatively less derivative trading in Kerala.

**H<sub>4</sub>:** Risk involved is a reason behind comparatively less derivative trading in Kerala.

**H<sub>5</sub>:** There are some other reasons behind comparatively less derivative trading in Kerala.

**Table 3. : The regression Coefficients –Reasons**

Path	Regression Coefficient	C.R.	P	Variance explained (%)	Rank
Lack of technical and fundamental knowledge →Reason	0.523	7.613	<0.001	27.3	2
Lack of awareness →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	

**H<sub>1</sub>:** Lack of technical and fundamental knowledge is a reason behind comparatively less derivative trading in Kerala.

The results exhibited in Table 3 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 H<sub>1</sub> and conclude that Lack of technical and fundamental knowledge is a reason behind comparatively less derivative trading in Kerala.

**H<sub>2</sub>:** Lack of awareness is a reason behind comparatively less derivative trading in Kerala.

The results exhibited in Table 3 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<sub>2</sub> and conclude that Lack of awareness is a reason behind comparatively less derivative trading in Kerala.

**H<sub>3</sub>:** Misleading information is a reason behind comparatively less derivative trading in Kerala.

The results exhibited in Table 3 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 H<sub>3</sub> and conclude that Misleading information is a reason behind comparatively less derivative trading in Kerala.

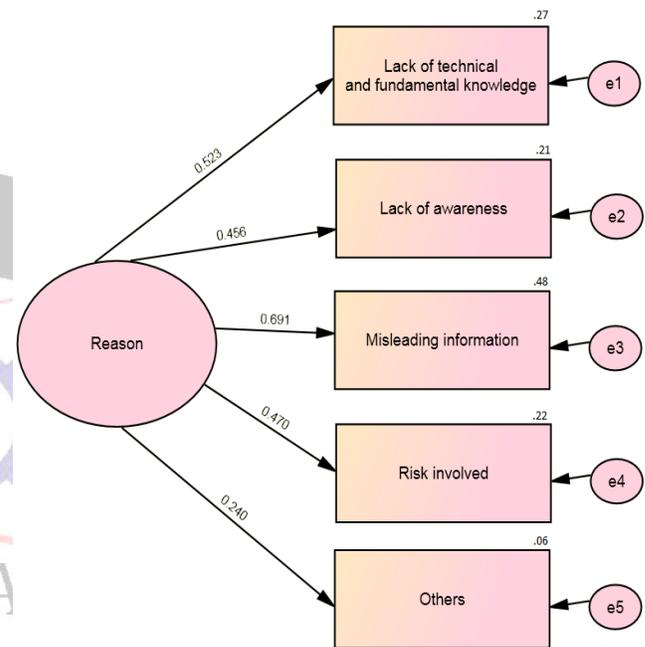
**H<sub>4</sub>:** Risk involved is a reason behind comparatively less derivative trading in Kerala.

The results exhibited in Table 3 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 H<sub>4</sub> and conclude that Risk involved is a reason behind comparatively less derivative trading in Kerala.

**H<sub>5</sub>:** Others factors is a reasons behind comparatively less derivative trading in Kerala.

The results exhibited in Table3 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 H<sub>5</sub> and conclude that other factors are not a reason behind comparatively less derivative trading in Kerala.



**Figure 1: Hindrances in Derivatives market**

## V. FINDINGS

The risk and returns from derivative trading is analysed using the statistical measure of correlation. The study also shows that there are significant problems faced by investors in Kerala, India. Thus we conclude that,

- Risk and Returns from the Futures and Options Segment indicating that Futures and Options are good derivative instruments for trading.
- It is found out that lack of technical and fundamental knowledge is one of the main reason behind comparatively less derivative trading in Kerala.
- 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.
- The study shows that most the investors in Kerala are concerned about the risk involved in derivative trading.
- Other factors income, general economic conditions, amount involved are not a reason behind low derivative trading in Kerala.

## VI. 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;

- 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.
- 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.
- 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 optimism among the investors.
- 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.
- 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 segment.
- Trading in Derivatives should be promoted among the investors by providing them tax rebates and concessions.
- 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.

- Derivative industry needs to develop products to fulfils customer needs and help customers understand how its products cater to their needs.
- Periodical review should be done for investment and risk analysis of the investors at regular intervals properly.
- 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

## VII. 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 risk – returns and problems faced during such trading and their level of satisfaction. From this study we arrive at some useful conclusions. Firstly, 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. Secondly, the study also that complexity of the instrument and its trading posed a great difficulty for the investors to trade in Exchanges. The investors must given adequate training to trade in the Futures and options market segment. 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 and also concerned authorities must see that the derivatives market can be effectively controlled by monitoring high value transactions, proper awareness, periodic training and speculative control. The investors in Ernakulam District are too concerned with risk factor of the investment. Therefore, a strong emotional bond between the investors and market intermediaries are inevitable for the success mantra in Derivative Trading.

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