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Original Research Article

A study of derivatives market (with reference to futures and options)

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ABSTRACT

To find the gap between what potential the derivative market offers & how much investors are aware & willing to take benefit of the same. In the era of growing importance of savings & investment, Derivatives is a source of investment & risk management tool which is not explored to its full horizons & capabilities. My study on focuses on 2 major types of derivatives i.e. futures & options, there risk & return profiles & the investment motives & returns that investors have earned from their investment. It analyses the gap between the potential of derivatives market & how much are investors able to take the benefit of the same. The derivatives market, its functionality, practical approach & implementation is studied by considering 3 sectors - Fashion and Retail Industry, Financial Services and IT Industry & 3 industries in each of these 3 sectors. A primary data is also collected by collecting responses from investors via a Questionnaire. The questions in the Questionnaire were related to investors awareness, their risk appetite, their choice of derivative investment & returns earned by them in their investments. The primary & secondary data is then compared & based on this suggestions & findings of the study are given in this report. The result of factoral anova test shows that there is an interaction present between the no. of times an investor invests & the risk capacity possessed by him / her. The chi-square test shows that there is a relationship between the income & investment pattern of investors. So, it is identified from the study that there is a huge gap between what the derivative market has to offer, its potential and investor perceptions & choices in the market & investors awareness about this market.

1. Introduction

Risk is a feature of all commodity & capital markets. Since last 2 decades many fold increase in the volume of international trade & business has been seen due to the ever-growing globalization & liberalization in the world. So, financial markets have experienced variations in interest rate & exchange rates, stock market prices thus exposing the corporate world to a state of growing financial risk. Increased financial risk exposes a profitable organizational to losses. Derivatives provide an effective solution to problem of risk caused by uncertainty & volatility in the underlying asset of the derivative. They are risk management tools which help in transferring the risk effectively. They are instruments which have no independent value to themselves. Its value depends on the underlying asset which may be financial or non-financial.

2. Literature Review

(Mrinmayee Gunti, 2016)

He found that the derivatives are risk management tool that support in effective management of risk by various stockholders. Derivatives provide a chance to transfer risk from the one who wish to avoid it, to one who wish to agree it. India's experience with the introduction of the equity derivatives market has been really encouraging and

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successful.

Nagaraju 2014

Study on investors' perception towards derivative markets & it's Instruments. The study concludes that before making of investment the investor should take effective measurements and determining the factors of risk for investment decision on particular financial instruments.

(Dr. Babraju 2014) has done the analyses on the perception of investor towards derivatives as an investment avenue. (D.V. Gakhar 2016) study on Impact on Volatility and Investor Perception explores the investors awareness and investors investment decisions and risk taking ability on derivative instruments plays an important role in the development of trading activities in the derivative market. (Gopal Krishna U M 2019) study explores the Investors investment behavior and risk taking ability on various investment avenues.

(Pasha, S. A. M. 2013). A strive is made by the researcher to comprehend what type of perceptions had by means of retail traders in India based totally on Andhra Pradesh State reference with a pattern measurement of five hundred respondents by way of the usage of easy share bar diagrams. (Kukreja, G. 2012) Aims to measure the investors' appreciation toward Indian capital market with reference to National Capital Region (NCR) traders of India. (Rakesh, H.M. 2015). Study Intends to locate choice stage of traders on a number of Capital Market instruments. (Pallavi, E. V. P. A. S., & Raju, T. K. 2014). The derivatives market is witnessing first-rate boom in India. The statistical information displays that the whole turnover of futures and choices in NSE market are Rs 67510.02 billion and Rs 247820.01 billion respectively through 2012-13. (Paraschiv, D., & Raghavendra, S. 2009, March).[1] Introduced a inventory scanner evaluator for shares and options. (Senthil, 2015) attempts to study the investor's awareness and perception about commodity futures market. (Manrai, 2015) analyzed the investor's behavior towards derivative markets in Indian context. (P. Periasamy, 2018) investigated the perception of investors towards Indian commodity derivative market with inferential analysis in Chennai city. (Natividad Blasco, Pilar Corredor, Sandra Ferreruela, 2012) conducted a study to explore herding behavior to identify relationship between rational and emotional components and to test whether past return indirectly drives herding behavior.[2–8]

3. Research Gap

To find the gap between what potential the derivative market offers & how much investors are aware & willing to take benefit of the same.[9–19]

4. Research Objectives

1. To analyze the operations of futures and options in financial services sector.
2. To find the gap between what potential the derivative market offers & how much investors are aware & willing to take benefit of the same.
3. To find the profit/loss position of futures buyer and seller and also the option writer and option holder.
4. To find out the reasons for preferring derivative instrument.

5. Research Methodology

Table 1:

Research Design	**Descriptive Research**
Source of Data	Secondary - 14 Literature Review & T test Primary data - Anova & Chi – Square Test
Data collection method	Survey Method & Public Records
Sample size	50
Sampling method	Convenience Sampling & Stratified Random Sampling
Data collection instrument	Questionnaire

6. Data Analysis

T — test in the secondary data. And Factoral Anova, Chi – square test are applied in the primary data. 3 sectors are taken in the secondary data & T-test is applied in all the 3 sectors. In primary data, Anova & Chi-square test is applied in 5 Questions.

6.1. Secondary data

Financial services sector

1. H_O: There is no significant difference between the actual price on day of maturity & the forward price.
2. H_1: There is significant difference between the actual price on day of maturity & the forward price.

6.2. Fashion & retail industry sector

1. H_O: There is no significant difference between the actual price on day of maturity & the forward price.
2. H_1: There is significant difference between the actual price on day of maturity & the forward price.

6.3. Information technology sector

1. H_O: There is no significant difference between the actual price on day of maturity & the forward price.

Table 2:

Company	Actual Price	Future Price
Bajaj finserv	11,415.05	15,114.70
Lic housing finance	327.35	382.75
Power finance	106.1	116.7
t-Test: Paired Two Sample for Means		
	Variable 1	Variable 2
Mean	3949.5	5204.716667
Variance	41813065	73673522.9
Observations	3	3
Pearson Correlation	0.9999987	
Hypothesized Mean Difference	0	
Df	2	
t Stat	-1.026943	
P(T<=t) one-tail	0.2062092	
t Critical one-tail	2.9199856	
P(T<=t) two-tail	0.4124184	
t Critical two-tail	4.3026527	

We accept the null hypothesis

Table 3:

Company	Actual price	Future price
Abfrl	243.2	270.8
Page ind	41,678.00	48,931.45
Trent	1,081.60	1,277.20
t-Test: Paired Two Sample for Means		
	Variable 1	Variable 2
Mean	14334.267	16826.483
Variance	560935543	773299874
Observations	3	3
Pearson Correlation	0.9999999	
Hypothesized Mean Difference	0	
Df	2	
t Stat	-1.0466614	
P(T<=t) one-tail	0.2025522	
t Critical one-tail	2.9199856	
P(T<=t) two-tail	0.4051043	
t Critical two-tail	4.3026527	

We accept the null hypothesis

2. H_1: There is significant difference between the actual price on day of maturity & the forward price.

6.4. Primary data

6.4.1. Income & percentage of monthly income available for investment Chi Square test of independence - $X^2 = \sum(f_o - f_e)^2/f_e$

1. H_0: Investment rate of investors is independent on investors income.

Table 4:

Company	Actual Price	Future Price
Mindtree	2,881.60	3,425.65
Techm	988.25	1,055.70
Wipro	424.95	426.3
t-Test: Paired Two Sample for Means		
	Variable 1	Variable 2
Mean	1431.6	1635.8833
Variance	1656201.723	2501484.6
Observations	3	3
Pearson Correlation	0.999793402	
Hypothesized Mean Difference	0	
Df	2	
t Stat	-1.19497764	
P(T<=t) one-tail	0.177290925	
t Critical one-tail	2.91998558	
P(T<=t) two-tail	0.35458185	
t Critical two-tail	4.30265273	

We accept the null hypothesis

2. H_1: Investment rate of investors is not independent on investors income.

Table 5:

Observed Value	Expected Value	O-E	$(O - E)^2$	$(O - E)^2 / E$
6	4.32	1.68	2.8224	12.192768
6	5.04	0.96	0.9216	4.644864
0	2.16	-2.16	4.6656	10.077696
0	0.48	-0.48	0.2304	0.110592
4	4.68	-0.68	0.4624	2.164032
5	5.46	-0.46	0.2116	1.155336
4	2.34	1.66	2.7556	6.448104
0	0.52	-0.52	0.2704	0.140608
5	6.12	-1.12	1.2544	7.676928
8	7.14	0.86	0.7396	5.280744
3	3.06	-0.06	0.0036	0.011016
1	0.68	0.32	0.1024	0.069632
2	1.44	0.56	0.3136	0.451584
1	1.68	-0.68	0.4624	0.776832
1	0.72	0.28	0.0784	0.056448
0	0.16	-0.16	0.0256	0.004096
0	0.36	-0.36	0.1296	0.046656
0	0.42	-0.42	0.1764	0.074088
1	0.18	0.82	0.6724	0.121032
0	0.04	-0.04	0.0016	0.000064
1	1.08	-0.08	0.0064	0.006912
1	1.26	-0.26	0.0676	0.085176
0	0.54	-0.54	0.2916	0.157464
1	0.12	0.88	0.7744	0.092928

$X^2 = 51.8456$

Table 6:

Anova						
Source of Variation	**SS**	**Df**	**MS**	**F**	**P-value**	**F crit**
Rows	565.8666667	5	113.1733333	4.767200225	0.004971	2.71089
Columns	463.2	4	115.8	4.877843302	0.006557	2.866081
Error	474.8	20	23.74			
Total	1503.866667	29				

Accept the null hypothesis

Reject the null hypothesis.

6.4.2. Frequency investment in derivative market & risk capacity possessed

Factorial Design (Two Way Anova)

1. H_0: The interaction effects are zero.
2. H_1: There is an interaction effect.

7. Findings

1. There is an interaction present between the no. of times an investor invests & the risk capacity possessed by him / her.
2. There is a relationship between the income & investment pattern of investors.
3. 43.8% investors main purpose of investing in derivatives is to control risk & 62.5% investors point of attraction for investment is high returns, but they are unaware of the strategies with which they can make their investments high return yielding.
4. 59% investors have got "moderate but not acceptable" returns from their investment in derivatives market.
5. 28% investors prefer 1 month maturity period so it can be interpreted that liquidity is also their preference.
6. An investor who has the capacity to take more risk & speculate more, would take multiple chances with same or different strategy.
7. While selling call or put both there is Unlimited Loss & Fix Profit for both seller & buyer.
8. While buying call or put both there is Unlimited Profit & Fix Loss.
9. In all the 3 sectors the null hypothesis was accepted & the interpretation is that there is no significant relationship between the actual & future price.
10. So, it is identified from the study that there is a huge gap between what the derivative market has to offer, its potential and investor perceptions & choices in the market & investors awareness about this market.
11. This gap exists as investors are not aware of how derivatives operate & the strategies using which they should make their investment decisions.
12. They can satisfy investors any kind of investment purpose be it fix returns with unlimited loss or high returns with fix loss condition or any other.
13. Investors presume derivatives to be a risky investment whereas, they actually have the potential to offer short terms returns with a proper strategy & calculative decision.

8. Discussion

Investors are expecting more returns from derivative market & for the same they are willing to take the required risk, still they are getting moderate returns because they are not having the complete & required knowledge for making the investment & earning returns. Our analysis & findings of secondary data shows that derivatives are used for the purpose of hedging the risk & they can yield returns as per the risk profile of investors. The primary data analysis shows that investors are preferring to enter into stock futures more than any other. However, the investors haven't earned the returns acceptable to them probably cause their understanding of investing & strategies which should be utilised are not correct. For hedging & mitigating risk, investors may also choose options contract cause of the flexibility that options provide. Options as the name suggests gives the holder the right to exercise or not exercise it. So, if the holder finds the contract previously entered into to be unfavourable & loss making, they may also withdraw there position & save the loss. Despite of this benefit, investors with high returns expectation are preferring futures only, which indicates the incomplete knowledge & understanding of the investors about the derivatives.

9. Conclusion

The conclusion of the above research is that investors are clear above their return & risk profile & also the derivatives can be high returns yielding but haven't resulted in the expected returns cause of incomplete knowledge & expertise of investors. 43.8% investors main purpose of investing in derivatives is to control risk & 62.5% investors point of attraction for investment is high returns, but they are unaware of the strategies with which they can make their investments high return yielding. 59% investors have got "moderate but not acceptable" returns from their investment in derivatives market. There is no significant relationship between the actual & future price in all the 3 sectors under study.

10. Source of Funding

None.

11. Conflict of Interest

None.

References

1. Black K. Business Statistics. 7th ed. and others, editor. wiley; 2010. p. 616.
2. Gunti M. A Study on Financial Derivatives. and others, editor; 2016. p. 204.
3. NSE; 2023. Available from: https://www.nseindia.com/get-quotes/equity?symbol=BAJAJFINSV.
4. NSE India. Available from: https://www.nseindia.com/get-quotes/derivatives?symbol=BAJAJFINSV.
5. Available from: https://www.nseindia.com/get-quotes/equity?symbol=ABFRL.
6. Available from: https://www.nseindia.com/get-quotes/derivatives?symbol=ABFRL.
7. Available from: https://www.nseindia.com/get-quotes/equity?symbol=LICHSGFIN.
8. Available from: https://www.nseindia.com/get-quotes/derivatives?symbol=LICHSGFIN.
9. Available from: https://www.nseindia.com/get-quotes/equity?symbol=MINDTREE.
10. Available from: https://www.nseindia.com/get-quotes/derivatives?symbol=MINDTREE.
11. Available from: https://www.nseindia.com/get-quotes/equity?symbol=PAGEIND.
12. Available from: https://www.nseindia.com/get-quotes/derivatives?symbol=PAGEIND.
13. Available from: https://www.nseindia.com/get-quotes/equity?symbol=PFC.
14. Available from: https://www.nseindia.com/get-quotes/derivatives?symbol=PFC.
15. Available from: https://www.nseindia.com/get-quotes/equity?symbol=TECHM.
16. Available from: https://www.nseindia.com/get-quotes/derivatives?symbol=TECHM.
17. Available from: https://www.nseindia.com/get-quotes/equity?symbol=TRENT.
18. Available from: https://www.nseindia.com/get-quotes/derivatives?symbol=TRENT.
19. Available from: https://www.nseindia.com/get-quotes/equity?symbol=WIPRO.

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