Ilkogretim Online - Elementary Education Online, 2021; Vol 20 (Issue 2): pp. 1760-1773
http://ilkogretim-online.org
doi: 10.17051/ilkonline.2021.02.195

A Study Of Investor Behaviour In Indian Derivatives Market

Pranav Bansal Research Scholar, Haryana School of Business, GJU, Hissar

Abstract
Keeping in view the tremendous growth of Derivatives market in India it has become relevant to undertand investors perception and behavior as well as the factors that influence it for appreciating long term sentiments of this market. The objective of this paper was to analyse the investor behaviour in Indian derivatives market. In the light of investment features like frequency of investment in derivatives, investors experience in derivatives trading, method of trading, profit earned, objective of investment, percentage of investment, perceived risk of derivatives market, and importance of derivatives market in India. These investor behaviour characteristics have also been analysed on the basis of demographics wise differences in Indian investors. For the purpose of the study, a structured questionnaire was administered. The results reveal that investor behaviour in derivatives market which is governed by various factors mentioned above are affected by demographic variable of the investor like gender, age, nature of employment, workplace activity, work experience, annual family income, educational background.

Keywords: Derivatives market, investors experience, demographic variable

Introduction

After the introduction of derivatives trading, the Indian financial market is growing besides the increased participation of the retail investors. As the derivatives products are quite complex in nature and not easier to understand, so, it makes sense here to study the perception of investors about various aspects of derivatives. The present paper analysed the investors' awareness and perception about derivatives market and products.

Research Methodology

To study the aforesaid issues, a structured questionnaire had been used to collect the required data. It was sent to 750 respondents through Google forms, e-mails, telephonic talks etc. The respondents mainly include retail investors, employees of brokerage houses, financial advisors, traders, mutual fund companies and sub brokers from Delhi NCR, Chandigarh, Mumbai and Indore. The cities have been selected on the concept of convenience sampling. In all, 548 responses have been

received out of which 26 questionnaires have been rejected as these were incomplete, thereby leaving a sample of 522 respondents. For reliability and validity, the Cronbach Alpha test was applied on pilot data. The content validity was carried out with the help of two academic and two industry experts, and their feedback was incorporated in the final questionnaire.

Following null hypotheses have been formulated in this regard

H01: There is no significant association between demographics and incidence of Investment in derivatives market.

H02: There is no significant association between demographics and understanding of derivatives trading.

H03: There is no significant association between demographics and way of derivatives trading.

H04: There is no significant association between demographics and return in derivatives.

H05: There is no significant association between demographics and investment in derivatives.

H06: There is no significant association between demographics and importance of derivatives.

H07: There is no significant association between demographics and risk perception of derivatives.

H08: There is no significant association between demographics and goals of derivatives.

Investors' Behaviour in Derivatives Market

Table I highlights the nature of trading based on frequency, experience, objectives, and trading modes used in the derivatives market.

Table I : Nature of Trading in Derivatives Market by Respondents

	Percentage
Investment Frequency	
Intraday	34.7

Daily	11.6
Weekly	15.3
Monthly	25.5
Quarterly	6.9
Annually	6.0
Total	**100.0**
Trading Experience	
< 1 year	37.3
>= 1< 3 years	39.9
> 3 years	22.8
Total	**100.0**
Trading Mode used	
Self	31.3
Through a Broker	50.3
Through Friends	11.4
Through Family Members	7.0
Total	**100.0**
Return	
< 5 percent	17.6
>=5<10 percent	26.6
>=10<15 percent	26.8
>=15< 20 percent	17.1
> 20 percent	11.9
Total	**100.0**
Proportion of investment	
< 5 percent	16.1
>=5<10 percent	35.0
>=10<15 percent	26.2
>=15< 20 percent	16.1
> 20 percent	6.6
Total	**100.0**
Views about Derivatives	
Higher returns	47.9
More efficient market	23.8
Less physical monetary transactions	8.5
Less Risky	7.1
No Problem in settlement	12.7

Total	**100.0**
Risk inherent in Derivatives	
Chances of losing money	61.7
Difficulty found in fund transactions	8.2
Difficulty found in settlement procedure	18.9
Counter party risk	10.1
Total	**100.0**
Goal of Investment	
To discover the price	9.4
To hedge my portfolio	26.4
To do speculation and earn higher returns	33.8
To take benefits of arbitrage	19.9
To make my investment risk-free	10.5
Total	**100.0**

Source: Author's computations

A. Frequency of Investment in Derivatives Market

Table II contains the results of association between demographic features and the frequency of derivatives trading, derivatives trading experience. The data have been analysed using crosstabs in SPSS and computation of Chi-square test.

Table II Association Between Demographics and Derivatives Related Variables

	Trading Frequency	Trading experience	Mode of Trading	Return	Proportion of Investment	Importance of Derivatives	Risk in Derivatives	Goal of Derivatives
ATTRIBUTE	Chi- Square Values							
Gender	5.734 (0.275	4.992 (0.332	4.08 (0.3	3.21 (0.4	23.22* (0.009)	39.81* (0.007)	28.77* (0.008)	3.11 (0.453)

	)	)	42)	11)				
Age	39.88* (0.007)	41.23* (0.004)	10.19 (0.153)	9.03 (0.163)	33.65* (0.009)	42.30* (0.004)	6.77 (0.198)	35.67* (0.009)
Employment	76.09* (0.00)	56.48* (0.00)	25.33* (0.009)	10.07 (0.112)	27.76* (0.009)	58.91* (0.00)	42.98* (0.00)	56.33* (0.00)
Field of Work	71.12* (0.00)	39.81* (0.007)	16.03* (0.021)	8.44 (0.261)	45.87* (0.00)	5.88 (0.268)	5.22 (0.288)	42.06* (0.006)
Experience	49.66* (0.00)	89.03* (0.00)	24.52* (0.009)	29.42* (0.009)	47.02* (0.00)	44.02* (0.00)	38.04* (0.007)	53.88* (0.00)
Annual Income	26.56* (0.009)	22.47* (0.009)	16.39* (0.020)	20.87* (0.010)	58.33* (0.00)	3.64 (0.407)	4.12 (0.350)	6.44 (0.187)
Education	41.03* (0.003)	21.03* (0.009)	18.19* (0.018)	7.99 (0.120)	31.02* (0.001)	28.22* (0.008)	26.77* (0.009)	6.99 (0.156)

Source: Author's computations

Significant association has been found between Age, Employment, Field, Experience, Income, Education on the one hand and frequency of derivatives trading on the other. It reveals that more young people, employees, finance professionals, newly experienced, moderately rich and moderately educated people do more frequent derivatives trading. It

seems logical that age work experience, income and education level enhances the confidence and comfort of trading in the derivatives market.Brahmabhatt, et al., (2012), Thomas, T. C. and Rajendran, G. (2012) and Sprčić, Danijela Miloš, (2007) hold similar views with respect to investors in sample countries.

B. Experience of Derivatives Trading

Table II contains the results of association between various demographics and the experience of derivative trading. This association is an indicator of the knowledge of any investor about the market. As found in the trading frequency, significant association has been found between Age, Employment, Field, Experience, Income, Education on the one hand and derivatives trading experience on the other. It reveals that more young people, employees, finance professionals, moderately experienced, moderately rich and educated people have relatively more experience in derivatives trading. Hence, the null hypothesis (H02) is not supported and there exists a significant association between age, nature of employment, experience, family incomeand educational background, and experience in derivatives trading.

C. Method of Derivatives Trading

Self-employed respondents (55.3 per cent), Government employees (51.1 per cent), Corporate sector employees (45.6 per cent), non-corporate sector employees (42.9 per cent) and unemployed (60 per cent) traded through a broker whereas 30.6 per cent of self employed, 36.2 of Government employees, 35.4 percent of Corporate sector employees, 33.3 percent of non-corporate sector employees and 10 percent of unemployed traded themselves.It was observed that the respondents traded mostly through a broker. It was also observed that the finance professionals, moderately experienced people, moderately educated and relatively rich class do more self trading. It can be concluded that the null hypothesis (H03) is not accepted as there is a significantassociation between the nature of employment, workplace activity, work experience, annual family income, and derivatives trading method.

D. Profit Earned in Derivative Market by Respondents

The association of work experience and income with the return on derivatives has been found significant. Hence, more experienced people and higher income class generated higher returns. It can be summarized from the above analysis that null hypothesis (H07) is partially accepted as there is no association

between gender, nature of employment, workplace activity, and educational background and profit earned in the derivatives market.

E. Percentage of Investment in Derivatives Instruments

It has been noticed that 31.5 per cent males invested 10-15 percent in derivative products while 45 per cent females have invested 5-10 per cent in derivatives instruments. Similarly, age, Work experience, annual family income and educational background were also found to be statistically significant for percentage of investment in derivatives market. So, the null hypothesis is not accepted (H08) as gender, age, nature of employment, work experience, annual family income, education significantly affect percentage of investment in the derivatives market.

F. Importance of Derivatives Market

Higher returns and more efficient markets have been described as the major contribution of derivatives. However, significant association has been found between Gender, Age, Nature of employment, work experience and educational background, on the one hand, and the importance of derivatives, on the other. The null hypothesis (H09) is thus not accepted.

G. Risk in Derivatives Market

Out of the four risks mentioned in the questionnaire, "chances of losing money" has been mentioned across the demographic categories. Very few percentages of respondents choose the risks related to difficulty in fund transactions, settlement procedure and counter party risk. Significant association has been found between gender, employment, work experience and education, on the one hand, and risk of derivatives, on the other. It can be summarized that the null hypothesis (H010) is partially supported as gender, nature of employment and work experience are significantly associated with risk perception of the derivatives market.

H. Objectives of Derivatives Market

Of the various goals of derivative trading, majority of the categories selected speculation as the major goal followed by hedging, arbitrage, risk freedom and price discovery. It can be summarized that the null hypothesis (H011) is partially accepted as age, nature ofemployment, workplace activity and work experience are

significantly associated with aninvestment objective of derivative market. Overall, we can conclude that investor behaviour in the derivatives market which is governed by factors like frequency of investment, experience in the market, method of investment, objectives of investment in the derivatives market, importance, risk, profit earned in the derivatives market, percentage of investment made are affected by the demographic variable of the investor like gender, age, nature of employment, workplace activity, work experience, annual family income, and educational background.

Perception of Investors - Factor Analysis

For further analysis of perception of investors towards derivatives market, factor analysis has been used.

Factor Analysis

During the preliminary analysis, a high degree of significant correlation was found between variables. The dataset was further evaluated using KaiserMeyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity. KMO measure of sampling adequacy is a test to assess the appropriateness of using factor analysis on the data set. Bartlett' test of sphericity is used to test the null hypothesis that the variables in the population correlation matrix are uncorrelated. The Bartlett's test of sphericity shows chi-square value(2873.09), which is very high, and it makes the data fit for factor analysis. The Kaiser- Meyer-Olkin (KMO) measure of sampling adequacy is 0.833, which shows the appropriateness of data for using factor analysis technique.

Table III : KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.833
Bartlett's Test of Sphericity	**Approx. Chi-Square**	2873.09
	Df	435
	Sig.	0.000

The factors are linear combinations of the variables which are believed to be highly correlated, hence, the mathematical description of it is:

$$F_i = W_{i1}X_1^* + W_{i2}X_2^* + W_{i3}X_3^* + ...W_{ik}X_k^*$$

where,

X_i^* = ith standardized variable

Fi = Estimate of ith factor

Wi = Weight or factor score coefficient for ith standardized variable.

k = Number of variables

Those values of Wi are searched by the principal component method such that the first factor explains the largest portion of total variance. This is called the first principal factor. To obtain a residual matrix, this explained variance is subtracted from the original input matrix. The extraction of the second principal factor from the residual matrix follows that the second factor takes care of most of the residual variance. Here it is important that the second principal factor has to be statistically independent of the first principal factor. The same process is repeated until there is small variance left to be explained. Kaiser Guttman method may be used to decide the number of factors to be extracted which states that this number should be equal to the number of factors having an eigenvalue of atleast 1. Using this methodology, the SPSS extracts all factors with eigenvalues greater than 1, which leaves us with 8 factors. All the factors whose eigenvalues are less than 1have been rejected. This is because each of the variables has a variance of 1 and, therefore, a linear combination of these variables called factor should not have an eigenvalue less than .

Table IV ROTATED MATRIX

		1	2	3	4	5	6	7	8
1	Complete awareness of current derivative products prevails among market participants.	0.719							
2	Sufficient awareness of derivatives trading aspects prevails among market participants.	0.784							
3	The spot and derivative markets relationship is well understood by market		0.852						

	participants.								
4	Investor participation has increased in financial markets after the introduction of derivatives.				0.701				
5	Investment in derivative products is quite popular among market participants for speedy wealth generation.				0.764				
6	Derivatives are seen as a good investment option by market participants.				0.462				
7	The participation of investors in derivative markets is because these are leveraged products.				0.831				
8	The development of innovative financial products is facilitated by the introduction of derivatives..						0.624		
9	To hedge their risk, variety of derivative products are used by the market players.						0.672		
10	Derivatives contain product innovation and novelty.						0.498		
11	Derivatives smooth the progress of price discovery.							0.694	
12	Determination of the fair price becomes easier by derivatives.							0.788	
13	Derivatives do not help in price discovery of the							0.666	

	underlying assets.								
14	Most of the retail investors end with losses in derivative market.								0.793
15	Money making using derivatives is easier for institutional investors.								0.761
16	On the expiration day of month, the spot market return increases.								0.699
17	This return increases more on the subsequent day of expiry.								0.714
18	Liquidity has increased in the market after introduction of derivative trading.					0.644			
19	There is an improvement in the volume of spot market after the introduction of derivatives.					0.629			
20	The increased participation of retail investors has increased the volume in the market.					0.802			
21	There is a positive impact of derivatives expiration day on the volumes in spot market.					0.679			
22	Market volatility is not affected by derivative trading.			0.668					
23	The volatility in spot market rises on expiration day.			0.515					
2	This volatility again rises on			0.74					

4	the next day of expiry.			1					
25	During 2008, volatility was quite high in India.			0.852					
26	Derivatives are intrinsically risky instruments.		0.544						
27	Returns from derivative products reveal wide fluctuations.		0.629						
28	Risk taking is common in derivatives trading by participants.		0.726						
29	The possibility of financial scams has risen due to derivatives.		0.637						
30	Derivatives are to blame for 2008 crisis.		0.856						

Eight factors have been generated by the rotated matrix. These are:

1. Cognisance
2. Involution
3. Product Conception
4. Price Discovery
5. Yield
6. Market Liquidity
7. Market Volatility
8. Riskiness

Conclusion

Overall we can conclude that investor behaviour in derivatives market which is governed by factors like frequency of investment, experience in market, method of investment, objectives of derivatives market, importance, risk, profit earned in derivatives market,

percentage of investment made are affected by demographic variable of the investor like gender, age, nature of employment, workplace activity, work experience, annual family income, educational background. The findings of this study are useful for investment consultants, portfolio managers, wealth managers, mutual funds, for designing portfolios for their clients and suggesting them right investment product mix.

References

1. Ahmed A. El-Masry, (2006) "Derivatives use and risk management practices by UK nonfinancial companies",Managerial Finance, Vol. 32 (2), pp.137 – 159
2. Anbukarasi, M.Devaki (2020), Behavioral Myth of Retail Investors in Commodity Derivative Market – With reference to Coimbatore District, JAC : A Journal Of Composition Theory, Vol. 13(1), pp- 614- 620.
3. Brahmabhatt, Raghu Kumari, P.S, Malekar, Shamira., (2012), A Study of Investor Behavior On Investment Avenues In Mumbai Fenil, Trans Asian Journal of Marketing & Management Research, Vol.1 (1).
4. Daniel, Ekerumeh Aduodeh, (2010), Developing A Derivative Securities Market In Ghana: Requisite Conditions Submitted in Ashesi University College
5. Disha (2018), "A Comparative Study on the Perception of Investor Towards Derivatives and Equity", International Journal of Engineering Sciences & Research Technology, 7(4), 171-176.
6. Gakhar, D. V. (2016). Indian Derivatives Market: A Study of Impact on Volatility and Investor Perception. International Journal of Social Science and Humanity, Pp. 913-918.
7. Guay, Wayne R. and Kothari, S.P., How Much Do Firms Hedge with Derivatives? (March 2001). Available at SSRN: https://ssrn.com/abstract=253036 or http://dx.doi.org/10.2139/ssrn.253036
8. Martin, Miguel & Rojas, Wolfgang & Erausquin, Jose & Vera, Dayana & Bauer, Wolfgang. (2009).
9. Derivative Usage by Non-Financial Firms in Emerging Markets: The Peruvian Case. Journal of Economics, Finance and Administrative Science. 14.
10. Milos Sprcic, Danijela, (2007), The Derivatives as Financial Risk Management Instruments: The Case of Croatian and Slovenian Non-financial Companies, Financial Theory and Practice, 31, issue 4, p. 395- 420, https://EconPapers.repec.org/RePEc:ipf:finteo:v:31:y:2007:i:4:p:395-420.
11. Ngugi Nahashon Njoroge, Njagi Gabriel Matumo and Kimani E Maina , (2013), Factors influencing development of financial derivatives markets: a survey of listed companies in Kenya, Global Advanced Research Journal of Management and Business Studies (ISSN: 2315-5086) Vol. 2(5) pp. 258-267.

12. Stulec,I., Bakovic, T. and Duzevic, I., (2013), the impact of company characteristics on derivatives usage: survey study of Large Croatian companies, mediterranean journal of social sciences, vol-4 (10), pp-59-67.
13. Thomas, T. C. and Rajendran, G., (2012), BB&K Five-way Model and Investment Behavior of Individual Investors: Evidence from India, Int. Journal of Economics and Management Vol- 6(1), pp.- 115-127