

# INVESTOR'S PERCEPTION ABOUT EXPECTED RISK AND RETURN: A STUDY IN INDIAN CONTEXT

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*[The present study aims at understanding investor behaviour in the Indian stock market for understanding their perception about risk and return. Relationship between returns and general profile of the investors, returns and company attributes are tested. Whether expected return is independent of actual return or is linked to some benchmark is also studied. Additionally, whether risk perception of investors is more closely related to the total risk of a share than to the systematic risk is studied. The findings possibly suggest that risk perception of investors is more closely related to the total risk of a share and returns are independent of benchmark. However expected return may not be independent of realized past returns.]*

**Keywords:** Stock market, Investor behaviour, Profile of investors, Actual and expected return, systematic risk, Correlation, Pearson chi-square.]

## 1. Introduction

Many financial theories are based on the idea that everyone takes careful account of all available information before making investment decisions. Within behavioral finance it is assumed that information structure and the characteristics of market participants systematically influence individuals' investment decisions as well as market outcomes. According to behavioral finance, investor market behavior derives from psychological principles of decision making to explain why people buy or sell stocks and even why they do not buy stocks at all.

Stock markets generally factors in the sentiments of the investors. The

investment behaviour of market participants may be linked to factors such as investor's investment horizons, the benchmarks used to measure performance, the behaviour of other market participants, the degree of underlying market volatility, and the presence of fads and speculative trading activity in the financial markets. Investor behaviour may help in anticipating stock market movements that in turn should help investment advisors devise appropriate asset allocation strategies for their clients. For companies, identifying the most influencing factors on their investors' behavior would affect their future policies and strategies that in turn would affect their future financial plans.

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For government, identifying the most influencing factors on investors' behavior would affect the required legislations and the additional procedures needed in order to satisfy investors' desires and also to give more support to market efficiency.

Many organizations and individuals conducted several studies on the various aspects of the capital markets in the past. These studies were mainly related to various instruments of capital market, shareholding pattern, new issue market and scope, market efficiency, risk and return, performance and regulation of mutual funds. However, not much of research was done on investment patterns and investor's perceptions. Jaakko and Henrikki (2011) study revealed that most investors had 'affect-based' motivation to invest in stock and this is over and beyond financial return expectations. Zoghalmi and Matoussi (2009) study on Tunisian investors revealed some psychological particularities that are not expected by the financial behavioral literature. Basu et al. (2008) study stated that irrational investment decision making is a widespread phenomenon. They study the perils of irrational decision-making in investments choice which finally can lead to great risk. Verma, (2008) identified the demographic profile and investor personality can be the two determinants for making perception about the investor psychology, which if scientifically studied could help the wealth management professionals to advice their clients better. The study conducted by SCMRD for Ministry of Company Affairs (2004) found that majority of the retail investors do not regard mutual fund equity

schemes as a superior investment compared to direct equity. Daniel et al. (1998) developed a theory of securities market under and overreactions based on two well-known psychological biases: investor overconfidence about the precision of private information; and biased self-attribution, which causes asymmetric shifts in investors' confidence as a function of their investment outcomes. SEBI (1998) survey revealed that risk appetite, investment objective of the investor, income of the investor, funds available for investment, greatly influences the behavior of the investor in corporate securities at various levels. The Institute of company secretaries of India in its Investor Education series III entitled "Investment Decision making by a Lay Investor" (1991) explained the preconditions for investment decision making, analysis and evaluating risks. In view of the above studies, this part of the research work aimed at studying investor's behaviour in the Indian stock market for understanding their perception about risk and return.

## 2. Methodology

Primary data were collected during 2011-12 using a questionnaire designed for the purpose. A nonprobabilistic, convenience sampling approach was used. Questionnaire was sent to various persons associated with frequent trading in stock market through email and registered post. Additionally interviews were conducted on people associated with trading to explore their perceptions on risk and return from investments in stock market and other stock market dynamics. The interviewees were chosen subjectively,

based on their willingness to discuss the subject of risk openly and at length with the interviewer. They are regulars in broking houses and include the punchers who punch in orders on behalf of the clients of a broking house, relationship managers, wealth managers, financial planners, etc. The respondents also include other regular investors in the stock market. Overall we could retrieve complete set of information from 231 respondents and they belong to different cities like New Delhi, Noida, Ghaziabad, Faridabad, Gurgaon, Guwahati, Bangalore, Kolkata, Patna, Bhubaneswar, Gandhinagar, Ahmedabad, Nagpur, Mumbai, Pune, etc. The study first explores if return is independent of general profiles of investors like gender, education

and income (Hypothesis I). Then whether systematic risk or total risk is more related to risk perception of the investors is tested in Hypothesis II. Whether returns are independent of firm specific attributes like price earnings ratio, size, etc. are tested using Hypothesis III. This hypothesis is important since evidences of some firm specific attributes not being independent of return may lead investors to form successful stock market strategies (Sagi and Seasholes, 2007). Hypothesis IV is formulated to study if investors' expectations about their investment returns are based on actual return. Finally if Investor's expectations about return are based on some benchmark returns are tested using Hypothesis V. The following null hypotheses were tested:

<b>Hypothesis I</b> :	Return from stock market is independent of general profile of investors like gender, educational background, source of income and income level.
<b>Hypothesis II</b> :	The risk perceptions of Indian investors are not related to the total risk of a share as well as to the systematic risk.
<b>Hypothesis III</b> :	Return from stock market is independent of firm specific attributes.
<b>Hypothesis IV</b> :	Expected return is independent of actual return.
<b>Hypothesis V</b> :	Expected return is independent of choice of benchmark.

### 3. Data Analysis and Findings

#### 3.1 General Profile of the Respondents

There are 157 male and 74 female respondents with ages ranging from 23 to 62. The mean and mode age is 33.37 years and 26 years respectively. 64.51% respondents are having degree or

diplomas at post graduate level and 33.77% of them have professional qualifications. 22.51% were graduates and only 12.98% of the respondents are secondary and higher secondary passed individuals. The Source of monthly income for 56.3% of the respondents is salary while 23.4% of the respondents

earns through professional fees. 19% respondents generate income from business. Only 0.4% of the respondents earn from each other sources of income like house property, pension and dividend.

Monthly Income level of 41.56% of the respondents is ₹30001-50000. 1.73%, 7.79%, 29.87%, 15.15% and 3.9% of the respondents earn in the range of ₹0-10000, ₹10001-20000, ₹20001-30000, ₹50001-100000 and above ₹100000 per month respectively.

### 3.2 Stock Market Investment Profile of the Respondents

Responses from the investors suggested that 56.71% of the respondents earned up to 10% return on an average for last three years. This is important to note here that stock market was badly hit during 2007-2008 as negative news on subprime crisis of USA spread across the globe and this crisis was followed by global recession, adverse liquidity conditions in banking

system across the globe. Due to strict monitoring by Reserve Bank of India, India was recovering from the negative impact but the bank interest rates were very high and were hovering around 10% mark for the last three years. Considering the above the rate of return, stock market investments does not seem to be reward for many investors with any substantial premium over bank interest rates. On the other side 43.29% of the respondents have earned return above 10% suggesting stock market provides enough room for investors who can employ certain strategies to earn extra return from stock market. However, 10.39% of the respondents feel their realized return were beyond expectations but 37.23%, 49.78% and 2.6 % of the respondents feel that for them, realized returns were as per expectations, below expectations and much below expectations respectively. Stock holding period of the respondents for investments in Stock Market are as shown in Table 1.

**Table 1 : Stock Holding Period of the Respondents**

Average Holding Period	Number of Respondents	Percentage of Respondents
Momentary	2	00.87
Weekly	4	01.73
Monthly	29	12.55
1 month to 3 months	62	26.84
3 months to 6 months	46	19.91
6 months to 1 year	59	25.54
1 year to 3 years	25	10.82
3 to 5 years	4	01.73
<b>Total</b>	<b>231</b>	<b>100.00</b>

An enquiry about the number of stocks in their portfolio shows that 22.08% of the respondents have upto 10 stocks in their portfolio whereas 29.87% have 11 to 20 stocks. Only 29% and 16.45% invests in 21-30 stocks and more than 30 stocks respectively. 2.6% respondents do not keep information on their number of holdings.

Majority of the respondents buy and sell as per brokers advice and as per technical

analysis. They buy and sell in bullish market. 53.68% of the respondents buy stocks with low valuation and strong fundamentals while 53.25% accumulates shares on market corrections. 70.13% sells their investment when there is bad news affecting their investment while 39.82% sells when their return matches their expectation. 25.54% sell their investment when they are in need of fund. The buying and selling behavior of respondents is displayed in Table 2 and 3 respectively.

**Table 2 : Buying Decision of Respondents**

Ideal time to buy shares	Number of Respondents	Percentage of Respondents
When share price is rising (Bullish Market)	141	61.03
When share price is declining (Bearish market)	15	06.49
When fundamentals are very good (irrespective of price)	22	09.52
Strong fundamentals with share price near 52 weeks low	124	53.68
When Technical Analysis suggests to buy	113	48.92
Some buy recommendations (other than broker)	33	14.29
Buy as per broker's advice	144	62.34
Buy on market corrections	123	53.25

**Table 3 : Selling Decision of Respondents**

Ideal time to sell shares	Number of Respondents	Percentage of Respondents
When realized return matches expectation	92	39.82
Share price reaches its 52 weeks high	12	05.20
When there is bad news	162	70.13
When Technical Analysis suggests to sell	116	50.21
As per broker's advice	128	55.41
When fund is needed	59	25.54
In bearish market	6	02.60
In bullish market	171	74.03

71.43% of the respondents are more active and participates in stock market investments during bullish phase. While 25.54% are more active during bear phase only 3.03% are active irrespective of market phases. Table 2 and 3 above also shows that majority of the respondents buys and sells during bull phase when stock market moves in a positive direction. This possibly indicates the existence of 'ostrich effect' among the investors in India. The ostrich effect, defined by Karlsson et al. (2009), is the tendency of investors to monitor their investment more actively when the aggregate stock market is up than when it is down.

The responses related to firm specific attributes that may have a bearing on stock return is displayed in Table 4. The percentages of respondents who perceive that specific firm level attribute (like price earnings ratio) affects his return from stock market investment is displayed in the last column in Table 4. Reasons for suffering losses in stock market are shown in Table 5. Inefficient recommendations, wrong market timing and market meltdown after investment are the common reasons for suffering losses in stock market.

**Table 4 : Firm Specific Factors Affecting Stock Returns of the Respondents**

<b>Firm specific factors</b>	<b>Number of Respondents</b>	<b>Percentage of Respondents</b>
Price earnings ratio	178	77.05
Price to book value ratio	52	22.51
Size	82	35.50
Dividend	22	09.52
Leverage	37	16.02
Uniqueness	2	00.87
Earning per share	39	16.88
Disclosure level	106	45.88
Volatility of operating income	52	22.51
Past profitability (PBIT)	102	44.16
Group affiliation	40	17.32
Non debt tax shield	6	02.60
Price to Cash EPS ratio	63	27.27
International Listing	7	03.03
Growth opportunities	60	25.97
Fixed Asset ratio	8	03.46

**Table 5 : Reasons for Loss of the Respondents in Stock Market**

<b>Firm specific factors</b>	<b>Number of Respondents</b>	<b>Percentage of Respondents</b>
Wrong recommendation	96	41.56
Enter/exit at wrong time	137	59.31
Hit by scam	23	09.96
Lack of knowledge	18	07.79
Faced market meltdown immediately after investment	108	46.75

### 3.3 Hypothesis I: Relationship between General Profile of Respondents and Return from Stock Market

#### 3.3.1 Gender and Return from Stock Market

The hypothesis whether return from stock market is independent of gender is tested by using chi-square statistic and whether average stock return differs across gender of the respondents is tested by using analysis of variance (ANOVA). The cross tabulation between gender and stock

return is shown in Table 6, Chi-square statistic value of 1.726 ( $p$  value = 0.886) could not reject the null hypothesis of independence between gender of the respondents and their return from stock market within acceptable level of significance. F statistic value of 0.694 ( $p$  value = 0.406) from ANOVA is not significant and it could not be concluded that average stock return differs across gender of the respondents significantly. Therefore it may be suggested that return from stock market is independent of the gender of the investor.

**Table 6 : Cross Tabulation: Gender × Stock Return**

<b>Gender</b>	<b>Average Stock Return (%)</b>						<b>Total</b>
	00-05	05-10	10-15	15-20	20-25	Above 25	
Male	17	69	59	8	2	2	<b>157</b>
Female	8	37	24	4	1	0	<b>74</b>
<b>Total</b>	<b>25</b>	<b>106</b>	<b>83</b>	<b>12</b>	<b>3</b>	<b>2</b>	<b>231</b>

### 3.3.2 Educational Background of the Respondents and Return from Stock Market

The hypothesis whether return from stock market is independent of educational background is tested using chi-square statistic and whether average stock return differs across educational background of the respondents is tested using analysis of variance (ANOVA). The cross tabulation between educational background and stock return is shown in Table 7. Chi-square statistic value of

42.624 ( $p$  value = 0.063) could not reject the null hypothesis of independence between educational background of the respondents and their return from stock market within acceptable level of significance. Also value of F statistic value of 0.221 ( $p$  value = 0.970) from ANOVA reveals that average stock returns do not differ significantly across educational background. Therefore it may be concluded that return from stock market is independent of the educational background of the investor.

**Table 7 : Cross Tabulation: Education × Stock Return**

Education	Average Stock Return (%)						Total
	00-05	05-10	10-15	15-20	20-25	Above 25	
Secondary	0	0	1	0	0	0	<b>1</b>
Higher Secondary	3	15	10	0	0	1	<b>29</b>
Graduates	11	19	14	8	0	0	<b>52</b>
Post Graduation (Non professional)	3	20	9	2	2	0	<b>36</b>
Professional Qualification	7	36	32	2	0	1	<b>78</b>
Financial Market related diploma	1	13	15	0	1	0	<b>30</b>
Ph. D.	0	3	2	0	0	0	<b>5</b>
<b>Total</b>	<b>25</b>	<b>106</b>	<b>83</b>	<b>12</b>	<b>3</b>	<b>2</b>	<b>231</b>

### 3.3.3 Source of Income and Return from Stock Market

The hypothesis whether return from stock market is independent of source of income

is tested using chi-square statistic. Additionally whether average stock return differs significantly among respondents with various sources of

income is tested using analysis of variance (ANOVA). The cross tabulation between source of income and stock return, chi-square test result and results of ANOVA are shown in Table 8. Chi-square statistic value of 24.469 (p value = 0.492) could not reject the null hypothesis of independence between source of income of the respondents and their return from

stock market within acceptable level of significance and F statistic value of 0.892 (p value = 0.487) from ANOVA is not significant indicating that average stock returns do not vary significantly among investors with various sources of income. Therefore it may be suggested that return from stock market is independent of the source of income of the investor.

**Table 8 : Cross Tabulation: Source of Income × Stock Return**

Source of Income	Average Stock Return (%)						Total
	00-05	05-10	10-15	15-20	20-25	Above 25	
Salary	15	59	46	7	2	1	<b>130</b>
Professional fee	6	25	21	2	0	0	<b>54</b>
Business	4	21	15	2	1	1	<b>44</b>
Pension	0	1	0	0	0	0	<b>1</b>
Dividend	0	0	1	0	0	0	<b>1</b>
Others	0	0	0	1	0	0	<b>1</b>
<b>Total</b>	<b>25</b>	<b>106</b>	<b>83</b>	<b>12</b>	<b>3</b>	<b>2</b>	<b>231</b>

### 3.3.4 Income Level and Return from Stock Market

The null hypothesis that return from stock market and level of income of the investors are independent is tested using chi-square statistic and whether average stock return differs on the basis of level of income is tested using analysis of variance (ANOVA). The cross tabulation between level of income and stock return, chi-square test result and results of ANOVA are shown in Table 9. Significant chi-square statistic value of 74.956 (p value = 0.000) leads to rejection of the null

hypothesis of independence between monthly income of the respondents and their return from stock market indicating return from stock market may depend on the income level of the investors. Additionally, findings from analysis of variance (ANOVA) along with significant F statistic value 7.394 (p value = 0.000) suggests that average stock returns may differ significantly among income levels of the investors. Therefore it may be suggested that return from stock market is not independent of the level of income of the investor.

**Table 9 : Cross Tabulation: Monthly Income × Stock Return**

Monthly Income (Rs.)	Average Stock Return (%)						Total
	00-05	05-10	10-15	15-20	20-25	Above 25	
0-10000	0	2	1	1	0	0	<b>4</b>
10001-20000	3	6	7	2	0	0	<b>18</b>
20001-30000	6	43	19	1	0	0	<b>69</b>
30001-50000	12	46	38	0	0	0	<b>96</b>
50001-100000	4	8	13	5	3	2	<b>35</b>
Above 100000	0	1	5	3	0	0	<b>9</b>
<b>Total</b>	<b>25</b>	<b>106</b>	<b>83</b>	<b>12</b>	<b>3</b>	<b>2</b>	<b>231</b>

### 3.4 Other Hypotheses

The following other hypotheses were tested using the primary data:

- **Hypothesis II:** The risk perceptions of Indian investors are not related to the total risk of a share as well as to the systematic risk.
- **Hypothesis III:** Return from stock market is independent of firm specific attributes.
- **Hypothesis IV:** Expected return is independent of actual return.
- **Hypothesis V:** Expected return is independent of choice of benchmark.

#### 3.4.1 Hypothesis II: The Risk Perceptions of Indian Investors are not related to the Total Risk of a share as well as to the Systematic Risk.

A part of the questionnaire were designed for a subjective rating of the perceived risk of a list of about 130 shares using a scale of one (low) to nine (high). The 130 shares for which ratings are sought were selected by including only those shares that were well known and widely followed. These are defined to be shares for which at least three stockbrokers' or analysts' forecasts were available.

**Table 10 : Correlation of Risk Ratings with Beta and Variance**

	<b>RATING</b>	<b>BETA</b>	<b>VARIANCE</b>
<b>RATING</b>	1.000000 --		
<b>BETA</b>	0.304* (0.0118)	1.000000 --	
<b>VARIANCE</b>	0.590** (0.0000)	0.424** (0.0003)	1.000000 --

The figures in parentheses are the respective p values.

\*. Correlation is significant at the 0.05 level

\*\*. Correlation is significant at the 0.01 level

The mean risk rating of the respondents was calculated for each share. These were correlated with betas estimated using S&PCNX500 index as market proxy and with the variance of returns. The results are summarized in Table 10.

The relationship (correlation) between the risk ratings and beta was weak (0.30) but significant at 5% level. There was a high (0.59) and significant (at 1% level) positive correlation between risk ratings and variance. It appears that possibly investors are more concerned with total risk (variance) than with the systematic risk as measured by beta. However correlation of 0.30 between perceived risk of the respondents and beta is surely not negligible and since this is significant, investors possibly pay some attention to beta as well but their perceived risk is better estimated by the variance of the return.

The significance of the association between perceived risk and variance appears to reflect the widespread adoption of a fundamentalist approach to risk assessment, an approach that was

clearly highlighted in the exploratory interviews conducted and in the literature (Lovell-Green et al. 1986).

The proposition that the risk perceptions of Indian investors are more closely related to the total risk of a share than to the systematic risk is therefore accepted.

### **3.4.2 Hypothesis III: Returns from Stock Market are Independent of Firm Specific Attributes.**

The null hypothesis that return and individual company attributes are independent is tested using non parametric Chi-square test and the results are displayed in Table 11. The null hypothesis was rejected in cases of price earnings ratio, price to book value ratio, leverage, at 5% level of significance and price to cash EPS ratio at below 10% level of significance. Therefore investors believe that three relative valuation ratios like price earning ratio, price to book value ratio, price to cash EPS ratio and leverage are important factors and stock returns may not be independent of them.

**Table 11 : Test of Independence of Firm Specific Attributes and Stock Returns**

<b>Firm Specific Factors</b>	<b>Chi-square</b>	<b>p-valu</b>
Return×Price earnings ratio	10.965605	0.042066
Return×Price to book value ratio	12.165792	0.032585
Return×Size	5.697532	0.336771
Return×Dividend	7.178148	0.207725
Return×Leverage	11.257603	0.046505
Return×Uniqueness	9.095314	0.105322
Return×Earnings per share	6.877348	0.229923
Return× Disclosure Level	3.682947	0.595904
Return× Volatility of operating income	2.323407	0.802823
Return×Past profitability (PBIT)	2.982567	0.702674
Return×Group affiliation	7.783072	0.168603
Return× Non debt tax shield	9.099334	0.105167
Return×Price to Cash EPS ratio	9.303560	0.097552
Return×International Listing	2.755756	0.737578
Return×Growth opportunities	8.979286	0.109893
Return×Fixed Asset ratio	1.405379	0.923724

### 3.4.3 Hypothesis IV: Expected Return is Independent of Actual Return.

Return expectation is one of the central determinants of investor behavior (Nasic and Weber, 2010; Dominitz and Manski, 2011). However how individual investors form return expectations is often debated. He and Shen (2010) and Hoffman and Post (2012) suggested investors'

expectations are positively related to past returns. The null hypothesis that realized return and expected returns are independent is tested using Chi-square test and the findings are tabulated in Table 12. The null hypothesis is rejected at 1% level of significance. It suggests that realized return could be one of the drivers of individual return expectations.

**Table 12 : Cross Tabulation: Actual Return × Expected Return**

<b>Actual Return</b>	<b>Expected Return</b>				<b>Total</b>
	Actual return much beyond expectation	Actual return beyond expectation	Actual return as per expectation	Actual return below expectation	
00 - 05%	4	10	10	1	<b>25</b>
05 - 10%	4	47	53	2	<b>106</b>
10 - 15%	7	26	48	2	<b>83</b>
15 - 20%	6	3	2	1	<b>12</b>
20 - 25%	2	0	1	0	<b>3</b>
Above 25%	1	0	1	0	<b>2</b>
<b>Total</b>	<b>24</b>	<b>86</b>	<b>115</b>	<b>6</b>	<b>231</b>

Pearson Chi-Square = 46.852 (p-value = 0.000)

#### **3.4.4 Hypothesis V: Expected Return is Independent of Choice of Benchmark.**

Investors often make their return expectation on the basis of some benchmark, be it some index return or any model predicting returns. This is most common in case of portfolio investments. Whether expected return is independent of the choice of benchmark is tested using Chi-square test and the findings are

tabulated in Table 13. In other words, whether investor behavior conforms to any asset pricing model or any other benchmark (e.g. index returns) is explored given that return expectation is a determinant of investor behavior. The expected return was found to be independent of choice of benchmark used and investor behavior may not conform to any asset pricing model.

**Table 13 : Cross Tabulation: Expected Return × Benchmark**

Benchmark	Expected Return				Total
	Actual return much beyond expectation	Actual return beyond expectation	Actual return as per expectation	Actual return below expectation	
Suggestions	7	18	23	1	<b>49</b>
NIFTY return	6	39	52	2	<b>99</b>
SENSEX return	7	20	32	2	<b>61</b>
Other index return	0	1	1	0	<b>2</b>
Any model	1	0	0	0	<b>1</b>
Others	3	8	7	1	<b>19</b>
<b>Total</b>	<b>24</b>	<b>86</b>	<b>115</b>	<b>6</b>	<b>231</b>

Pearson Chi-Square = 14.419 (p-value = 0.494)

#### 4. Conclusion

The study on behaviour of investors shows that average stock return do not differ across genders, educational background or sources of income. However study supported the idea that average stock return may depend on the income level of the investors. The risk perceptions of Indian investors are found to be more closely related to the total risk of a share than to the systematic risk. Possibly most of the investors are more concerned with total risk than with the systematic risk as measured by beta. However correlation between perceived risk and beta is surely not negligible and since this is significant, investors possibly pay some attention to beta as well but their perceived risk is better estimated by the variance of the

return. The significance of the association between perceived risk and variance appears to reflect the widespread adoption of a fundamentalist approach to risk assessment, an approach that was clearly highlighted in the exploratory interviews conducted and in the literature (Lovell-Green et al. 1986).

Price-Earnings ratio, Price to Book value ratio, Price to Cash Earnings per Share and Leverage are company specific factors that investors believe to be influential on stock returns.

The study also reveals that realized returns and expected returns are not independent, and in line with findings of Hoffman and Post (2012) the possibility of investors return expectation being

driven by realized returns may not be ruled out. A glance at the mutual funds industry shows that past fund returns are a powerful driver of fund flows (Sirri and Tufano, 1998). It is argued that investors form expectation based on past returns and accordingly channelize their funds for investment or divestment. It is our common experience that mutual funds often advertises their past performances of schemes to attract investors which probably indicate that they also believe that past returns will drive return expectations of investors and they would invest in the fund.

Return expectation is found to be independent of choice of benchmark indicating that investor behavior may not conform to any asset pricing model. This has consequences for equilibrium asset pricing models like CAPM whose validity depends on certain investor behaviour.

The study also shows that investors are more likely to actively participate in rising stock market than in a falling market, a behaviour that possibly indicates the existence of 'ostrich effect'. This suggests that when market rises, more investors participate in the market that improves stock market liquidity through higher trading volume. This is also evident from our observations during crisis and scams that when market declines followed by decrease in liquidity due to lower trading volume resulting from lesser participation by the investors.

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