Research Paper

EMOTIONAL STATES AND TRADING PERFORMANCE- WITH SPECIAL REFERENCE TO STOCK MARKET INVESTMENTS

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ABSTRACT

Traditional finance, derived from neo-classical economic theory, assumes investors are rational, efficient information processors, and markets are efficient. In contrast, the relatively new school of behavioural finance borrows from the psychologists to argue that we are inherently prone to serious judgemental biases, and, as a result, often make poor investment decisions. Implicitly, due to our cognitive limitations, market prices deviate from fundamental values. However, the key role of the emotions, and the associated unconscious needs, fantasies and fears we all have, in driving investor behaviour has been largely ignored by financial researchers to date. The objective of this research is to study the emotions that play in the trading and investment activity of the investors and to analyze the impact of emotions on the stock market investments. The data was collected extensively from Coimbatore district in Tamil Nadu identifying investors through share broker officers and financial institutions. The relationship between the trader's ability to regulate emotions and the investor experience are analyzed through the statistical tool of nominal regression. Factor analysis is applied to analyze and measure the illusion of control and the measurement of trading performance of the investors. The factor loadings account for 78.958 percent of the total variance. Hence, the emotions account for unrealistic perceptions of control beliefs are inversely proportional with the trading performance.

KEY WORDS: *illusion of control, emotional finance, judgemental biases, unrealistic perceptions*

1. INTRODUCTION

The dynamics of emotions and human unconscious have been proved to affect human behavior. There is a growing literature that examines this field of psychology in relation to financial markets. The objective of this special issue is to bring together current theoretical and empirical research on the issues highlighted above and investigate their implications with regard to the finance and investments industry. During the past years the equity markets have been characterized by increasing volatility and fluctuations. The ever more integrated financial markets are increasingly exposed to macroeconomic shocks which affect markets on a global scale. From an investor's point of view, the vulnerability of markets has lead to increased uncertainty and unpredictability, as market conditions cannot always be judged with the help of standard financial measures and tools.

Emotional finance is a new area in finance and is at an early stage of its development as a coherent discipline. It aims to provide an understanding of financial market behavior and investment processes by formally recognizing the role unconscious needs and fears play in all investment activity. Trading is skilled work, but good traders often lose money and poor traders can get lucky. There is a lot of noise in the relationship between skill and performance. This can be a source of enormous performance anxiety for traders.

Financial markets are essentially social settings where individuals engage with each other to set asset prices, based on estimates of future value. This activity depends on making judgments about available information to resolve two different orders of uncertainty; that caused by unavoidable information asymmetries at the moment of decision-making, and that determined by the fact the future is inherently unknowable. By understanding the emotions in human behavior and psychological mechanisms involved in financial decision-making, standard finance models may be improved to better reflect and explain the reality in today's evolving markets.

The equation '*investment = uncertainty = anxiety*' is a key contribution of emotional finance... The investor enters into an emotional attachment with something that can easily let him down." [1]

2. STATEMENT OF THE PROBLEM

From an investor's point of view, the vulnerability of markets has lead to increased uncertainty and unpredictability, as market conditions cannot always be judged with the help of standard financial measures and tools. Market participants have for a long time relied on the notion of efficient markets and rational investor behavior when making financial decisions. Given that losing money would not have put me in any physical peril, the anguish was purely psychic – it felt (especially early in my career) like a mark of social failure to lose[2]. During the past several years the equity markets have been characterized by increasing volatility and fluctuations. However, the idea of fully rational investors who always maximize their utility and demonstrate perfect self-control is becoming inadequate. The purpose of the study is to describe and conduct a research on traders ability to regulate emotions and to measure the illusions of control and trading performance the towards stock market investments.

3. OBJECTIVES OF THE STUDY

- To study on traders ability to regulate emotions while trading

- To measure the illusions of control and trading performance

4. REVIEW OF LITERATURE

The shift of emotional Finance led researchers to examine the emotional traits of investors and how they influence their investment-decision making strategies in various investment avenues. There has been substantial theoretical as well as applied evidence about the explanatory facets of investors' perception and investment decision making. Over the last two decades, investor behavior has been put under the microscope for analyzing their decision making and the factors that influences their investment behavior.

Dr.Adrian mitroi (2014), University of Târgu Jiu, Economy Series, Special Issue/2014-Information society and sustainable development, Applied behavioral finance in a post-crisis environment: Emotional finance, In the pursuit of understanding the behavior of the market player, the basic argument relays on the supposition that the risk appetite increases exactly at the worst moment - when the capacity to assume additional risk decreases significantly. **Shulman (2014),** views what happened through the lens of regulators' and investors' collusion with the narcissism of the leaders of the major investment banks who were treated as exempt from normal rules and laws.

Tuckett, (2011), (pp. 65–70) describes the process of basic assumption group operation in terms of its members engaging collectively in group feel to stress how feelings generated in the group's processes influence group thinking. A more familiar term for such group behaviors is groupthink (Janis, 1982).

SushantNagpal and B S Bodla, (2009), observed that the individuals may be equal in all aspects, but their financial planning needs are very different. Demographics alone no longer suffice as the basis of segmentation of individual investors. It is by using lifestyles or psychographics along with demographics that synergism between investors can be generated. It was studied that the modern investor is a mature and adequately groomed person. The study concludes that investors' lifestyle predominantly decides the risk taking capacity of investors.

Dalbarin (2001), a financial-services research firm, released a study entitled "Quantitative Analysis of Investor Behaviour", which concluded that average investors fail to achieve market-index returns. It found

that in the 17-year period to December 2000, the S&P 500 returned an average of 16.29% per year, while the typical equity investor achieved only 5.32% for the same period - a startling 9% difference! It also found that during the same period, the average fixed-income investor earned only a 6.08% return per year, while the long-term Government Bond Index reaped 11.83%.

5. RESEARCH METHODOLOGY

The study is mainly based on primary data which was collected through a well structured questionnaire. The data was collected extensively from Coimbatore district in Tamil Nadu identifying investors through share broker officers and financial institutions. Convenience sampling method is used for data collection. Secondary data has been collected through various websites, research articles published in various online journals, national and international publications (refer to references) by visiting well reputed institution libraries. The statistical tools used are factor analysis and Nominal regression.

6.ANALYSIS AND INTERPRETATION

1. The Experience of the Investors and traders ability to regulate emotions:

The relationship between the trader's ability to regulate emotions and the investor experience are analyzed through the statistical tool of nominal regression. The association between the experience and the traders' ability to regulate emotions are tested with the following hypothesis.

H0: There is no significance difference between the experience and the trader's ability to regulate emotions.

Table: 1(a) shows the relationship between the investors experience and the traders' ability to regulate emotions

		N	Marginal Percentage
For how long you have been investing in capital market	2-3 yrs	44	8.9%
	4-6yrs	158	32.0%
	7-9yrs	134	27.2%
	10 yrs and above	157	31.8%
Traders ability to regulate their emotional responses with experience	disagree	15	3.0%
	sightly disagree	103	20.9%
	neutral	143	29.0%
	agree	91	18.5%
	strongly agree	141	28.6%
Do traders have learnt any strategies for emotional regulation	disagree	55	11.2%
	sightly disagree	68	13.8%
	neutral	106	21.5%
	agree	148	30.0%
	strongly agree	116	23.5%
Do you have avoided the situation which produces negative emotions	disagree	59	12.0%
	sightly disagree	114	23.1%
	neutral	113	22.9%
	agree	136	27.6%
	strongly agree	71	14.4%
Do you feel the intervention of mentors or managers in the trading career	sightly disagree	38	7.7%
	neutral	168	34.1%
	agree	243	49.3%
	strongly agree	44	8.9%
Do you feel the importance of having mentor or network to talk things thoroughly	sightly disagree	38	7.7%
	neutral	168	34.1%
	agree	243	49.3%
	strongly agree	44	8.9%
Valid		520	100.0%

From the above table:1(a), the marginal percentage of investors having the experience of 4-6 years is 31.4% , which means out of total respondents, 158 respondents fall in this experience group. This is followed by the marginal percentage of 31.2% (157 respondents) for the investor experience of 10 yrs and above, marginal percentage of 28.6%(144 respondents) for the investor experience of 7-9 yrs and the marginal percentage of 8.7%(44 respondents) for investor experience of 1-3yrs

Table: 1(b) Table showing Model fitting Information

Model Fitting Information				
Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	1.125E3			
Final	224.068	900.712	45	.000

This is a likelihood ratio test of our model (Final) against one in which all the parameter coefficients are 0 (Null). The chi-square statistic is the difference between the -2 log-likelihoods of the Null and Final models. Since the significance level of the test is less than 0.05, you can conclude the Final model is outperforming the Null.

Table:1(c)- Table showing Likelihood Ratio Tests

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	2.241E2[a]	.000	0	.
Traders ability to regulate their emotional responses with experience	548.423	324.355	12	.000
Do traders have learnt any strategies for emotional regulation	468.953	244.885	12	.000
Do you have avoided the situation which produces negative emotions	531.626	307.558	12	.000
Do you feel the intervention of mentors or managers in the trading career	2.241E2[a]	.000	0	.
Do you feel the importance of having mentor or network to talk things thoroughly	2.241E2[a]	.000	0	.

The likelihood ratio tests check the contribution of each effect to the model. For each effect, the -2 log-likelihood is computed for the reduced model; that is, a model without the effect. The chi-square statistic is the difference between the -2 log-likelihoods of the reduced model from this table and the Final model reported in the model fitting information table. If the significance of the test is small (less than 0.05) then the effect contributes to the model. . Hence, the p-value is less than the level of significance i.e. .P<0.05, we reject null hypothesis.

Hence it is concluded from the Table: 1(c) showing likelihood ratio tests, there is association between the experience of the investors and the emotion regulations handled by the investors.

2. Measurement of Illusion of control and the trading performance of the investors:

With the high volatility of stock markets and the information ambiguity, the huge urge of outperforming consistently by the investors, this presence of emotional factor in the trading process and the selection of optimal portfolio make the investors to go wrong. In this way, all judgments regarding trading are made within the state of mind. The understanding of these emotional states of human mind would help the

investors in making better judgments and enhances decision making process.

Factor analysis is based on the correlation matrix of the variables involved, and correlations usually need a large sample size before they stabilize. Hence the factor analysis is applied to analyze and measure the illusion of control and the measurement of trading performance of the investors

Table: 2(a) KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.777
Bartlett's Test of Sphericity	Approx. Chi-Square	1.768E3
	df	66
	Sig.	.000

KMO and Barlett's test of sphericity is used to test whether the data are statistically significant or not. The approximate chi-square statistic is 1.768 has a significant value of .000. With the value of test statistic and associated significance level, it shows that there exists a high relationship among variables (Not >0.05)

Table: 2(b)-showing total variance

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.188	26.564	26.564	3.188	26.564	26.564	3.158	26.316	26.316
2	2.566	21.379	47.943	2.566	21.379	47.943	2.302	19.183	45.499
3	1.642	13.683	61.626	1.642	13.683	61.626	1.875	15.629	61.127
4	1.056	8.800	70.426	1.056	8.800	70.426	1.100	9.168	70.295
5	1.024	8.532	78.958	1.024	8.532	78.958	1.039	8.662	78.958
6	.843	7.027	85.984						
7	.651	5.423	91.407						
8	.581	4.841	96.248						
9	.450	3.752	100.000						
10	3.353E-16	2.794E-15	100.000						
11	7.799E-17	6.499E-16	100.000						
12	-6.331E-17	-5.276E-16	100.000						
Extraction Method: Principal Component Analysis.									

From the above table it is observed that the labeled "initial egen values" gives the values for the factor which indicates the "total variance" attributed to the factor. From the extraction sum of squared loadings, it is known that the factor 1 is accounted for a variance of 3.188 per cent, factor II is accounted for 2.566 per cent, factor III accounted for a variance of 1.642 percent, factor IV accounted for a variance of 1.056 percent and the factor V accounted for the variance of 1.024 percent. The five components extracted accounted for a total cumulative variance of 78.958 per cent.

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Table: 2(c)-showing Rotated component matrix

Rotated Component Matrix[a]					
Investor moves	**Component**				
	1	**2**	**3**	**4**	**5**
I have complete knowledge of the stock market	-.434	.070	-.391	.309	.275
Do investor find it more difficult to regulate their responses to the market when prices were more volatile	.008	.015	.007	-.029	**.972**
Do investors experience help in trading ability to regulate emotional responses and experience	-.102	-.331	**.646**	-.273	-.061
Do the investor analyzed about the fear rate variability while trading	-.065	-.037	**.822**	.064	.075
As a traders you bring together the feeling about the market with other sources of information	.011	-.149	-.671	-.310	.056
I often blindly intimate decision of others while making investment decisions	-.028	**.978**	-.005	-.034	.027
I often consolidate the information that majority of investors focus on as a basis of trading in the stock market	**.992**	-.013	-.059	.000	.007
Do you be careless after a series of winning performance	-.028	**.978**	-.005	-.034	.027
I don't buy shares today if it is was priced cheap last year	**.992**	-.013	-.059	.000	.007
I don't sell the stock today if it was priced higher in the past	**.992**	-.013	-.059	.000	.007
I will hold on to the stock that has fallen in multiple sessions thinking that it will go up in the next session	-.011	-.022	.093	**.860**	-.022
I am more comfortable investing in shares of local cos than foreign cos	.011	-.500	.401	-.297	.066
Extraction Method: Principal Component Analysis.					
Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 5 iterations.					

Factor loadings: Factor loadings is a simple correlation between the variables and the factors. The principal component analysis reduces 12 correlated factors to five dimensions (factor loadings) consisting of 3 uncorrelated factors. The components showing loading 0.05 and above are considered for factor grouping and it is shown in the table below.

Table: 2(d)-showing factor loadings

Component No.	Grouping of Investor moves	Factor loadings
1	I often consolidate the information that majority of investors focus on as a basis of trading in the stock market	Emotional conflict
	I don't buy shares today if it is was priced cheap last year	
	I don't sell the stock today if it was priced higher in the past	
2	I often blindly intimate decision of others while making investment decisions	Human excitement
	Do you be careless after a series of winning performance	
3	Do investors experience help in trading ability to regulate emotional responses and experience	Human anxiety
	Do the investor analyzed about the fear rate variability while trading	
4	I will hold on to the stock that has fallen in multiple sessions thinking that it will go up in the next session	Over confidence
5	Do investor find it more difficult to regulate their responses to the market when prices were more volatile	Emotional regulation

Factor 1 has significant loadings for three dimensions namely I often consolidate the information that majority of investors focus on as a basis of trading in the stock market, I don't buy shares today if it is was priced cheap last year, I don't sell the stock today if it was priced higher in the past together constituting 'emotional conflict'. Factor 2 has significant loading for two dimensions namely I often blindly intimate decision of others while making investment decisions, Do you be careless after a series of winning performance together constituting 'human excitement'. Factor 3 has significant loading for two dimensions namely Do investors experience help in trading ability to regulate emotional responses and experience, Do the investor analyzed about the fear rate variability while trading together constituting 'Human anxiety'. Factor 4 has significant loading for a dimension namely I will hold on to the stock that has fallen in multiple sessions thinking that it will go up in the next session as 'over confidence'. Factor 5 has significant loading for a dimension namely Do investor find it more difficult to regulate their responses to the market when prices were more volatile as 'emotional regulation'.

The factor 'emotional conflict' is accounted for 26.316 of the total variance. 'human excitement' is accounted for 19.183 of total variance, 'Human anxiety' is accounted for 15.629 of the total variance, 'over confidence' is accounted for 9.168 of the total variance and finally 'emotional regulation' is accounted for 8.662 of the total variance.

It is concluded that with the help of factor analysis, the illusory control beliefs and trading performance are measured on the factors loadings of emotions in trading. The factor loadings account for 78.958 percent of the total variance. Hence, the emotions account for unrealistic perceptions of control beliefs are inversely proportional with the trading performance.

7. FINDINGS AND SUGGESSTIONS

1. The marginal percentage of investors having the experience of 4-6 years is 31.4% , which means out of total respondents, 158 respondents fall in this experience group. This is followed by the marginal percentage of 31.2% (157 respondents) for the investor experience of 10 yrs and above, marginal percentage of 28.6%(144 respondents) for the investor experience of 7-9 yrs and the marginal percentage of 8.7%(44 respondents) for investor experience of 1-3yrs.

2. The p-value is less than the level of significance i.e. <0.05, hence it is concluded from the table: 1(c) showing likelihood ratio tests, there is association between the experience of the investors and the emotion regulations handled by the investors.

3. It is observed that the labeled "initial egen values" gives the values for the factor which indicates the "total variance" attributed to the factor loadings. . The factor loadings account for 78.958 percent of the total variance.

4. Factor 1 has significant loadings for three dimensions namely I often consolidate the information that majority of investors focus on as a basis of trading in the stock market, I don't buy shares today if it is was priced cheap last year, I don't sell the stock today if it was priced higher in the past together constituting 'emotional conflict'.

5. Factor 5 has significant loading for a dimension namely Do investor find it more difficult to regulate their responses to the market when prices were more volatile as 'emotional regulation'.

8. CONCLUSIONS

Less experienced traders showed stronger arousal in response to short-term market fluctuations than more experienced traders, indicating that emotions are particularly important in relatively novel situations that require cognitive effort. Hence, the emotions account for unrealistic perceptions of control beliefs are inversely proportional with the trading performance. Illusions of control are more common in circumstances of stress. As trading involves continually making choices but more importantly requires close focus on a particular type of instrument or market. Traders are often highly identified with the instruments or markets in their area of expertise. The possible ways may be to avoid the stress full investment arenas, taking good sleep and traders are highly motivated to establish causal relationships between information they hold and market movements. This could significantly improve the psychological 'health' of market participants, and the quality of investment decisions.

9. SCOPE OF FUTURE RESEARCH

Further researches shall take notice of other factors affecting investment performance such as investors' behavior, perception of risk, etc. They shall also investigate other factors affecting positive and negative mood, particularly the effects of neuroticism on the outcome of investment performance

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Notes

[1] New concept of emotional finance which was first introduced in Richard's inaugural public lecture as the Martin Currie Professor of Finance and Investment at the University of Edinburgh in May 2007 by: Professor Richard Taffler, Professor David Tuckett.

[2] Emotional finance: Anxiety, adrenaline and automation, Posted on 11 July, 2016 by Kevin Rodgers