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Analysing the patterns between routine fluctuations in NIFTY and exchange rate and mood of investors and exporters

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Abstract
The present study is an attempt identify patterns between prospects for financial gain and mood of individuals. The study then illustrates loss aversion. It becomes imperative to know whether routine fluctuations in volatile instruments like exchange rate and stock exchange index cause significant changes in the mood of stakeholders. This becomes all the more essential as exporting business and financial markets have begun to flourish over the past few years with the advent of globalisation and liberalisation. The study is performed on 2 groups - investors in the stock market and exporters. The paper further aims to compare the strength of the relationship for groups defined on the basis of their stake in the process- total investment for investors and capital employed for exporting firms. Changes in prospects for financial gains are measured using changes in Nifty (stock market index of National Stock Exchange) for investors and US dollar-INR exchange rate for exporting firms. A mood is an emotional state. Moods differ from emotions, feelings or affects in that they are, less specific, less intense, last for shorter durations and less likely to be triggered by a particular stimulus or event. The Brief Mood Introspective Scale was used to measure mood in the pleasant-unpleasant spectrum. The study indicates that day-to-day changes in volatile measures of stock market index and exchange rate affect mood of the stakeholders. Also, the study attempts to illustrate loss aversion by showing that the displeasure accompanying unfavourable changes in NIFTY/exchange rate (adjusted for magnitude of change) was greater than the pleasure accompanying favourable changes in NIFTY/exchange rate (adjusted for magnitude change). Finally we present our conclusions to question the rationality of the mood variations of stock market investors.

Keywords: mood, prospects for financial gain, exchange rate, Nifty

Introduction

The primary aim of investing and entrepreneurial activities is to ensure financial stability and progress. As such, prospects for financial growth are closely related to the mood of financial stakeholders. A question arises that whether highly volatile and unpredictable measures such as stock market index and currency exchange rate on a particular day, which can possibly indicate financial prospects but yet fail to provide definitive and consistent answers by virtue of their volatility, significantly affect mood or not.

We considered 2 categories of financial stakeholders - stock market investors and exporters. NIFTY (stock market index of National Stock Exchange, India) was used as a volatile indicator of financial prospects while USD-INR (United States Dollar-Indian Rupee exchange rate was used for exporting firms).

Mood is a very fluid and short-term trend. Various experiences, conscious and subconscious associations and perceptions can drastically alter mood. In fact, often times the particular orientation of the mood cannot be attributed to a single, tangible reason. This makes us consider that even relatively insignificant changes in volatile indicators of financial prospects could orient the mood of financial stakeholders.

Although previous attempts have been made to show the effects of gains in national income on temporary happiness (Tella, MacCulloch, Oswald, 2011). We could not find any study that attempts to establish relationships between mood and volatile indicators of financial prospects at the microeconomic level. Also, we could not find any study that attempts to offer a comparative analysis of accompanying pleasure and displeasure caused by the change in exchange rate/ stock market index.

We also believe that it is imperative to understand and compare the relationship for individuals having different investment/capital involvement in the proposed financial activities. For this purpose, we study the relationship for investors with total shares worth below 10,00,000 INR and above 10,00,000 INR (as per purchase price). We also compare the relationship for exporters with total capital employment of below 2,00,00,000 INR and those with a capital employment of above 2,50,00,000 INR.
Also, through this study, we attempt to understand if favourable or unfavourable changes in financial prospects would cause pleasure/displeasure of significant magnitudes or not. That is, we wish to understand if the mood of financial stakeholders is similarly affected by potential gain and loss or not.

2. Review of Literature

Our study is novel insofar and we could not find any research works that attempt to answer our research questions. However, studies relating macroeconomic happiness and income, well-being and stock exchange indices etc. have been conducted over the past few years.
Tella, MacCulloch, Oswald (2011) illustrated that increase in national income was related to short-term happiness. However, this study was conducted on macroeconomic level and considered actual gains instead of potential gains. Murgea and Reisz (2013) [2] show the negative relationship between stock market volatility and well-being. However, both volatility of stock market and well-being are long-term measures, whereas we attempt to address the patterns between day-to-day stock market index fluctuations and the mood of the investors.
Kahneman and Tversky (1984) [3] first demonstrated loss aversion. It refers to people’s tendency to strongly prefer avoiding losses to acquiring gains. Kahneman and Tversky (1992) [4] further illustrated that losses are twice as strong as gains in terms of psychological perception. Loss aversion has become a key concept in behavioural economics. In this study, we attempt to illustrate the effects of loss aversion on the mood of financial stakeholders.

3. Hypothesis of the Study

Relationship between mood and financial prospects

The categories of financial stakeholders that we have chosen- stock market investors and exporters - heavily rely on changes in stock market index and currency exchange rate for their financial stability and progress. As such, we believe that day-to-day fluctuations in such volatile measures do influence their mood. An increase in stock market index is a favourable change as it signals an increase in the value of securities on an average, while a decrease in stock exchange index is an unfavourable change. On the other hand, a decrease in currency exchange rate is a favourable change for exporters as it indicates a decrease in the value of the domestic currency as compared to other currencies and thereby increases exports. An increase in currency exchange rate is an unfavourable change for exporters. Thus, we formulate the hypotheses-

H1*:* On an average, an increase in the stock market index was accompanied by an increase in the pleasure demonstrated by financial investors and vice versa.

H2*:* On an average, a decrease in the currency exchange rate was accompanied by an increase in the pleasure demonstrated by the exporters and vice versa.

Relationship patterns for sub-categories

We believe that individuals participating in financial ventures with a greater stake would be more affected by fluctuations in volatile financial cues. Thus, we divide the investors into 2 categories - those with investments worth less than 10,00,000 INR and those with investments greater than the amount (as per purchase value). Also, exporters were divided into 2 categories - those with a capital employed of an amount less than 2,50,00,000 INR and those with greater capital employed. This leads us to the following 2 hypotheses-

H3: On an average, financial investors with investments worth more than 10,00,000 INR showed greater increase in pleasure upon an increase in the stock market index than those with investments worth less than 10,00,000 INR. Also, they showed greater displeasure on an average upon a decrease in the stock market index than those with investments worth less than 10,00,000 INR.

H4: On an average, exporters with a capital employed of above 2,50,00,000 INR showed greater increase in pleasure upon an increase in the currency exchange rate than those with a capital employed worth more than 2,50,00,000 INR. Also, they show greater displeasure on an average upon an increase in the currency exchange rate than those with a capital employed worth more than 2,50,00,000 INR.

Directional Changes in the relationship

Loss Aversion is a concept that illustrates people’s tendency to prefer to strongly avoid losses to acquiring gains. As illustrated previously, Kahneman and Tversky (1984) [3] demonstrated this effect for the first time. Kahneman and Tversky (1992) [4] showed that losses are psychologically twice as powerful as gains. Thus, we believe that an unfavourable change (adjusted for magnitude of change) would lead to greater displeasure for investors than a favourable change (adjusted for magnitude). Thus, we form the following hypotheses-

H5: On an average, the displeasure showed by investors upon a decrease in stock market index (adjusted for magnitude of change) is greater than the pleasure demonstrated by investors upon an increase in the stock market index (adjusted for magnitude of change).

H6: On an average, the displeasure showed by exporters upon an increase in the currency exchange rate (adjusted for magnitude of change) is greater than the pleasure demonstrated by them upon a decrease in the currency exchange rate. (adjusted for magnitude of change).

4. Method

Participants

50 stock market investors and 30 exporters were surveyed. Of 50 investors, 25 had investments worth below 10,00,000 INR and 25 had investments above the value. Our stock-holding participants were investors and not speculators. Their responses were recorded daily from 19-21 October 2015. Of the 30exporters, 15 had employed a capital below 2,50,00,000 INR while the rest had employed a capital above 2,50,00,000 INR. Their responses were recorded daily from 20-22 October 2015.

Instruments

Mood (pleasant-unpleasant) Measurement

Mood was measured by using the Brief Mood Intensive Scale (Mayer & Gaschke, 2013). It consists of 16 adjectives to describe an individual's mood for eg. fed up, caring etc. Participants are supposed to mark the survey using the following criteria- XX (definitely do not feel), X(do not feel), V(slightly feel) and VV(definitely feel). The scale is then scored for a measure of pleasant-unpleasant mood. We used subtractive scoring. A total of 20 points can be attributed to pleasant and unpleasant adjectives to describe mood. The number of points attributed to the unpleasant adjectives is deducted from the number of points attributed to pleasant adjectives. Higher scores indicate higher pleasure.

Stock market index

We use Nifty as our stock market index. It is the National Stock Exchange of India's benchmark stock market index for Indian equity market. We traced the changes in Nifty on 16 October 2015, 19 October 2015 and 20 October 2015. We considered fluctuations of Nifty in such a short time bracket in order to avoid effects of any drastic circumstantial changes owing to a time gap on the mood of individuals.

Currency Exchange Rate

United States Dollar to Indian Rupee (USD-INR) Exchange Rate was traced for October 20-22 2015. We considered the daily fluctuations of the USD-INR exchange rate in such a short time bracket in order to avoid effects of any drastic circumstantial changes owing to a time gap on the mood of individuals.

5. Results

Table 1: Bmis Score for Participants

Date	Nifty Index*	Total Bims Score Avg.	< 10,00,000 Inr Bmis Score Avg.	> 10,00,000 Inr Bmis Score Avg.
16 October 2015	8238.15	12.12	12.28	11.96
19 October 2015	8275.05	12.32	12.4	12.24
20 October 2015	8261.65	11.8967	12.1539	11.64

***source:** "NSE - National Stock Exchange of India Ltd." *NSE - National Stock Exchange of India Ltd.* Web. 22 Oct. 2015."

TOTAL BIMS SCORE AVG.= Average BMIS score of all participants.

< 10,00,000 INR BMIS SCORE AVG= Average BMIS score of investors with total investments worth less than 10,00,000 INR (purchase value).

> 10,00,000 INR BMIS SCORE AVG= Average BMIS score of investors with total investments worth more than 10,00,000 INR (purchase value).

As per the table, when Nifty score increased from 8238.15 on 16 October 2015 to 8275.05 on 19 October 2015 (0.44792% increase), average BMIS score went up from 12.12 to 12.32 (1.6502% increase). Increase in BMIS scores indicates greater pleasure. On the other hand, when Nifty scores decreased from 8275.5 on 19 October 2015 to 8261.65 on 20 October 2015 (0.1674% decrease), average BMIS score went down from 12.32 to 11.8967 (3.4359% decrease). A decrease in BMIS score indicates greater displeasure. This illustrates *H1*.

For the same increase in Nifty from 16 October 2015 to 19 October 2015, the average BMIS score for investors with total stock worth less than 10,00,000 INR increased by 1.3072%, whereas the average scores for investors with stock worth more than 10,00,000 INR increased by 2.3411%. Thus, investors with stock worth more than 10,00,000 INR experienced greater pleasure upon an increase in stock exchange rate than those with stock worth less than 10,00,000 INR. On the other hand, for the same decrease in Nifty from 19 October 2015 to 20 October 2015, the average BMIS score for investors with financial instruments less more than 10,00,000 INR decreased by 1.9847%, whereas the average score for investors with financial assets worth more than 10,00,000 INR decreased by 4.9020%. Thus, investors with stock of more than 10,00,000 INR experienced greater displeasure upon the decrease in stock market index than did the other category. This demonstrates *H3*.

To calculate change in BMIS score adjusted for magnitude change of Nifty, we shall use the following formula-

Change in BMIS (adjusted)= Percentage change in BMIS/ Percentage change in Nifty

Thus, during the period of 16 October 2015 to 19 October 2015 the change in BMIS score (adjusted for change in Nifty) was 3.6843 (1.6502%/ 0.4479%) whereas the change in BMIS (adjusted for change in Nifty) from 19 October 2015 to 20 October 2015 was 20.5251 (3.4359%/0.1674%). Thus, participants experienced more displeasure upon the decrease in Nifty than the pleasure they experienced upon an increase in Nifty (adjusted for magnitude change). This illustrates *H5* (loss aversion).

Table 2: Bmis Score for Exporters

Date	Usd-Inr Rate (Rupee Value Of 1$)*	Total. Bmis Score Avg.	<2,50,00,000 Inr Bmis Score Avg.	>2,50,00,000 Inr Bmis Score Avg
20 October 2015	64.8908	12.0667	12.2	11.9333
21 October 2015	65.1513	11.7336	12	11.4667
22 October 2015	64.8815	11.8625	12.125	11.6

***source:** "Reserve Bank of India - Reference Rate Archive." Reserve Bank of India - Reference Rate Archive. Web. 23 Oct. 2015.

TOTAL. BMIS SCORE AVG.= Average BMIS score of all participants

<2,50,00,000 INR BMIS SCORE AVG= Average of BMIS scores of exporters with capital employed less than 2,50,00,000 INR.

>2,50,00,000 INR BMIS SCORE AVG=Average of BMIS scores of exporters with capital employed more than 2,50,00,000 INR.

As per the table, when exchange rate increased from 64.8908 on 20 October 2015 to 65.1513 on 21 October 2015 (0.4014% increase), average BMIS score went down from 12.0667 to 11.7336 (2.7605% decrease). Decrease in BMIS scores indicate greater displeasure. On the other hand, when USD-INR rates decreased from 65.1513 on 21 October 2015 to 64.8815on 22 October 2015 (0.4141% decrease), average BMIS score went up from 11.7336 to 11.8625 (1.096% increase). An increase in BMIS score indicates greater pleasure. This illustrates *H2*.

For the same increase in exchange rate from 20 October 2015 to 21 October 2015, the average BMIS score for exporters with capital employed worth less than 2,50,00,000 INR decreased by 1.6393%, whereas the average scores for exporters with capital employed worth more than 2,50,00,000 INR decreased by 3.9101%. Thus, exporters with capital employed worth more than 10,00,000 INR experienced greater displeasure upon an increase in stock exchange rate than those with capital employed worth less than 2,50,00,000 INR. On the other hand, for the same decrease in the exchange rate from 21 October 2015 to 22 October 2015, the average BMIS score for exporters with capital employed less than 2,50,00,000 INR increased by 1.041%, whereas the average score for exporters with employed capital worth more than 2,50,00,000 INR increased by 1.1625%. Thus, investors with stock of more than 10,00,000 INR experienced greater pleasure upon the decrease in stock market index than did the other category. This demonstrates *H4*.

To calculate change in BMIS score adjusted for magnitude change of exchange rate, we shall use the following formula-

Change in BMIS (adjusted)= Percentage change in BMIS/ Percentage change in USD-INR exchange rate.

Thus, during the period of 20 October 2015 to 21 October 2015 the change in BMIS score (adjusted for change in exchange) was 6.8772 (2.7605%/ 0.4014%) whereas the change in BMIS (adjusted for change in exchange) from 21 October 2015 to 22 October 2015 was 2.6467 (1.096%/ 0.4141%). Thus, participants experienced more displeasure upon the increase in USD-INR exchange rate than the pleasure they experienced upon a decrease in USD-INR (adjusted for magnitude change). This illustrates *H6* (loss aversion).

6. Conclusions and Limitations of the Study

The study has illustrated how routine fluctuations in stock market index and currency exchange rate affect the mood of investors and exporters. It is interesting to note that although these measures are unstable and not good predictors of long term financial prospects, they do cause noticeably changes in the mood of investors.

Our sample of stock market participants consisted of investors and not speculators. As such, the present study might question the rationality of investors as they often intend to invest for long term purposes and routine fluctuations in the stock market index should not affect their mood.

Another finding of our study is that the mood of participants of financial activities with a greater stake was more affected by day to day fluctuations in stock market index/exchange rate than the mood of those with a lesser stake. This may be attributed to their increased level of insecurity and concern about their financial activities.

The paper then goes on to demonstrate loss aversion. In the cases of both the stock market investors and exporters, displeasure of the participants (adjusted) on unfavourable variations came out to be greater than pleasure of the participants (adjusted) on favourable changes. This indicates that people indeed prefer to avoid losses than accrue gains. Prospects of loss affect people's mood more adversely than prospects of gain.

A limitation of the study is that self-reported tests for subjective measures like mood may be erroneous. We recognise the concern of the mainstream literature about the validity of self-reported data. (Borooah, 2005; Kahneman *et al.*, 1999; Frey and Stutzer, 2002) [8-10]

7. References

1. Tella R, MacCulloch RJ, Oswald AJ. The macroeconomics of happiness. Working paper no. 615, Warwick Economic Research Papers, University of Warwick, 2001.
2. Murgea Aurora, Reisz Robert D. Does the market make us happy? The stock market and well-being. Economia politica, 2013; 30(1):69-86.
3. Kahneman D, Tversky A. Choices, Values, and Frames. American Psychologist 1984; 39(4):341-350.
4. Kahneman D, Tversky A. Advances in prospect theory: Cumulative representation of uncertainty. Journal of Risk and Uncertainty. 1992; 5(4):297-323.
5. Mayer JD, Gaschke YN. The experience and meta-experience of mood. Journal of Personality and Social Psychology. 1988; 55:102-111.
6. Reserve Bank of India - Reference Rate Archive. Reserve Bank of India - Reference Rate Archive. Web. 23 Oct, 2015.
7. NSE - National Stock Exchange of India Ltd. *NSE* - National Stock Exchange of India Ltd. Web. 22 Oct, 2015.
8. Borooah V. How to assess happiness? A tale of three measures, Applied Economics Letters, 2005; XII(3):191-194.
9. Kahneman D, Diener E, Schwarz N. Well-being: foundation of hedonic psychology, New York, Russell Sage Foundation, 1999.
10. Frey BS, Stutzer A. What economists learn from happiness research?, Journal of Economic Literature. 2002; XL:402-435.