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Behavioural Finance of Stock Market: A Case Study

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Abstract

Behavioural finance is a discipline within financial economics that elucidates the diverse psychological aspects. It is an area of research that integrates principles from psychology and economics to comprehend the impact of human behaviour on financial markets and decision-making. In contrast to conventional financial theories, which presume that investors act rationally, and markets operate efficiently, behavioural finance recognizes that individuals frequently make choices driven by emotions, cognitive biases, and heuristics. Behavioural finance proposes that investors tend to either overreact or underreact when faced with new information. As a result, stock prices can deviate from their true value, presenting opportunities for arbitrageurs to exploit market inefficiencies. This theory also sheds light on the formation of market bubbles, where asset prices skyrocket to unsustainable levels due to speculative excitement and irrational exuberance. Likewise, behavioural biases like fear and panic can instigate market crashes, as evidenced by events such as the burst of the dot-com bubble in the early 2000s and the global financial crisis of 2007-2008. The study analyses and explains the behavioural patterns of the Indian Stock Market and establishes the link between psychological factors and investment decisions such as buying and selling of securities. The study delves deeper into behaviour of retail investors, DII, FII and FPIs during periods of booms as well as busts. studying how the Indian stock market has reacted historically upon considering the various macroeconomic, geopolitical, and fundamental updates and trends. As a proxy for Indian Stock Market the NSE's NIFTY 50 and BSE's Sensex indices are considered, and for observing behavioural patterns in specific sectors, NSE sectoral indices such as NIFTY IT, NIFTY BANK, NIFTY FMCG etc are considered.

Key words: stock market, investment, behavioural, securities and market anomalies

Introduction

Behavioural Finance is the field of study that is concerned about the psychological factors which play a role in influencing and altering the decision-making process of individual investors and institutions in the financial market. Behavioural Finance elaborates upon how psychological factors, such as emotional and mental, impact investment decisions and financial outcomes. Behavioural Finance also covers the various types of biases and tendencies in investment science and empirically tries to analyse and understand the correlation and causation between psychological variables and stock market behaviour / patterns. The study of behavioural finance also looks at how emotions affect financial judgment. Behavioural Finance tells us that both negative and positive emotions impair and cloud the judgement of investors. Behavioural finance delves into the illogical actions of investors that have the potential to

impact security market prices. It analyses the impact of cognitive and emotional mistakes on the decisionmaking process of investors. It aims to eradicate the impractical assumptions of conventional economic and financial theories in decision-making processes to render them more practical. Without this, certain facets of financial markets would remain incomprehensible. For instance, investors may act irrationally due to fear, greed, panic and euphoria and these exact tendencies leads to consequential periods of booms and busts.

Research Problem Statement

The primary focus of behavioural finance research is to understand the ways in which behavioural biases affect investor decision-making and their subsequent impact on market dynamics. The research specifically aims to analyse the prevalence and manifestation of behavioural biases and heuristics among Indian investors, such as overconfidence, herding behaviour, and loss aversion. Additionally, it seeks to investigate how these biases contribute to market anomalies, including the momentum effect, value effect, and post-earnings announcement drift, which may deviate from the predictions of traditional finance theories. Ultimately, by shedding light on the behavioural aspects of financial decision-making, the study focuses on improving the interpretation of market efficiency, investor welfare, and the implications for policy and practice in India's financial landscape.

Need and Significance

The significance of the study is that it attempts at providing insights into the reasons behind unexpected market behaviour, such as market bubble and crash, by shedding light on the impact of biases on investment decision-making. Finding these trends can be beneficial as investors fine-tune their strategies, improve risk management, and policymakers can develop more impactful regulations.

Therefore, behavioural finance has in part, helped solve the mystery of stock market dynamics in theory, however the validity of these theories is yet to be tested practically in the Indian stock market and understand how the NIFTY 50 index behaves during periods of panic, fear & apprehensiveness as well as develop an understanding of whether the market participants are rational or irrational.

Objective of The Study

The research conducted seeks to uncover the complexities of investor behaviour. The study specifically focuses on how cultural nuances, historical experiences and behavioural biases that are unique to the region, impact investor decision-making processes and market dynamics. By examining prevalent behavioural biases such as herding behaviour and aversion to loss; the scope of this paper is to explain market anomalies, deviations from traditional financial models, and to showcase the psychology and behaviour of market participants during turbulent and volatile periods.

Below are the objectives:

- Analyse market anomalies, such as a correction decipher the behavioural and fundamental factors driving the trend.
- To identify the sectors most vulnerable to sentiment change.

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- In essence, the principal aim of this study is to better comprehend the behaviour of markets and test the efficiency of market and market participants in the ever-changing financial environment.

Research Methodology

The primary aim of this thesis is to critically assess the influence of instincts on investment decision making in the Indian security market, the study examines different behavioural aspects and their impact on investment decision making. This study is merely focussed on identifying market anomalies, explaining how behavioural instincts repeat market aberrations.

The interdisciplinary nature of behavioural finance makes the research methodology to incorporate elements from psychology, economics, and finance and therefore, the study ignores many factors not relevant to behavioural finance but have a collective impact on the fluctuation of price in the market.
A mixed-method approach is adopted for this study by combining quantitative methods such as statistical analysis of market data and qualitative techniques such as understanding impact of subjective. In essence, research is designed in a way which enables a methodical exploration of investor behaviour and its repercussions on the Indian stock market, providing valuable insights to both academia and industry professionals.

Data Collection

The research study is oriented towards studying market behaviour and examining the effectiveness of markets. and therefore, secondary data like past market data, volatility, price movements, change in FII / DII holding, corporate earnings etc. are used to gather insights.
Since the collection of secondary data are from reputed and reliable sources such as Yahoo Finance, NSE, NDSL, AMFI, MOSPI etc. the scope for inaccuracies and discrepancies are low.

Chaptalization

Until the 1970s, the study of the environment focused on the agents of the environment, based on certain assumptions of standard finance theory. However, these assumptions were unrealistic and led to incorrect conclusions. In the 1980s, when these assumptions were questioned, the focus shifted to the decision-making process and the individuals involved, making them the subject of study. This gave rise to a different branch of finance known as behavioural finance, which analyses the role of psychological biases in decision making. Behavioural finance acknowledges that real investors are influenced by their psychological biases, which can result in suboptimal decisions. These decisions, when made on a large scale, can cause market disruptions. Behavioural finance serves as a supplement to standard finance theory rather than a replacement, as it explains phenomena that cannot be explained by traditional finance theory. Theories of behavioural finance, built upon the models of standard finance, can help investors understand their own behaviour and improve their decision-making process. Hence, a comprehensive examination of this domain is imperative in the present era.

Review of Literature

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In challenging and risky situations, investors often make predictable, non-optimal choices due to heuristic simplifications. The investors, lacking sufficient literacy to conduct detailed financial analysis, rely on various heuristics such as fear, affect heuristics, and anger to make decisions. Fear aids investors in exercising caution in financial decision-making, while affect heuristics and anger negatively impact their decision-making process (Hassan et al., 2013). The investors utilize three heuristics and biases, namely "representativeness", "availability", and "anchoring", in different decision-making scenarios to enhance their judgment in uncertain situations.

(Tversky& Kahneman, 1992). "Prospect Theory" is based on two key principles. Firstly, investor utility depends on Instead of, gains and losses are measured in relation to a fixed reference point. wealth levels. Secondly, investor utility functions are concave for gains and convex for losses. This is because investors react differently to similar situations based on whether it is framed as a loss or a gain. Investors tend to be distressed by potential losses and pleased by potential gains; while they are generally risk-averse in the face of gains, they become risktakers when confronted with losses.

Indian Stock Market

The stock market in India has a rich history, it came to existence in the early 19th century. The regional stock exchanges were established in cities like Mumbai, Kolkata, and Chennai. These exchanges primarily facilitated trading in shares of textile companies, which were dominant in India's industrial landscape at that time.

After India gained independence, regulatory reforms were introduced to modernize and regulate the stock market. The Securities Contracts (Regulation) Act of 1956 provided the framework for securities regulation, leading to the establishment of the Securities and Exchange Board of India (SEBI) in 1988.In 1992, the Indian economy underwent significant liberalization, which opened avenues for foreign investment.
This paved the way for the emergence of the National Stock Exchange in 1994.

The NSE introduced electronic trading, bringing greater transparency and efficiency to the market. Through the years, the India has experienced numerous significant changes, including the implementation of electronic trading. platforms, dematerialization of shares, derivatives trading, exchange-traded funds, real estate investment trusts (REITs), infrastructure investment trusts (InvITs), unified payments interface for IPO applications and the list follows.

The Indian stock market functions as a lively and ever-changing financial ecosystem, providing valuable insights into the economic well-being of the country and the sentiment of investors. It is anchored by prominent indices like the BSE and the NSE offers investment prospects across various sectors including technology, finance, healthcare, and energy. With a vast number of investors involved, ranging from institutional powerhouses to individual traders, the market exhibits a combination of conventional methods and contemporary advancements. With thousands of listed companies across different sectors and exchanges. As of now the market capitalization of all listed companies (5,376) valued close to $5 trillion, making it the 5th largest stock market in the world.

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Table 3.1 Market Capitalization & GDP

Year	Market Capitalization as a % of GDP
2014	78.893
2015	72.886
2016	69.020
2017	88.788
2018	76.448
2019	77.368
2020	94.709
2021	117.25
2022	104.782
2023	123.951

Source –www.ceicdata.com

The market cap of the stock market, i.e. the combined market value of all the publicly listed companies in India is proliferating and has now exceeded the gross domestic product or national income of the country.

Indices

An index, sometimes spelled as "indice" in certain contexts, is a statistical metric utilized to represent the performance of a collection of assets, such as stocks, bonds, or commodities. It functions as a standard or point of reference for investors, offering a means to monitor the overall movement and trends in the market. The calculation of an index involves a base period and a base index value. These securities are assigned weights within the index according to their individual market values, enabling larger companies to exert a more significant influence on the index's performance. Financial indexes are designed to gauge the price changes of various investments like stocks, bonds, and T-Bills. These indexes are formulated by choosing a set of stocks that represent the entire market or a specific sector within the market. Following are the uses of indexes:

- They offer a historical analysis of the returns generated from investing in the stock market in comparison to alternative investment options like gold or debt.
- They serve as a benchmark for evaluating the effectiveness of an equity fund.
- Sectoral indices act as an early indicator of the economic performance of a specific sector.

- Stock indexes provide real-time and current information.

Indices are computed and released regularly, often on a daily basis, to reflect fluctuations in the prices of the underlying securities. Some notable indices include the BSE Sensex, NSE Nifty 50, and various sectoral indices like NSE Bank Nifty or BSE Healthcare index. The Nifty is a collection of the top 50 listed companies from 23 different sectors on the National Stock Exchange of India. This index serves as a tool for investors, traders, and speculators to gauge market sentiment and used as a benchmark to evaluate performance.

Table 3.2 shows the number of companies as part of the NIFTY 50 index with their respective weightages. Companies with more market capitalization get more weightage in the index, market capitalization refers to the total value of the company. which is calculated by multiplying the value of each share with the total number of shares.

Table 3.2 List of NIFTY50 companies

Sr. No.	Company Name	Weightage	Sr. No.	Company Name	Weightage
1	Reliance Industries	10.73 %	26	UltraTech Cement	1.56 %
2	TCS Ltd	7.64 %	27	Asian Paints	1.51 %
3	HDFC Bank	6.13 %	28	Bajaj FinServ	1.39 %
4	Bharti Airtel	4.50 %	29	Bajaj Auto	1.36 %
5	ICICI Bank	4.35 %	30	Wipro	1.33 %
6	SBI	4.09 %	31	Nestle India	1.31 %
7	Infosys	3.29 %	32	JSW Steel	1.25 %
8	ITC	3.00 %	33	Tata Steel	1.20 %
9	HUL	3.00 %	34	Grasim Industries	0.92 %
10	L&T	2.61 %	35	Hindalco	0.86 %
11	Bajaj Finance	2.31 %	36	SBI Life	0.79 %
12	Maruti Suzuki	2.17 %	37	LTMINDTREE	0.77 %
13	Sun Pharma	2.04 %	38	BPC Ltd	0.77 %
14	HCL Tech	2.01 %	39	Tech Mahindra	0.71 %
15	NTPC	1.99 %	40	Eicher Motors	0.71 %
16	Adani Ent	1.96 %	41	Britania	0.69 %
17	ONGC	1.95 %	42	HDFC Life	0.67 %
18	Axis Bank	1.94 %	43	Cipla Ltd	0.64 %
19	Kotak Bank	1.86 %	44	IndusInd Bank	0.60 %
20	Tata Motors	1.75 %	45	Divis Labs	0.59 %
21	M&M	1.73 %	46	Tata Consumer	0.58 %
22	PowerGrid	1.67 %	47	Hero MotoCorp	0.56 %
23	Coal India	1.67 %	48	Dr Reddys Labs	0.53 %
24	Titan	1.66 %	49	ShriRam Finance	0.49 %
25	Adani Ports & SEZ	1.65 %	50	Apollo Hospitals	0.47 %

Source –www.smart-investing.com

Mutual Funds

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MFs serve as investment instruments that combine funds from numerous investors to create a diversified portfolio of securities, including stocks, money market instruments, and other assets. Professionals oversee these funds and make investment choices for the investors. MFs cater to various clients depending upon their risk appetite, investment goals and financial security.

Net Asset Value = Total Net Assets÷ No. of Outstanding Units
The NAV of a mutual fund represents the value per share of the fund's assets after deducting its liabilities. It is the price at which investors can purchase or sell shares in the mutual fund. Typically, NAV is calculated at the end of each trading day using the closing prices of the assets in the MFs portfolio. The NAV is a crucial measure of its performance and represents the value per unit of the fund's assets minus its liabilities. Some of elements that influence the NAV of a mutual fund are:

Market Valuation of Holdings: The NAV of a fund is primarily affected by the market valuation of its underlying holdings. If the prices of the securities held by the fund increase, the value of the fund's assets rises, resulting in an increase in NAV. Conversely, if the prices decline, the NAV decreases.

Accrual of Income: Mutual funds often invest in interest-bearing securities like bonds & dividend-paying stocks. The interest income, dividends, and capital gains earned by the fund's holdings contribute to the NAV. Income distributions from the fund's investments increase the NAV, while expenses and taxes decrease it.

Expenses and Fees: Mutual funds have operating expenses, including management fees, administrative costs, and marketing expenses. These expenses are deducted from the fund's assets, reducing the NAV. Lower expense ratios generally lead to higher NAV growth over time.

Cash Flows: The inflows and outflows of investor money into or out of the mutual fund affect the NAV. When investors buy shares of the fund, the fund receives additional cash, which increases the NAV. Conversely, when investors redeem shares, the fund pays out cash, leading to a decrease in NAV.

Distribution of Dividends and Capital Gains: Mutual funds may periodically distribute dividends and capital gains to investors. These distributions reduce the NAV because the fund's assets are reduced by the amount of the distribution.

Equilibria in Capital Markets
The concept of capital market equilibrium in finance refers to a state where the demand for investable funds matches the supply of investable funds, resulting in an equilibrium interest rate or return. This equilibrium can be explained mathematically using the formula for the market for loanable funds;

$D = S$ Where: D represents the demand for investable funds.
:S represents the supply of investable funds.

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The equilibrium interest rate or return, denoted as r*, is the rate at which the amount of funds demanded equals the amount of supply:

$$D(r^*) = S(r^*)$$

In practice the return in the capital market is influenced by various factors, including:

- Economic conditions, such as GDP growth, inflation, and unemployment.
- Fiscal policy, including government spending and taxation.
- Flow of money supply

These forces interact with each other to determine the equilibrium interest rate or return in the capital market, which in turn affects asset prices.

Determinants of Stock Price

The fluctuation of the stock market is heavily impacted by important macroeconomic factors. Although stock prices are set in the market, the reasons behind their fluctuations continue to be a topic of fascination. Economic and behavioural influences play a crucial part in determining their trends. India's acknowledgment as a significant emerging market has drawn interest, prompting the government to introduce measures to strengthen the financial markets.

Investment experts, employ different methods for valuing markets, these valuation models are forecast models that attempt at predicting the future value of companies. Thus, for these valuation models to be accurate, they consider many inputs that can alter the business and economic environment of a country's market, following are the determinants:

Economic Growth – Macroeconomic indicators such as gross domestic product / gross national product, real GDP growth and GDP per capita are some of the key indicators that represent the output and income growth of a country.

Index of Industrial Production –Market prices are byproduct of expected earnings and performance of companies, thus, to predict future price movements, the Index of Industrial Production serves as a proxy of industrial performance of each sector. The industrial expansion, as gauged by the IIP, surged to a high of 15.5% during 2007-08, aligning with the peak of the Sensex. However, amidst a global economic downturn, the IIP plummeted to a mere 2.5% in 2008-2009, once again mirroring the decline in the Sensex.

Exchange Rate – Foreign institutional investors (FII) put funds in the equities market, their decision of buying & selling is factored by the prevailing exchange rate i.e. a strengthening rupee would attract investments whereas weakening rupee would promote disinvestment.

Inflation – Rate of increase in prices is referred as inflation, it is calculated by the Consumer Price Index (CPI) and Wholesale Price Index (WPI). The decrease in consumer demand and elevated interest rates give path to the deceleration of economic activity, affecting the returns. A higher inflation figure indicate that prices are unstable, which again causes uncertainty in the market.

Monetary & Fiscal Policy – Monetary policy dictates the flow of money supply in an economy, if the RBI opts an expansionary monetary policy, then money supply increases and vice-versa. Whereas fiscal policy refers to the changes in taxation, government expenditure and public investment, if the government expenditure exceeds receipts from the revenue, it is called

expansionary fiscal policy, and the reverse is contractionary fiscal policy. Expansionary fiscal and monetary policy fosters economic growth and is good for the stock market, however in the long-term expansionary policies are not good for the market and economy.

Interest Rates – Domestic and international interest rates also influence the market volatility; interest rate cuts increase liquidity in the market whereas interest rate hikes decrease liquidity in the market. Thus, interest rates and stock market share a negative correlation.

Crude Oil – Since India is an importer of crude oil and used in production of goods, a surge in crude oil prices increase the cost of production and reduced operating margins for companies.

Corporate Earnings – Growth in corporate financial metrics such as EPS, ROA, ROCE, P/B ratio, P/E ratio, EBITDA etc. of the market attracts more investment and vice versa. If listed companies undergo a boom in quarterly and annual earnings, the stock market surges, by adjusting for new valuations.

Market Crash-2015

On August 24, 2015, the Sensex, experienced a significant decline of 1,624 points, while the NSE also witnessed a drop of 490 points. The markets persisted in their downward trend throughout 2016. By February 16, 2016, the BSE had encountered a decline of 26% over the previous eleven months, with a loss of 1607 points in four consecutive days of February. The 2015 market crash qualifies as a market anomaly, because it occurred without clear reasons. Thus, this study analyses the fundamental trends such as GDP, CPI, interest rates, net investment flows and psychological factors and market speculation.

Figure 4.1 NSE Nifty 50 Chart

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Source –www.yahoofinance.com

Figure 4.1 represents the chart of the NSE Nifty 50 index from the period 2015-16, with the correction starting from August of 2015 and bottoming out till February of 2016, an approx. period of 6 months. In March, the markets started recovering and by July 2016 had reached its previous high again.

As we have learned that EMH & CAPM, theories from traditional school of finance, tell us inefficiency is not possible as prices accurately mirror all the known info. within the market., thus there can be never mispricing of market, i.e. markets can neither be overvalued nor undervalued since the inherent value is reflected in the asset price. Here we'll discover that this hypothesis is not necessarily true. Therefore, the purpose of this study is to demonstrate that market dynamics are not always efficient and rational as the traditional theory of finance assume. It is to show that markets can be maneuverer with negative sentiments and misinformation amongst market participants.

Null Hypothesis (H_0) = Markets are inefficient, i.e. they do not incorporate all the known information into asset prices.

Alternate Hypothesis (H_a) = Markets are efficient, i.e. they incorporate all the known information into asset prices.

Fundamental Trend Analysis

Macroeconomic factors constitute a very significant role in determining stock market prices by influencing investor sentiment, corporate profitability, and the overall economic outlook. These crucial indicators give us a broader picture about the economic landscape. Pricing anomalies can indeed be detected through the use of fundamental analysis. Fundamental analysis involves

the evaluation of an asset's inherent value by examining various economic factors that underlie it, including financial statements, business operations, industry conditions, and competitive positioning.
Here is how pricing anomalies can be identified using fundamental analysis:

Discrepancy between Intrinsic Value and Market Price: Fundamental analysis helps investors estimate the intrinsic price of a security by considering the anticipated flow of income in the future, earnings potential, and growth prospects. By comparing this intrinsic value with the stock's current market price, investors can identify instances where the market price significantly deviates from the estimated intrinsic value. If the market price is significantly lower than the intrinsic value, it may indicate an undervalued stock. Conversely, if the market price is higher than the intrinsic value, it may suggest an overvalued stock.

Historical Trend Analysis: Fundamental analysis involves analysing historical trends of key financial metrics, such as revenue growth, earnings growth, profit margins, and return on equity. Significant deviations from historical trends or industry averages may indicate potential pricing anomalies.

Comparative Analysis: Fundamental analysis allows investors to compare a company's financial metrics and valuation multiples with those of its industry peers or historical averages. Significant differences in valuation multiples, such as price-to-earnings ratio, price-to-book ratio, or dividend yield, between comparable companies may suggest mispricing. For instance, if a company with similar growth prospects and risk profile as its peers is trading at a lower valuation multiple, it could indicate an undervalued stock.

Qualitative Factors: In addition to quantitative analysis, fundamental analysis also considers qualitative factors. These factors include the company's management team, brand reputation, competitive advantages, and industry outlook. Assessing these qualitative factors alongside quantitative analysis can provide a more comprehensive understanding of the asset's intrinsic value and potential pricing anomalies.

GDP growth rate trends–The GDP growth rate at constant prices is the measure of real GDP change for the three quarters of the FY15-16. By subtracting the price rise or inflation from the GDP at current prices we get GDP at constant prices. From the table below we can notice that in these three quarters the growth numbers were 7.6%, 7.7% and 7.3% making it more evident that the economic growth was healthy and steadily growing during this period.

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Table 4.1GDP growth rate

Year	Constant prices (2011-12)	Current prices
Annual 2015-16 (Advance)	7.6	8.6
Q12015-16	7.6	8.7
Q2 2015-16	7.7	6.4
Q3 2015-16	7.3	9.2

Source –www.pib.gov.in

Index for Industrial Production (IIP) trends–The IIP rate of growth for every particular month and industry are shown in the table below. At the time of correction till the bottoming out of the market, the growth in industrial production showed little to no signs of any slowdown.

Table 4.2 IIP growth rate in %

Industry	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16
Primary Goods	7.3	5.6	5.9	3.8	2.7	4.5	10.5
Capital Goods	2.8	2.8	20.3	6.4	4.7	12.6	4.3
Intermediate Goods	0.5	1.4	5	-2.6	1.9	2.5	5.3
Infrastructure	4.5	1.6	1	-5.3	-0.1	2.2	11.1
Consumer	1.8	-2.8	17.7	-4.5	5.2	3.1	6.7
Consumer non-durables	1.5	1.6	15.3	5.3	5.4	3.5	1.4

Source –www.mospi.gov.in

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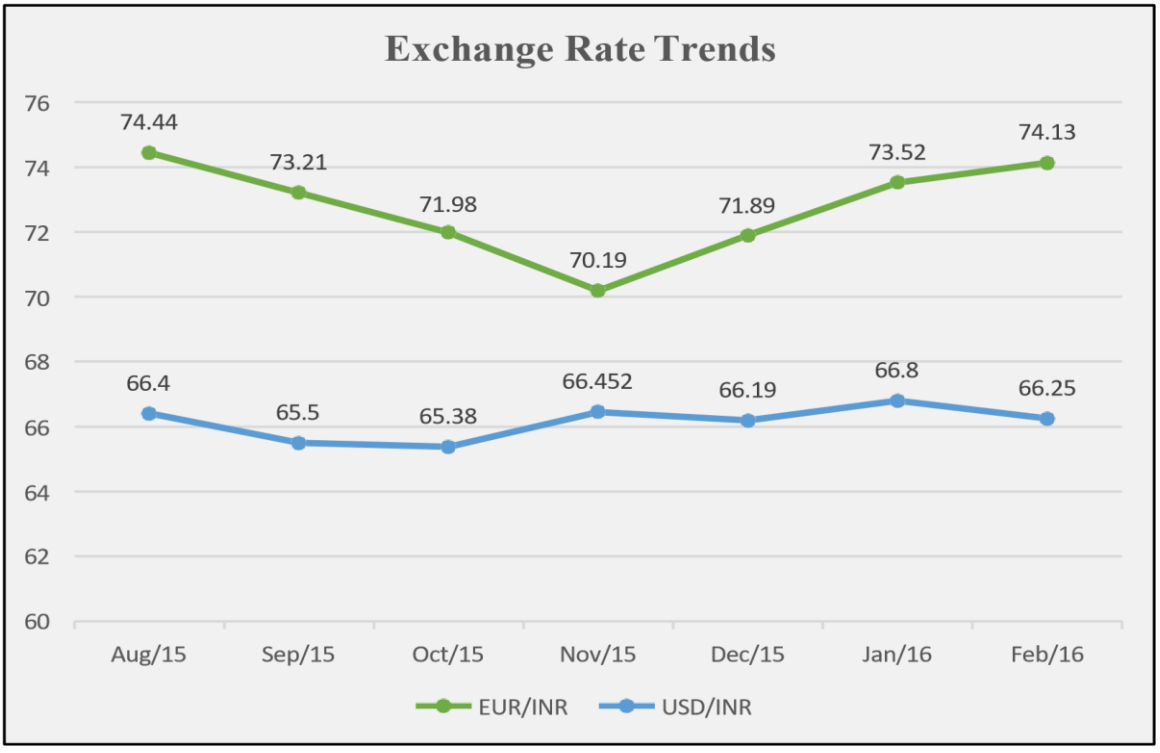
Except for the month of November, the IIP growth was robust, especially in the capital goods and consumer non-durables segment. Despite solid growth in fundamental indicators, the market however, kept falling to new lows. This again reinforces the view that market can decline even during prosperous economic times.

Exchange Rate Trends –During the period of correction from Aug 2015 to Feb 2016, the exchange rate of INR to USD had strengthened, unlike what had been anticipated. We analyze the exchange rates of EUR/INR and USD/INR for the same time-period. The value of one USD was roughly equal to 66.4 INR at the time of market correction, and the exchange rate kept fluctuating for months until the USD weakened against the rupee in March 2016 and the market started recovering from the trough.
Note-The exchange rate changes daily, and thus to make the analysis easier the exchange rate value for the month is used by calculating the median exchange rate.

Figure 4.2 Exchange Rate Trends



Source –www.in.investing.com

Inflation Rate –As we studied earlier that the consumer price index (CPI) is a statistical tool that compute rate of change in prices, and higher levels of inflation typically have an adverse effect. Other than CPI, there is also WPI that is referred to as headline inflation. The Wholesale Price Index (WPI) also serves as a crucial gauge for tracking the fluctuations in prices of goods traded in bulk by wholesalers. This index plays a significant role in assessing inflation within an economy.
Figure 4.3 shows the monthly (YoY) inflation rates from the period of Aug 2015 to Feb 2016. The inflation over the six-month period was moderate, though the CPI was slightly above 6%

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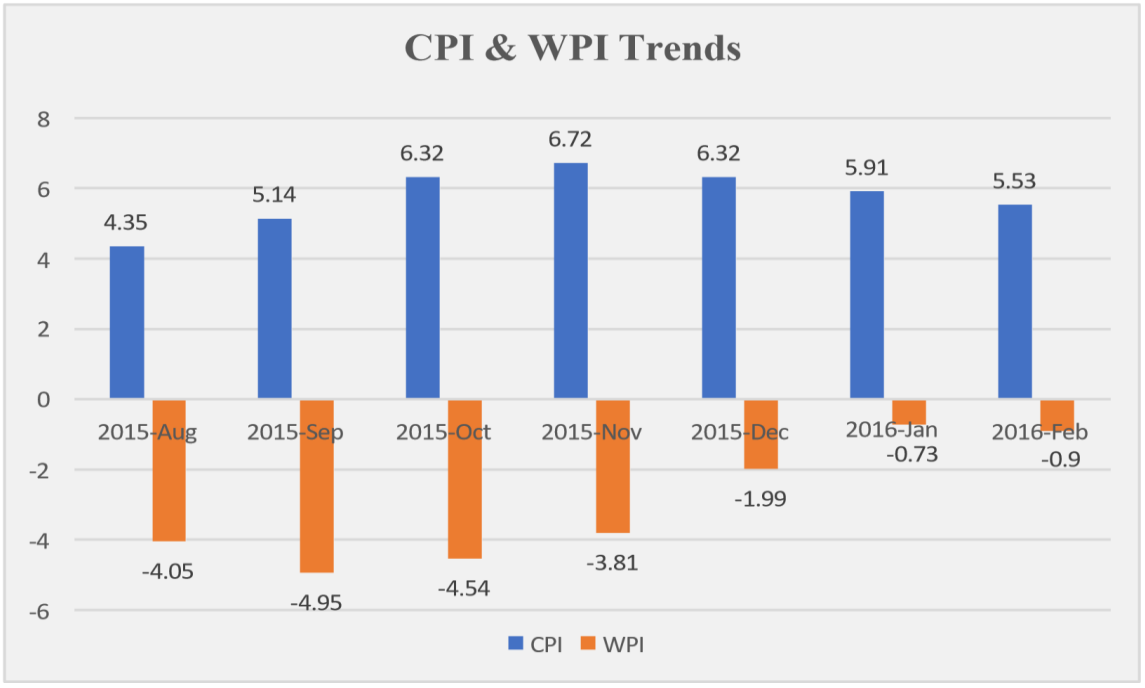
for a few months which exceeds the inflation targeting band of 26% set by the RBI but the corresponding WPI for the six consecutive months was in negative territory, which makes it clear that economy was not in an inflationary spiral and thus prices were stable. This further strengthens our initial premise of the hypothesis that the fundamentals were strong and yet, the investors were still in panic.

Figure 4.3 CPI Data



Source –www.inflationtool.com

Note-The data used is the monthly Year on Year (YoY) inflation, which is calculated by finding the percentage change between the monthly inflation of the previous year with the monthly inflation rate of current year. The change between CPI of August 2014 and the CPI of August 2015 are computed to find out the monthly (YoY) inflation rate and similarly for WPI data as well.

Commodity Index & Crude Oil – The Goldman Sachs Commodity Index (GSCI) serves as a prominent benchmark for monitoring the commodity markets. this index evaluates commodity price fluctuations across various sectors. It tracks a sum of 24 commodity futures contracts, encompassing significant commodities. The GSCI tends to increase when markets collapse as they are a hedging instrument. However, this period saw an unprecedented fall in GSCI despite of the stock market declining, evident as it is, it reinforces our argument that the markets are irrational and follow a random walk.

Figure 4.4 Crude Oil Prices

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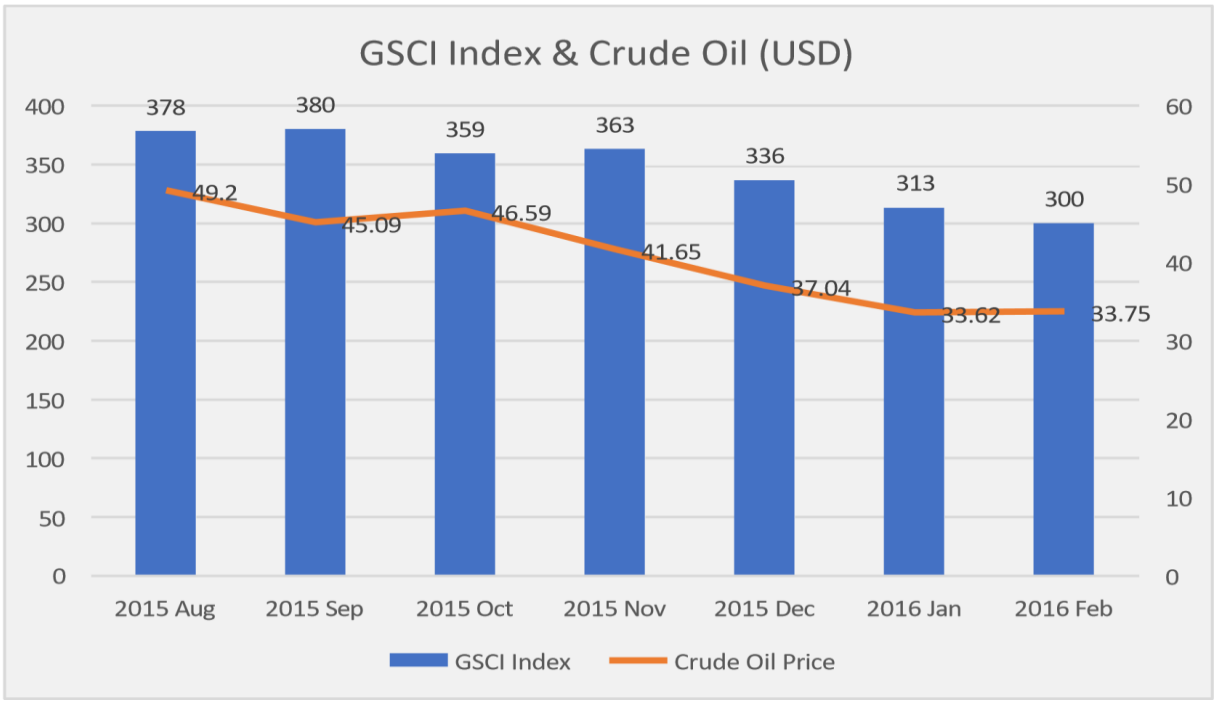

Source – www.in.investing.com

The International Crude Oil prices dictate the growth of economic and business activity of the globe. The crude oil prices drastically declined by approximately 45% however, even a massive oil bonanza couldn't revive the stock market back to its peak.

Corporate financial metrics - Corporate Financial metrics such as EPS & PB ratio depict the picture of markets' earnings and market valuation. EPS is the ratio of the combined net profit of the companies in the NIFTY 50 to the no. of shares of listed companies, this provides us earnings per share, in simpler terms, the EPS tells us how much earnings a single share generates in return.

Whereas the Price-to-Book ratio serves as a valuation metric utilized by both investors and analysts to get the relative worth of a company's stock. It is the ratio of equity share price to its book value; which is determined by dividing the company's total equity (assets minus liabilities) by the number of outstanding shares.

Figure 4.6 EPS & PB Ratio Trends

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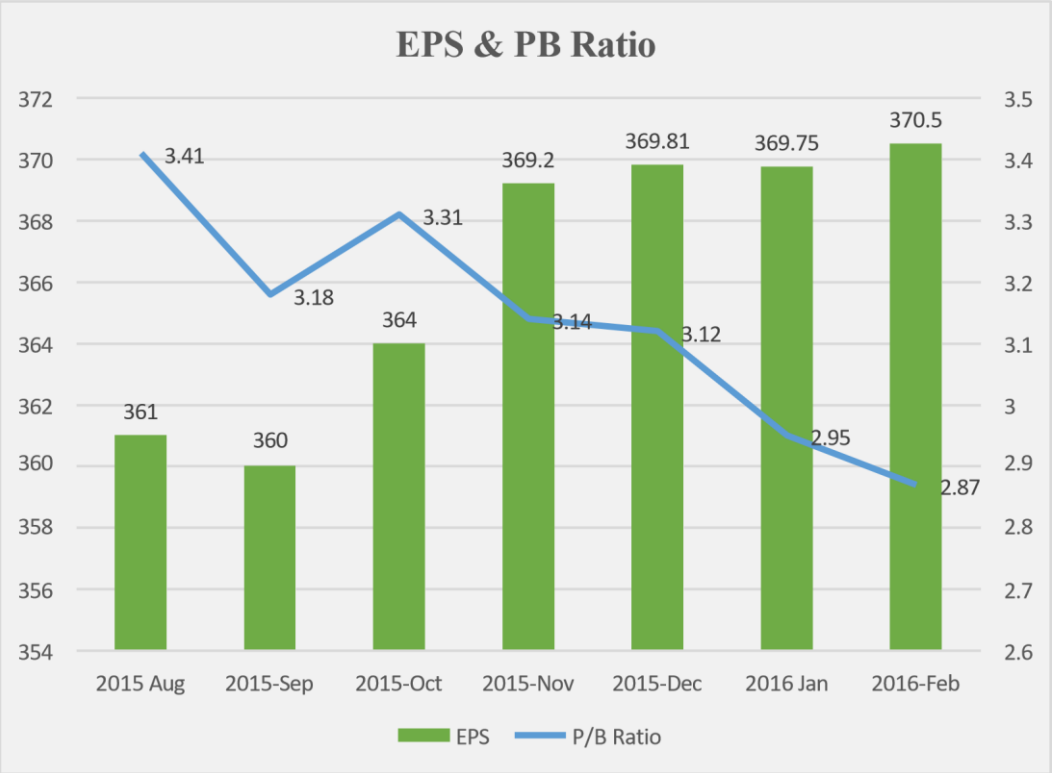

Source –www.trendlyne.com

As we can analyse the trend, the EPS continued to rise, that suggests firms were profitable and the PB ratio continued to decline. The market is signaling two things, one that it is undervalued, and the second that individuals are shelling out a lower price for each dollar of assets held by the market. Despite the market looking attractive with the increasing earnings and discounted valuations, the NIFTY kept falling to lows by about 10-15%. The contradiction that profitable and undervalued securities continue to decline, again our initial conjecture is further strengthened by this evidence that markets are irrational.

Money Supply & Interest Rate –The M3 or broad money supply is the best measure of money supply by the RBI, the M3 money supply is in the X-axis alongside the dates and the 10-Year Govt. bond yield is on the Y-axis.

Figure 4.6 Money Supply Trends

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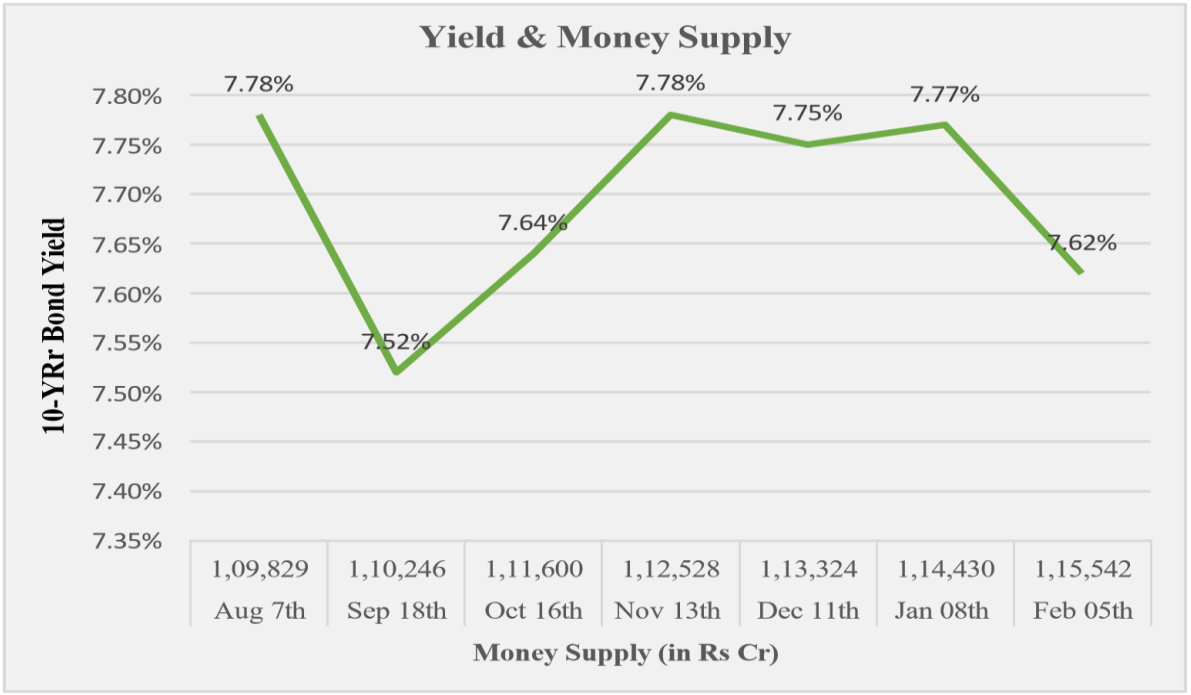

Source – www.rbi.org.in

From the chart we can see that the money supply (in Rs Cr) from the period Aug 2015 to Feb 2016 is growing steadily at an average rate of 5% whereas the 10-Year govt. bond yield has decreased from 7.78% in Aug 2015 to 7.62% in Feb 2016. The declining yield suggests that the demand for money has decreased, that resonates with the fact that M3 money supply has also increased.

According to traditional finance theory, when supply of money rises, people start making riskier investments, and cash out of the call money market, however in this situation we can see Investors were still apprehensive of the expected returns of equity markets and thus, were ready to accept lesser proceeds in the money market. This proves the original hypothesis behavioural tendencies make the markets become inefficient, at least in the short-term.

Net FPI / FII Investments –The uncertainty and fear in investors can be interpreted by observing the monthly FII / DII net investment in the equities cash market. Foreign Institutional Investors exert a considerable influence on stock prices across various markets, especially in developing nations where their investments can yield substantial consequences.

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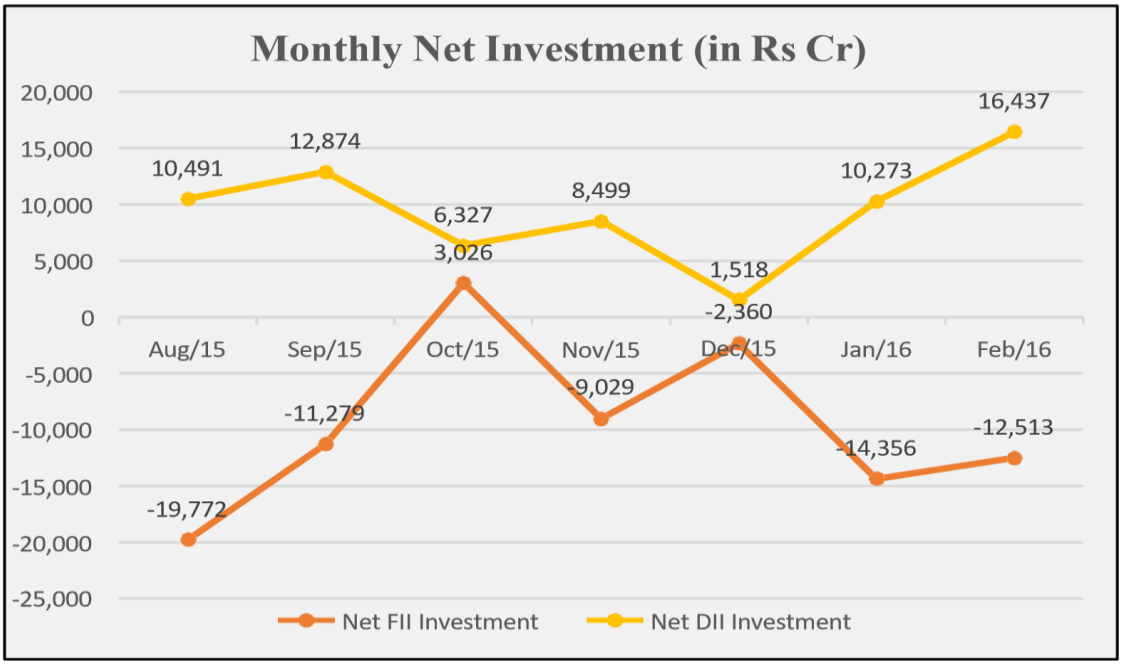
Figure 4.6 Net FPI / FII Investments



Source – www.moneycontrol.com

In the month of August 2015, net FII investment was Rs -19,772 crores, meanwhile the net DII investment was Rs 10,491 crores, approximately 9,000 crores short of absorbing the outflow, similarly in the subsequent months FIIs continued selloff and DIIs continued to buy, but still short of absorbing the FII outflow. Data suggests that as soon as FIIs started buying the market recovered quicky and reach its previous heights.

India Vix –The India VIX index, commonly known as the "fear gauge," is a metric that predicts the level of market volatility in the securities market for the next 30 days. It is the implied volatility of NIFTY 50 index options and reflects investors' expectations of future market uncertainty and fluctuations in stock prices. A higher VIX value indicates a higher level of expected volatility, indicating increased investor fear or nervousness. Conversely, a lower VIX value suggests lower expected volatility and a more stable market. As we can see from the chart, the vix fluctuated frequently, that tells us that the fear and uncertainty amongst people in the market was increasing.

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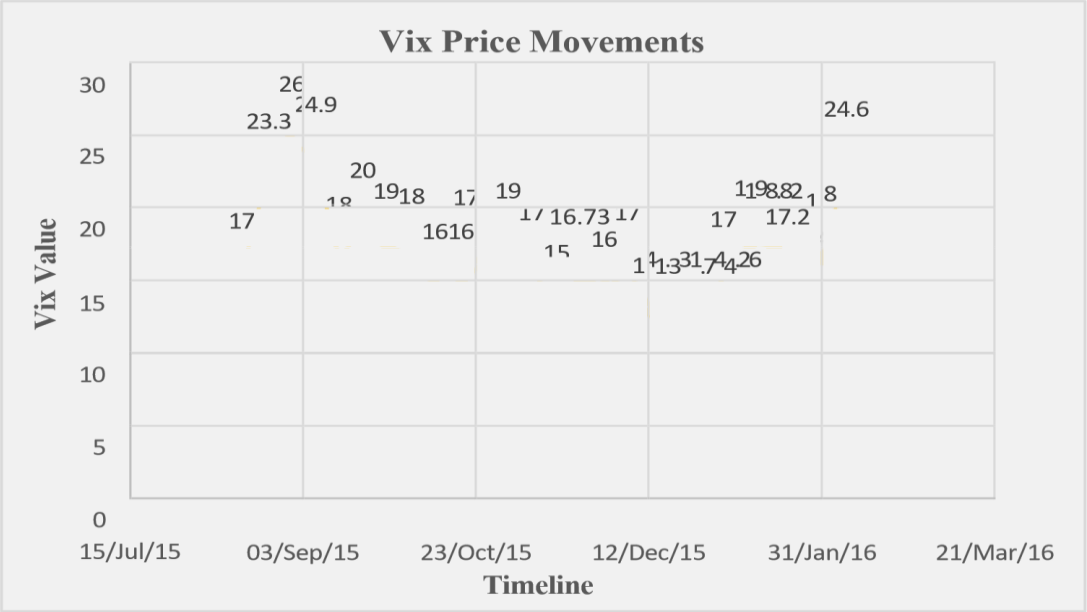
Figure 4.7



Source – www.nseindia.com

Conclusion:

In this paper an explanation of strange phenomena in the market that despite the overall activity of business and commerce looking bright, backed up by factual information. The investor community was scared to invest because of some rumours about China, this tells us that humans are ingenuous and there are no guaranteed parameters of interpreting the market, as the market itself is flawed. The premise of the 2015 market crash was down to the fact that investors panicked due to growing concern over a "potential" slowdown in China's GDP because of the devaluation of the Chinese Yuan two weeks prior. This belief led to the anticipation that slowdown would soon creep in India. Subsequently many institutional investors and other market participants, started liquidating positions from the equity cash market and parked money in the money markets to safeguard their wealth, which battered down the market further. The 2015 market saga is a testament to the fact that participants of the market are carried away by emotions and tend to follow the common trend as they see others doing the same, this coupled up with the loss aversion bias, that suggests financial losses are subject to more sensitivity in responses as compared to equivalent gains acquired. The decline was driven by a combination of panic, fear, and pessimism in the minds of investors who chose to withdraw / sell their holdings in the stock market despite of healthy fundamentals and a sound economy. By the help of this trend analysis and caste study we can say that the not always are the markets efficient and can be easily manipulated by participants with large sums and by fear mongering.

In summary, this paper has extensively explored the intriguing realm of behavioural finance and its significance in comprehending stock market behaviour. To begin with, behavioural finance offers valuable perspectives on the constraints of the traditional theory of finance, which assumes that investors are rational and base their decisions on all available information. By integrating knowledge from psychology and economics, we have acquired a deeper

comprehension of the cognitive biases that frequently result in systematic deviations from rationality in decision-making.

Moreover, the empirical analysis put forth in this thesis has furnished proof of various behavioural phenomena observed in real-world stock market data.
These phenomena encompass herd behaviour, overreaction, underreaction, anchoring, and loss aversion, among others. Grasping these behavioural biases is crucial for forecasting market trends, pinpointing mispricing, and devising effective investment strategies.

Furthermore, behavioural finance holds practical implications for investors, financial professionals, and policymakers. For investors, recognizing behavioural biases can aid in alleviating the adverse impacts of emotional decision-making and enhancing investment performance. Financial professionals can integrate behavioural insights into their advisory services, product design, and risk management practices to better cater to clients and enhance outcomes. Policymakers can utilize behavioural finance principles to formulate more efficient regulations and interventions aimed at fostering market stability and safeguarding investors.
Nonetheless, despite the significant progress made by behavioural finance in advancing our comprehension of investor behaviour and market dynamics

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