

# Impact of Macroeconomic Events on the Market Performance of Selected Listed Companies

Kavishi Halvawala\*

Student, Department Commerce with Applied Math, S. D. Jain Modern School, Surat, India

**Abstract:** In numerous countries, financial exchanges are currently a significant and inseparable fabric of the economy. It is among the measurements that show the significance of the financial exchange in a country in surveying the prosperity of the country's economy just as affecting the achievement of the monetary market. Generally, macroeconomics assumes a significant part in building public economies. The Indian capital market has seen a facelift since 1991. With revolutionary internal transformations with economic liberalisation, implementation of Goods and Service Tax (GST) and enactment of demonetization and global events like Brexit and US Elections there has been a significant impact on the securities market. In the world's 3rd largest economy from Brexit to U.S. elections, price of oil and performance of global indexes, macroeconomics plays a crucial role in the economy affecting the prices of stocks and the fortune of the common man. Thus, the research paper tries to establish the effects of milestone macroeconomic events on the movement of the stocks, in isolation of internal company performance. It is said that the current stock cost of an organization's offer is only the total of assumptions for the financial backers from the organization and the business. Investors and financial backers are highly affected by the monetary market news showing instant response in a positive or an adverse way. Hence, it is vital to comprehend this powerful climate in order to manage and endure major macroeconomic occasions and their impact on their portfolios. The research includes data on financial transactions recorded at exchanges, with increasing numbers of studies in complex systems science aiming to analyse and model stock market behaviour. As a general rule, the company's performance is related to its share price indicating that a rising share price is an indication of good performance in the event of major macroeconomic situations analysing the economic performance of the country on the basis of stock index movements, and also guiding small traders for wealth creation

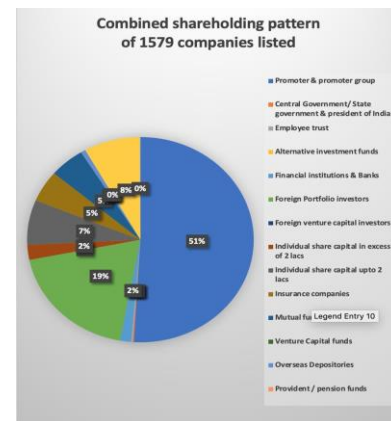
**Keywords:** Brexit, companies, Delhi assembly, economics, fall and rise, general election, energy, IT, impact, market value, Petroleum, Secondary research, Sensex, stock, US presidential elections.

## 1. Introduction

### A. Chain reaction caused by macroeconomic events

In India, the big investors form a market opinion which is followed by the small Investors who have little influence due to the size of their investment. The market opinion is driven by the sentiments of big players such as the promoter's group

(50.85%) and foreign portfolio investors (18.95%) and influence individual holders of stock with earnings up to 2 lacs amount accounting for 7.07% of the shareholding in India.



Being insecure of the impact of macroeconomic events, big groups of investors start speculating the result of such events on the share market. Being a major part of the market, foreign portfolios show a significant impact on the stock market sentiment during any international event

As the market opinion is led by the big investors (in terms of shareholding) the market indices start moving accordingly in anticipation of the event, known as the event anticipation period. Such changes in market indices affect the overall market sentiment. As the small investors (in terms of shareholding), start building opinions of downfall or up rise it leads to a chain reaction which is led by the large shareholding group. Such changes in market sentiment lead to the shift in the average returns and expected returns from the share of a company. While most big investors react within time, small shareholders are not able to grasp these abnormal returns in adequate time causing unexpected returns, which are often negative.

This chain reaction is often repeated every time a macroeconomic event takes place as small investors fail to maximize the timing of such abnormal return generally, resulting in wrongly timed investments and disinvestments. Therefore there arrives the need to study the impact of major macroeconomic events to safeguard the losses occurred by the small shareholders by the abnormal returns in the course of such

\*Corresponding author: Kavishihalvawala@gmail.com

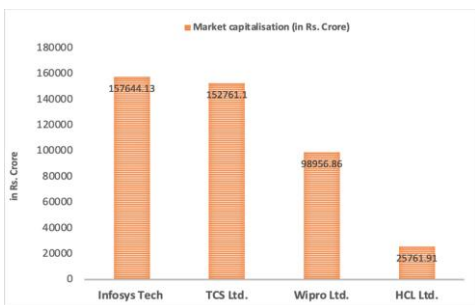
happenings. One such way to do it is to study the happening of the recent macroeconomic events and applying the results in future.

**B. Industries selected**

The study limits its scope to include two industries namely; Information Technology and Energy. The deciding factors include-

- The huge amount of market capitalization these industries have in totality in India, the top four companies (in terms of market capitalization) being from these two industries, and
- High-level sensitivity towards the financial market news.
- Both the industries being a hub for the international market in India.
- Also, the companies chosen are in order of the market capitalization starting from the highest, in their respective industry.

Leading companies in the IT industry (in terms of market capitalisation) as of 31st March, 2017



Company	Market capitalisation (in rs. Crore)
Infosys tech	157644.13
Tcs ltd.	152761.10
Wipro ltd.	98956.86
Hcl ltd.	25761.91

Leading companies in Energy sector (in terms of market capitalisation) as on 31<sup>st</sup> March, 2017



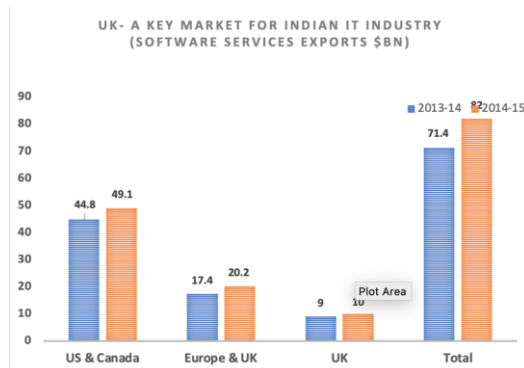
Company	Market capitalisation (in rs. Crore)
Ongc	235567.50
Gail	58822710
Oil india	31345.54
Petronet lng ltd.	9321.89

**C. Event Profile**

1) **BREXIT**: Brexit is a short word coined for an exit (= act of leaving) by the United Kingdom from the European Union (short for "British exit") as announced on 23rd June 2016. The UK voted to leave the European Union scheduled to depart at 11 pm UK time on Friday 29 March 2019. The three points of contemplation during the agreed divorce between The UK and EU included-

- How much the UK owed the EU
- What would happen to the Northern Ireland border
- What would happen to UK citizens living elsewhere in the EU and EU citizens living in the UK

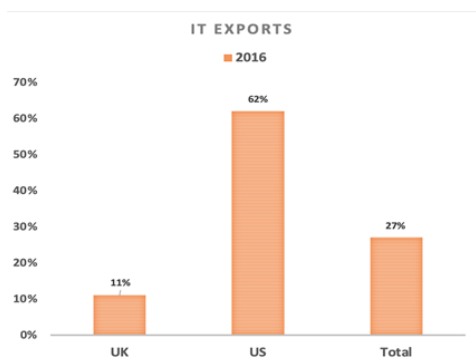
From India's point of view, Brexit is important as besides sharing trade relations, the EU is India's largest single export market. With a population of around half a billion, the European economy is worth \$16 trillion, which is equivalent to one-fourth of global GDP. The Sensex opened lower by 635 points and went down by 1,091 points before bottom fishing brought some stability. Even as the index recovered 486 points from the day's low, it still closed the day with a deep cut of 605 points or 2.24%.



2) **US Presidential Elections**

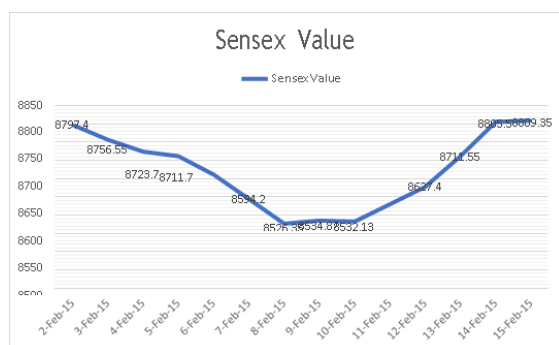
The United States presidential election of 2016 was the 58th quadrennial American presidential election, held on Tuesday, November 8, 2016. Republican Donald Trump and Indiana Governor Mike Pence defeated the Democratic Hillary Clinton and U.S. Senator from Virginia Tim Kaine. Leading up to the election, a Trump victory was projected unlikely by most media forecasts. An analysis of the change in Sensex and S&P 500 values, one week after the date of the Presidential election, shows a very high positive correlation of 0.97 between the two indices.

Another notable point is that the impact of the elections does not last long and the structural trend in the market tends to take over in Indian stock markets. In November 2012, while the Sensex fell 1 per cent in the week following the election, it recovered to gain 3.56 per cent in the following month, helped by foreign investor buying. Similarly, after the 1996 election, Indian markets declined sharply in the following month, as the structural trend was down since 1994. Foreign investment flows into India also do not appear to be influenced by these elections. Barring 2008, FII flows into the Indian equity market have been positive in the months in which US Presidents were elected.



### 3) Delhi assembly election

A Delhi Legislative Assembly election was held on 7 February 2015 to elect 70 members of the Sixth Legislative Assembly of Delhi. The results were announced on 10 February 2015. The Aam Aadmi Party secured an absolute majority in the assembly, winning 67 of the 70 seats.



## D. Industry profile

### 1) Information technology industry

Introduction: The global sourcing market in India continues to grow at a higher pace compared to the IT-BPM industry. The global IT & ITeS market (excluding hardware) reached US\$ 1.2 trillion in 2016-17, while the global sourcing market increased by 1.7 times to reach US\$ 173-178 billion. India remained the world's top sourcing destination in 2016-17 with a share of 55 per cent. Indian IT & ITeS companies have set up over 1,000 global delivery centres in over 200 cities around the world.

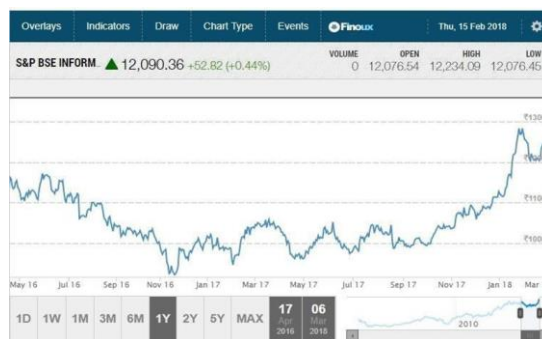
### 2) Market Size

The internet industry in India is likely to double to reach US\$ 250 billion by 2020, growing to 7.5 per cent of gross domestic product (GDP). The number of internet users in India is expected to reach 730 million by 2020, supported by the fast adoption of digital technology, according to a report by the National Association of Software and Services Companies (NASSCOM). Indian IT exports are projected to grow at 7-8 per cent in 2017-18, in addition to adding 130,000-150,000 new jobs during the same period. Indian IT and BPM industry is expected to grow to US\$ 350 billion by 2025 and BPM is expected to account for US\$ 50-55 billion out of the total revenue. The E-commerce market in India is set to grow at 30 per cent annually to hit US\$ 200 billion gross merchandise value by 2026. Indian technology companies expect India's

digital economy to have the potential to reach US\$ 4 trillion by 2022, as against the Government of India's estimate of US\$ 1 trillion. The rise in mobile-phone penetration and decline in data costs will add 500 million new internet users in India over the next five years creating opportunities for new businesses, as per private equity and venture capital firm Omidyar Network. Digital payment in India is expected to grow from 32 per cent in 2013-14 to 62 per cent in 2017-18 in terms of volume of transactions. Employees from 12 Indian start-ups, such as Flipkart, Snapdeal, Makemytrip, Naukri, Ola, and others, have gone on to form 700 start-ups on their own, thus expanding the Indian start-up ecosystem. India ranks third among global start-up ecosystems with more than 4,200 start-ups.

Total spending on IT by banking and security firms in India is expected to grow 8.6 per cent year-on-year to US\$ 7.8 billion by 2017. Personal Computer (PC) shipments from India grew 20.5 per cent y-o-y to reach 3.03 million during July-September 2017. The growth was backed by strong consumer demand and special projects. The public cloud services market in India is slated to grow 35.9 per cent to reach US\$ 1.3 billion according to IT consultancy, Gartner. Increased penetration of the internet (including in rural areas) and the rapid emergence of e-commerce are the main drivers for the continued growth of the data centre co-location and hosting market in India. The Indian Healthcare Information Technology (IT) market is valued at US \$ 1 billion currently and is expected to grow 1.5 times by 2020. India's business to business (B2B) e-commerce market is expected to reach US\$ 700 billion by 2020 whereas the business to consumer (B2C) e-commerce market is expected to reach US\$ 102 billion by 2020. Cross-border online shopping by Indians is expected to increase 85 per cent in 2017, and total online spending is projected to rise 31 per cent to Rs 8.75 lakh crore (US\$ 128 billion) by 2018.

### 3) Performance of IT industry stocks



[Source: www.moneycontrol.com]

The IT industry has led the economic transformation of the country and altered the perception of India in the global economy. India's cost competitiveness in providing IT solutions, at least 3-4 times cheaper than the US, continues to be the foundation of its Unique Selling Proposition (USP) in the global sourcing market. However, India is also gaining prominence in terms of intellectual capital with several global IT firms setting up their innovation centres in India. The IT industry has also created significant demand in the Indian education sector, especially for engineering and computer



science. The Indian IT and ITeS industry is divided into four major segments – IT services, Business Process Management (BPM), software products and engineering services, and hardware.

#### 4) C2 Petroleum industry

Introduction: The oil and gas sector is among the six core industries in India and plays a major role in influencing decision making for all the other important sections of the economy. In 1997–98, the New Exploration Licensing Policy (NELP) was envisaged to fill the ever-increasing gap between India's gas demand and supply. India's economic growth is closely related to energy demand; therefore the need for oil and gas is projected to grow more, thereby making the sector quite conducive for investment. The Government of India has adopted several policies like 100% FDI to fulfil the increasing demand. Today, it attracts both domestic and foreign investment, as attested by the presence of Reliance Industries Ltd (RIL) and Cairn India.

#### 5) Market Size

India is expected to be one of the largest contributors to non-OECD petroleum consumption growth globally. Oil imports rose sharply year-on-year by 27.89 per cent to US\$ 9.29 billion in October 2017. India's oil consumption grew 8.3 per cent year-on-year to 212.7 million tonnes in 2016, as against the global growth of 1.5 per cent, thereby making it the third-largest oil-consuming nation in the world. India is the fourth-largest Liquefied Natural Gas (LNG) importer after Japan, South Korea and China, and accounts for 5.8 per cent of the total global trade. Domestic LNG demand is expected to grow at a CAGR of 16.89 per cent to 306.54 MMSCMD by 2021 from 64 MMSCMD in 2015. The country's gas production is expected to touch 90 Billion Cubic Metres (BCM) in 2040 from 21.3 BCM in 2017-2018 (Apr-Nov). Gas pipeline infrastructure in the country stood at 16,470 km in September 2017.

#### 6) Investment

According to data released by the Department of Industrial Policy and Promotion (DIPP), the petroleum and natural gas sector attracted FDI worth US \$ 6.86 billion between April 2000 and September 2017. Following are some of the major investments and developments in the oil and gas sector: World's largest oil exporter Saudi Aramco is planning to invest in refineries and petrochemicals in India as it looks to enter into a strategic partnership with the country. Foreign investors will have opportunities to invest in projects worth US\$ 300 billion in India, as the country looks to cut reliance on oil imports by 10 per cent by 2022, according to Mr Dharmendra Pradhan, Minister of Petroleum and Natural Gas, Government of India.

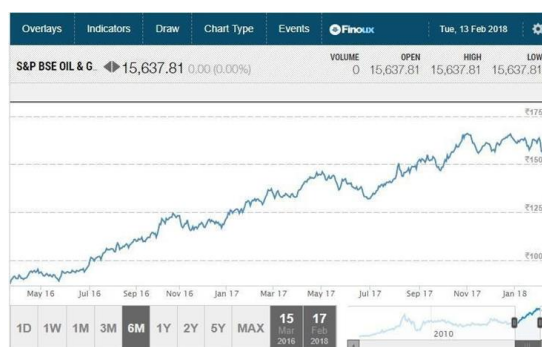
During the bilateral meeting held in Tokyo a memorandum of cooperation was signed on establishing a liquid, flexible and global liquefied natural gas (LNG) market by exploring cooperation in the areas of sourcing, swapping and optimisation of LNG sources. State-owned Oil and Natural Gas Corporation (ONGC) has come up with the new blueprint to increase crude oil production by 4 million tonnes and to double its natural gas production by 2020 to curb the country's import dependency by 10 per cent. The company will raise its crude oil production from 22.6 million tonnes in 2017-2018 to 26.42 million tonnes in 2021- 2022.

## 2. Government Initiatives

Some of the major initiatives taken by the Government of India to promote the oil and gas sector are:

State-run oil firms are planning investments worth Rs 723 crore (US \$ 111.30 million) in Uttar Pradesh to improve the liquefied petroleum gas (LPG) infrastructure in a bid to promote clean energy and generate employment, according to Mr Dharmendra Pradhan, Minister of Petroleum and Natural Gas, Government of India. Gas exchange is planned to bring market-driven pricing in the energy market of India and the proposal for the same is ready to be taken to the Union Cabinet, according to Mr Dharmendra Pradhan, Minister of Petroleum and Natural Gas, Government of India. The Oil Ministry plans to set up bio-CNG (compressed natural gas) plants and allied infrastructure for Rs 7,000 crore (US\$ 1.10 billion) to promote the use of clean fuel.

### 1) Performance of petroleum industry stocks



[Source: [www.moneycontrol.com](http://www.moneycontrol.com)]

### 2) Road Ahead

India's oil demand is expected to grow at a CAGR of 3.6 per cent to 458 Million Tonnes of Oil Equivalent (MTOE) by 2040, while energy demand will more than double by 2040 as the economy will grow to more than five times its current size, as stated by Mr Dharmendra Pradhan, Minister of State for Petroleum and Natural Gas. Gas production will likely touch 90 Billion Cubic Metres (BCM) by 2040, subject to adjustment to the current formula that determines the price paid to domestic producers, while demand for natural gas will grow at a CAGR of 4.6 per cent to touch 149 MTOE. After the completion of certain projects which are undertaken by various refineries, the Refining Capacity of India is expected to reach 256.55 MMTPA by 2019-20. The demand for petroleum products is estimated to reach 244,960 MT by 2021-22, up from 186,209 MT in 2016, and the demand for natural gas is expected to reach 606 MMSCMD by 2021- 22 as against a demand of 473 MMSCMD in 2016-17.

Author (Merve Alanyali) clarifies that the perplexing conduct of monetary business sectors rises out of choices made by numerous merchants. He took advantage of a huge corpus of day by day print issues of the Financial Times from second January 2007 until 31st December 2012 to measure the connection between choices taken in monetary business sectors and advancements in monetary news. He tracked down a positive relationship between's the every day number of notices of an organization in the Financial Times and the day by day

exchange volume of an organization's stock both on the day preceding the news is delivered, and around the same time as the news is delivered. Our outcomes offer quantitative help for the idea that developments in monetary business sectors and developments in monetary news are characteristically interlinked.

Author (Andrew Filan) states that the stock costs go here and there consistently because of changes in organic market. Assuming more individuals need to purchase a specific stock, its market cost will increment. Then again, assuming more individuals need to sell a stock, its cost will fall. This connection among organic market is attached to the kind of information reports that are given at a specific second. The effect of new data on a stock relies upon how surprising the news is. This is because the market is continually incorporating future assumptions into costs.

Author (Yujuan Zhao) in this paper, has tried the connection between the stock returns, corporate execution and speculation chances with the example of recorded organizations in the horticultural, development and monetary enterprises in the A-share securities exchange. Clear factual investigation, connection test and relapse examination demonstrate that there is no connection between stock returns and corporate execution, yet there exists a positive relationship between the stock returns and venture hazards in the development and monetary enterprises.

Author (Martha Thatcher) considers the connection between an organization's income and its stock cost can be muddled. High benefits don't mean a high stock cost, and large misfortunes don't generally prompt a low stock cost. Obviously, without income, it is difficult for organizations to remain in business for long. You could say that two of the central point that impact stock cost are current income and the guarantee of future profit.

Author Sackey Frank Gyimah's examination is intended to analyze the impacts of offer evaluating on an association's exhibition. Net benefit income of the firm were utilized as the reliant variable for the examination while the free factors comprised some trademark pointers that can influence the company's presentation, for example, profit per share, return on value, return on resources, profit from ventures and overheads. This exploration was made to inspect the different variables that decide the impacts of offer estimating on the presentation of the firm. Considering every one of the factors that were utilized for the examination to test its impact on the presentation of the firm, just the income per portion of the firm end up being critical among different factors return on resources and value, profit from venture and overheads at 95% certainty stretch.

Gerardo Zamorano, overseer of putting at Brandes in San Diego says that the discussion of procuring essentials closes that conversation. Albeit the speculation organization was certain with regards to the Russian economy however it was undeniably challenging to discuss Russia to their financial backers. (News was about Russian planes besieging Syrian regular citizens and clinics. Then again Anton Gordon, prime supporter of Indexer.me, says that phony news in the monetary market has been an issue for quite a while.

Monetary news assumes a significant part in deciding the development of stocks as humans (investors) respond to the data gave to them. Subsequently, blend of different occasions is considerably more intricate as there one factor as well as different elements are incorporated which chooses the effect on the stock costs. Two fundamental places of a capital market are that current market costs of a stock is the complete information and assumption for the financial backers on the lookout. What's more, assumptions for an organization are enormously affected by the market news. The case discusses how there is an examination hole between discovering the applicable effect.

The article named, 'What Trump's success can mean for India' by Raj Laxmi Mittal states the adverse consequence that the Trump's standard will have on the Indian IT industry. The new and severe movement strategies, and the obstructions to be set for re-evaluating it administrations are one of the significant worries to the Indian IT area, as U.S. structures a significant piece of Indian IT trade (around 60%). This view doesn't contrast from the different articles and diaries which state how the stock prices are expected to plunge in long run because of this major macroeconomic event. The article named, 'How U.S. decisions sway Indian securities exchanges' by Lokeshwari SK clarifies the expected overall impact of the elections on the Indian stock market. They have utilized occasion study to assess the general effect one week and one month after the election.

Co-authors S.P. Kothari and Jerold B. Warner explains the various methods which can be used to carry the process of event study on various events. The article was titled 'Econometrics of event studies' in which it states the two types of event studies based on period taken for the study. The method which I concentrated on was short-horizon method which is quite reliable when compared to long-term horizon method.

### 3. Design of the Study

#### 1) Title of the project

Impact of macroeconomic events on the market performance of selected listed companies.

#### 2) Objectives of the study

- To study the impact of the macroeconomic events on the share price of the listed companies in the stock market.
- To study the relationship between volume of the shares traded and the share prices before and after the happening of the selected macroeconomic events.
- To study the impact of these events on information technology and petroleum industries separately.

#### 3) Statement of problem

There are different macroeconomic elements affecting the stock costs. Consistently there is some or the other occasion which influences the everyday fluctuations which take place in the price of the shares. It is truly challenging to foresee the effect of such events in a, particularly unique climate as every event has a differing influence on the stocks and their prices. Additionally, the financial news and the market sentiments assume a significant part in the investment portfolios of

investors. Hence, the problem arises as to how much impact did the macroeconomic factors had. The current study is an effort to study this impact in the short term period.

#### 4) Research Questions

- What is the impact selected macroeconomic events on the stock prices of selected companies?
- What could be the outcome of buying stocks of the selected companies at the happening of such events?
- Is there any correlation between the volume of trade and share prices before and after the happening of the event?

### 4. Research Methodology

- Exploratory research*- Since this research cannot contain experiments it is a type of exploratory research. There are dependent variables whose behaviour is examined using independent variables. Exploratory research is meant to explore a certain concept and connect the ideas which the author wants to put across. Exploratory research is conducted in order to identify the extent and nature of cause-and-effect relationships. Causal research can be conducted in order to assess the impacts of specific changes on existing norms, various processes etc. studies may play an instrumental role in terms of identifying reasons behind a wide range of processes, as well as, assessing the impacts of changes on existing norms, processes etc.
- Coverage*- The scope of study of this research will be limited to two industries, namely Information Technology and Petroleum. The companies chosen for the research work are TCS, Infosys, Wipro, HCL Technologies Ltd., ONGC, GAIL, Petronet CNG, and Oil India. Moreover, the time period chosen for the study is three years in which the stock prices of the companies will be taken before and after the specified events.

The events are as follows:

- Delhi Assembly Elections, (7th February 2015)
- Brexit (23rd June 2016)
- U.S. Presidential Elections (8th November 2016)
- The merger of SBI with its associate banks (1st April 2017)

The study has been done on the following:

- Stock prices of the selected companies
- Number of shares traded before and after the happening of independent variables

#### 1) Data Collection

There are mainly two types of data, namely; primary and secondary. This study will be concentrating only on the secondary information provided by the companies and obtained through different sources and media.

#### 2) Secondary data-

Data will be derived from the official website of Bombay Stock Exchange.

#### 3) Statistical tools to be used

- The percentage change of the stock prices will be seen before and after the selected macroeconomic events
- The method of 'event study' will be used in order to compare the impact on the companies from the selected macroeconomic factors
- Then correlation will be derived amongst the share price and the volume of shares traded before and after the happening of the event.

### 5. Limitations of the study

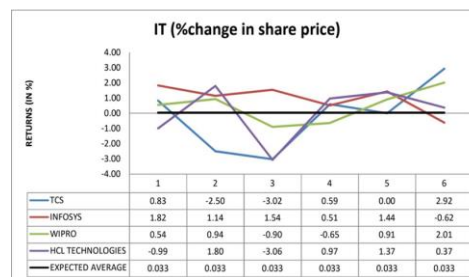
- Quantification of the impact is difficult as it has a lot of external variables impacting its outcome.
- The study is limited only to selected companies in the shortlisted sectors, hence it cannot give a generalized conclusion for the stock indices.
- The period or the time taken for the study might impact its outcome depending on the phase of market (bearish or bullish).

### 6. Data Analysis

#### A. Event 1 - Delhi assembly elections industry wise analysis: Industry 1- IT

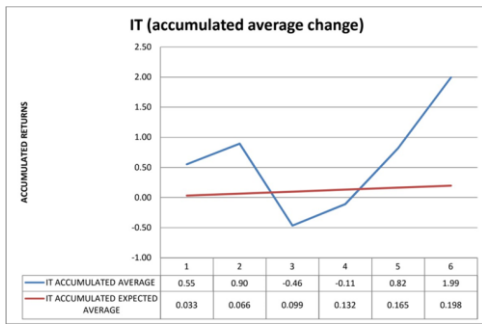
##### 1) General understanding

IT is one of those sectors which is rarely affected by events such as assembly elections of a state albeit, in specific conditions, it may show an impact when the state is the focal point of the country (as far as legislative issues). The IT business in India is exceptionally autonomous of such events, as the main investor group in this industry are the promoter group and foreign investors. Both these groups for the most part depend on the incident of worldwide occasions like the US presidential elections and Brexit.



##### 2) Analysis

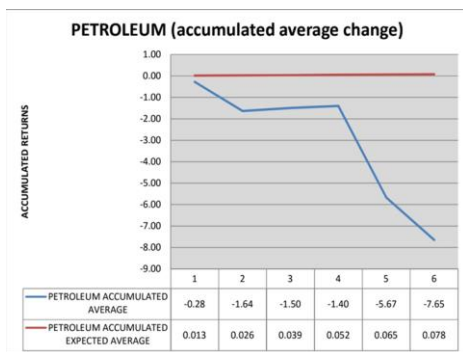
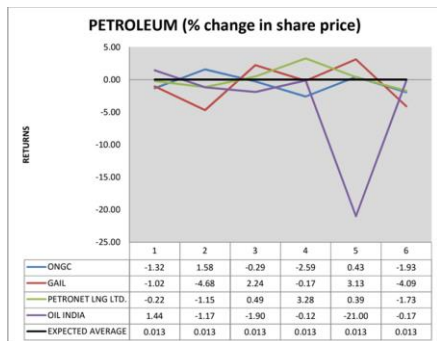
The IT business with a normal return of .033% consistently saw a positive return after the event of the Delhi Assembly Elections. Despite the fact that companies saw a negative return from the second day of the event, it didn't bother the investors as stocks saw a positive plunge on the third day after the occurrence. Since each stock on the fifth day gave returns more than that of the normal returns, it can be concluded that stocks of companies in the IT sector over performed their average return rate, and Delhi Assembly Election had a positive impact on market sentiment.



The above diagram represents the accumulated returns from the day of the event until the closing of the market in the respective week. Actual accumulated returns amounted to 1.99% as against the expected accumulated average return of a mere 0.198%. This also concludes that the elections had a positive impact on the IT industry. A possible reason for it could be the ease of trade and legal obligations, as promised by the AAP government.

3) Industry 2- petroleum: General understanding

In general, Petroleum Technology is one of the most sensitive industries when it comes the deflections in the stock market. As the main investor group in this industry is the foreign investors, the happening of international events such as U.S. Presidential Elections, and Brexit have a major impact on the stock performance.

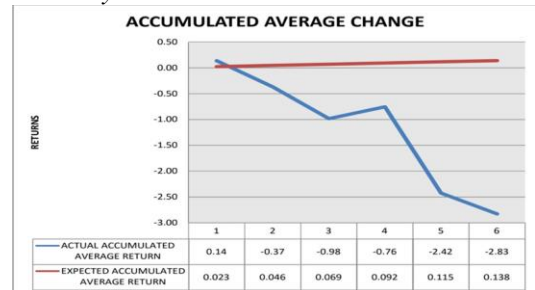


4) Analysis

The petroleum industry with an expected average return of .013% daily saw a negative return after the happening of Delhi Assembly Elections. Even though the companies saw a positive return on the 2nd day after the event, it did not help the stock to recover to its average rate of return, as it was just a play of unsuccessful speculation by the investors to gain small-term

profit. All stocks on the 5th day gave returns less than that of the expected average returns concluding that stocks of companies in the petroleum sector underperformed their average return rate of return, and the Delhi Assembly Election had a negative impact on market sentiment. The above diagram represents the accumulated returns from the day of the event until the closing of the market in the respective week. Actual accumulated returns amounted to -7.65% as against the expected accumulated average return of 0.078%. This also concludes that the elections harmed the IT industry. One of the major reasons for it was the selling of shares worth net Rs. 660.30 crore by foreign portfolio investors after the happening of this event.

5) Overall analysis



It is very evident from the above diagram that the impact of the Delhi Assembly Election on the two industries combined had been negative. Although, the part can be attributed to negative performance in the petroleum industry the impact will be short term, as said by most analysts. The negative outlook is based on the AAP's poor performance during its short-lived government in 2013 and its campaign plank, which is regarded as anti-business. But even after the negative impact of the stocks the market will eventually continue to give maximum weightage to the ongoing reform agenda and its execution at the national level. Even then this study becomes important for the small investors (in terms of shareholding) in order to gain or to avoid any abnormal loss in short term.

B. Event 2 - Brexit industry wise analysis: Industry 1 - IT

1) Analysis

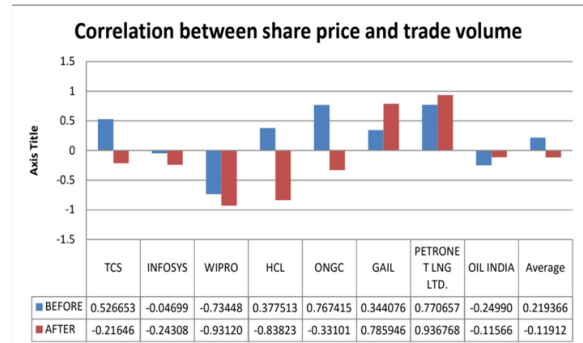
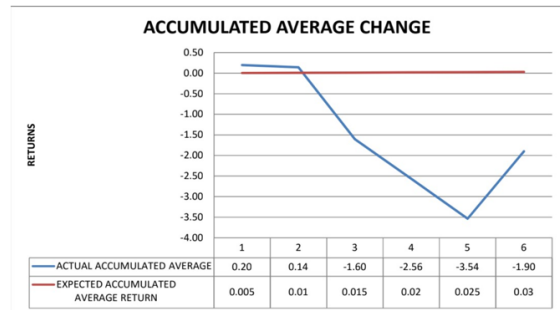
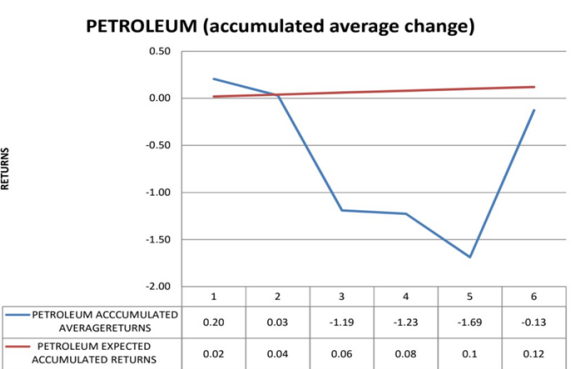
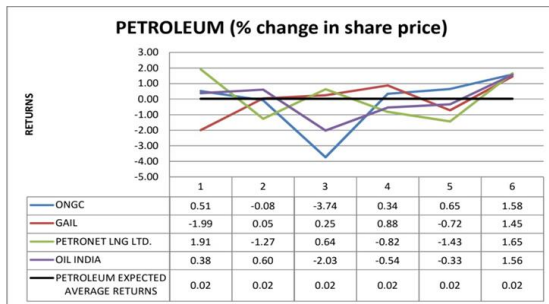
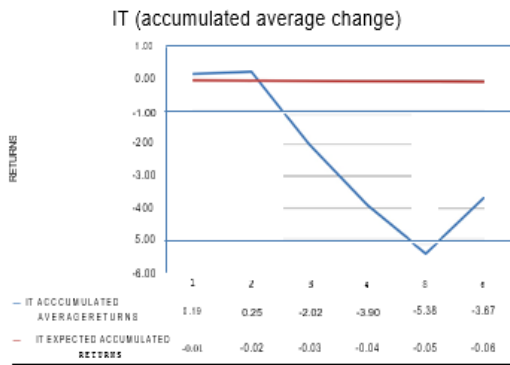
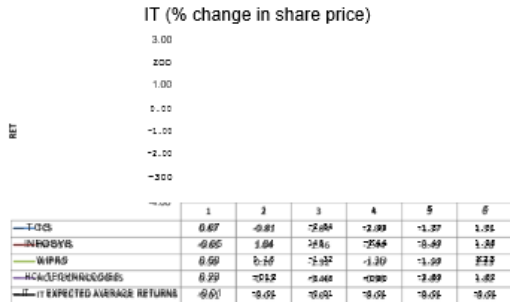
The IT industry with an expected average return of -0.01% on a daily basis, saw a negative return after the announcement of Brexit. The above diagram represents the accumulated returns from the day of the event until the closing of the market in the respective week. Actual accumulated returns amounted to -3.67% as against the expected accumulated average return of -0.06%. This concludes that Brexit harmed the IT industry. One of the major reasons for it was a high dependency on IT exports in India in the UK and continental EUROPEAN market, amounting to 11% of its exports.

2) Industry 2- Petroleum: Analysis:

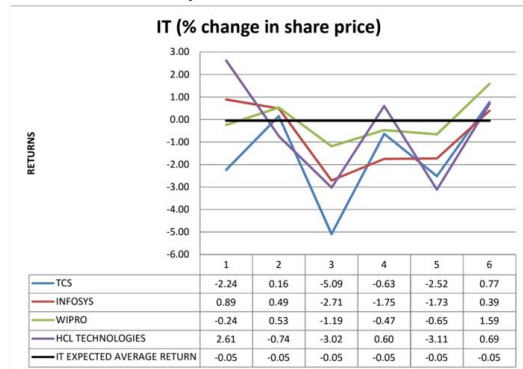
The petroleum industry with an expected average return of .002% on a daily basis saw a negative return after the happening of Brexit. The above diagram represents the accumulated returns from the day of the event until the closing of the market in the respective week. Actual accumulated returns amounted



to -0.13% as against the expected accumulated average return of 0.12%. This also concludes that Brexit hurt the IT industry. One reason can be attributed to softening of the oil prices after the Brexit announcement. The oil prices came down, the Brent crude oil from \$50 to around \$47 to \$45 adversely affecting the market.



It is very evident from the above diagram that the impact of Brexit on the two industries combined has been negative. But the impact is expected to be short term. According to the IT lobby group Nasscom, as much as 30 per cent of the industry's \$100 billion revenue comes from the European market, which is the second largest for India's IT-BPM sector. Hence, the uncertainties will lead to delay in investment outlays in major projects to safeguard their investments. While talking about the petroleum industry, the prices of petroleum products declined by 5%. Hence, given all the reasons and the subsequent analysis, it can be concluded that Britain's decision to exiting the European Union had a cumulative negative impact on the IT and Petroleum industry.



C. Event 3 - US presidential election industry wise analysis: Industry I- IT

1) General understanding

U.S. Presidential Election is viewed as the worldwide occasion with the most elevated measure of effect on securities exchanges around the world. There is no question that the Indian IT industry is only a yield of the US market with regards to its export. The IT business in India is profoundly subject to such events, as the main investor group in this industry are the promoter group and foreign investors, both being highly

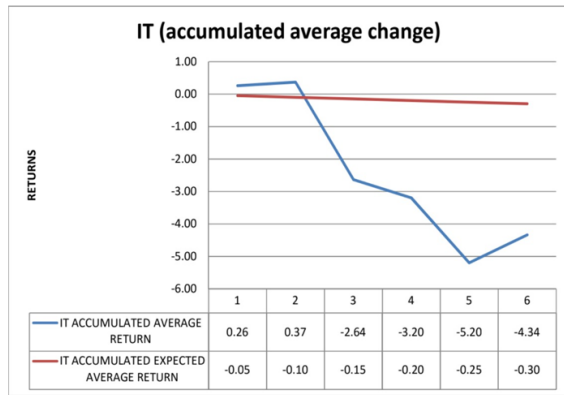
3) Overall Analysis



impacted by the happening of international events such as U.S. presidential elections, and Brexit.

2) Analysis

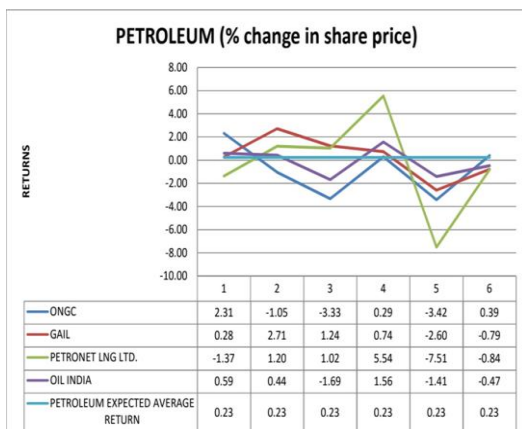
The IT industry with an expected average return of -0.05% daily, saw a negative return after the happening of the US presidential election.



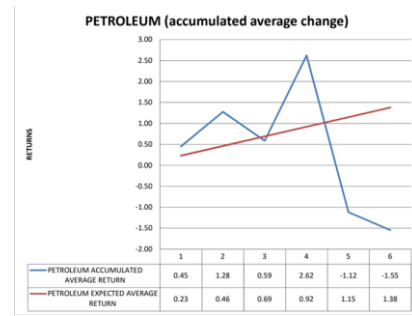
The above diagram represents the accumulated returns from the day of the event until the closing of the market in the respective week. Actual accumulated returns amounted to -4.34% as against the expected accumulated average return of -0.03%. This concludes that U.S. presidential election harmed the IT industry. Two reasons for this could be the high dependency of IT exports in India on the US amounting to an astonishing 62% of its exports and the uncertainty of President Donald Trump's stance on its relationship with India.

3) Industry 2- petroleum: General understanding:

In general, Petroleum industry is one of those industries which are one of the most sensitive industries when it comes to deflections in the stock market due to happening of various macroeconomic events. Although many a times certain news doesn't affect the happenings in petroleum industry. The petroleum industry in India is highly dependent of international events, as the main investor group in this industry are the foreign investors. These groups generally rely on the happening of international events such as U.S. presidential elections, and Brexit, which are more likely to impact the happenings in the petroleum industry in India and worldwide.



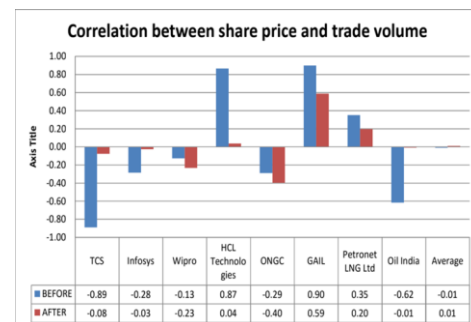
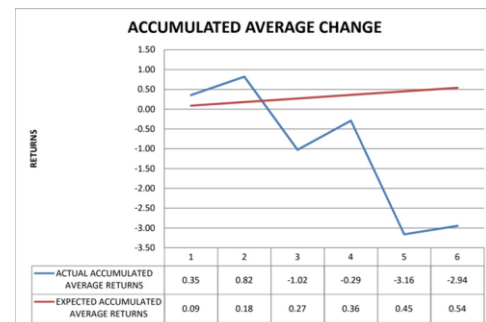
4) Analysis



The petroleum industry with an expected average return of 0.23% daily saw a negative return after the happening of the US Presidential Election. From the above graph, it can be interpreted that there was not a great impact on the company's share prices until the 4th day after the event. As the uncertainties about the relationship of the newly elected US president on trade with India was still uncertainty. Barring Petronet LNG LTD. the industry as such was not majorly affected but a negative impact is evident.

5) Overall analysis

It is very evident from the above diagram that the impact of the US presidential election on the two industries combined had been negative. The negative result is based on the declined market sentiment due to the uncertainty of the trade relations which will be proposed by the new president. This being the case as the USA is the hub for the Indian export market, accounting for the highest amount of exports.



Many had feared that Trump's coming to power could lead to job losses for Indians and a protectionist approach by the US, a market that accounts for about 70 per cent of the Indian IT industry's revenue. However, Nasscom claimed that many of Trump's observations during the campaign concerning high-skilled immigration and outsourcing were based on

‘fabrications put out by critics’ of the sector. Hence, given all the reasons and the subsequent analysis, it can be concluded that Donald Trump’s election as the US president had a cumulative negative impact on the IT and Petroleum industry.

### 7. Findings of the Study

There have been three major findings during the tenure of this research project:

- 5 out of 6 cases have shown a sudden cumulative fall, indicating sudden panic among the investors within 4 days of the event.
- The second and more interesting finding of this study is that 4 out of 6 cases showed a cumulative recovery by the end of the week after the happening of the respective event.
- Correlation analysis showed that the correlation between the share price and trade volume reduced after the happening of respective events in 16 out of 24 cases. This implies that after such events occur the reliability of the trade volume concerning its share price is reduced.

### 8. Conclusion

The occurring of macroeconomic occasions is something that gets everybody's eyes. All investors whether big or small (as far as shareholding), are influenced and consequently, the market sentiment is fundamentally affected. More often than not small investors become the victim in question, as they are neither able to drive the new market sentiment nor change their investment portfolio in time. Consequently, investigation of these events and their effect assist the investors with settling on more logical choices at their occurrence. It likewise opens up the window for examiners to acquire benefits in the short run. Occasion study has been instrumental throughout history, to foresee the fate of comparative happenings and stay away from botches done previously. This investigation is additionally a little committed to the development of a solid data set which will help in additional examination and study.

### 9. Annexure

#### 1) Tables made for analysis: Brexit

EVENT TIME	TC S	INFO SYS	WI PRO	HCL TECHN OLOGIES	ON GC	GA IL	PETRO NET LNG LTD.	OIL IN DIA	IT EXPECTED AVERAGE RETURNS	PETROLEUM EXPECTED AVERAGE RETURNS
067	0.67	-0.65	0.50	0.23	0.51	-1.99	1.91	0.38	-0.01	0.02
101	-0.81	1.04	0.16	-0.12	-0.08	0.05	-1.27	0.60	-0.01	0.02
204	-2.84	-1.46	1.32	-3.46	-3.74	0.25	0.64	-2.03	-0.01	0.02
309	-2.99	-2.44	1.20	-0.90	0.34	0.88	-0.82	0.54	-0.01	0.02
407	-1.37	-0.49	1.19	-2.89	0.65	-0.72	-1.43	0.33	-0.01	0.02
501	1.51	1.28	2.23	1.82	1.58	1.45	1.65	1.56	-0.01	0.02

EVENT TIME	TC S	INFO SYS	WI PRO	HCL TECHN OLOGIES	ON GC	GA IL	PETRO NET LNG LTD.	OIL IN DIA	IT EXPECTED AVERAGE RETURNS	PETROLEUM EXPECTED AVERAGE RETURNS	ACTUAL AVERAGE RETURNS	PETROLEUM AVERAGE RETURNS	IT ACCUMULATED AVERAGE RETURNS
067	0.67	-0.65	0.50	0.23	0.51	-1.99	1.91	0.38	-0.01	0.02	0.20	0.20	0.19
1015	-0.15	0.38	0.67	0.11	0.43	-1.94	0.64	0.99	-0.02	0.04	0.14	0.03	0.25
20299	-2.99	-1.08	0.65	-3.35	-3.31	1.70	1.28	-1.04	-0.03	0.06	-1.60	-1.19	-2.02
30598	-5.98	-3.51	1.85	-4.26	-2.90	7.82	0.46	-1.59	-0.04	0.08	-2.56	-1.23	-3.90
40735	-7.35	-4.00	3.04	-7.15	-2.31	2.54	-0.97	-1.92	-0.05	0.1	-3.54	-1.69	-5.38
50584	-5.84	-2.72	0.81	-5.33	-0.70	4.09	0.68	-0.36	-0.06	0.12	-1.90	-0.13	-3.67

#### 2) U.S. presidential elections

TC S	INFO SYS	WI PRO	HCL TECHN OLOGIES	ON GC	GA IL	PETRO NET LNG LTD.	OIL IN DIA	IT AVERAGE RETURNS	PETROLEUM AVERAGE RETURNS	IT EXPECTED AVERAGE RETURNS	EXPECTED AVERAGE RETURNS
-2.24	0.89	-0.24	2.61	2.31	0.28	-1.37	0.59	0.26	0.45	-0.05	0.23
0.16	0.49	0.53	-0.74	-2.71	1.05	1.20	0.44	0.11	0.82	-0.05	0.23
5.09	-2.71	-1.19	-3.02	-1.23	3.33	1.02	-1.69	-3.00	-0.69	-0.05	0.23
0.63	-1.75	-0.47	0.60	0.29	0.74	5.54	1.56	-0.56	2.03	-0.05	0.23
2.52	-1.73	-0.65	-3.11	-3.42	-2.60	-7.51	-1.41	-2.00	-3.74	-0.05	0.23
0.77	0.39	1.59	0.69	0.39	-0.79	-0.84	-0.47	0.86	-0.43	-0.05	0.23

EVENT TIME	TC S	INFO SYS	WI PRO	HCL TECHN OLOGIES	ON GC	GA IL	PETRO NET LNG LTD.	OIL IN DIA	IT EXPECTED AVERAGE RETURNS	PETROLEUM EXPECTED AVERAGE RETURNS	ACTUAL AVERAGE RETURNS	PETROLEUM AVERAGE RETURNS	IT ACCUMULATED AVERAGE RETURNS
067	0.67	-0.65	0.50	0.23	0.51	-1.99	1.91	0.38	-0.01	0.02	0.20	0.20	0.19
1015	-0.15	0.38	0.67	0.11	0.43	-1.94	0.64	0.99	-0.02	0.04	0.14	0.03	0.25
20299	-2.99	-1.08	0.65	-3.35	-3.31	1.70	1.28	-1.04	-0.03	0.06	-1.60	-1.19	-2.02
30598	-5.98	-3.51	1.85	-4.26	-2.90	7.82	0.46	-1.59	-0.04	0.08	-2.56	-1.23	-3.90
40735	-7.35	-4.00	3.04	-7.15	-2.31	2.54	-0.97	-1.92	-0.05	0.1	-3.54	-1.69	-5.38
50584	-5.84	-2.72	0.81	-5.33	-0.70	4.09	0.68	-0.36	-0.06	0.12	-1.90	-0.13	-3.67

3) Delhi assembly elections

TCS	INFO SYS	WIPRO	HCL TECHNOLOGIES	ONGC	GAIL	PETRO NET LNG LTD.	OIL INDIA	IT AVERAGE RETURN	PETROLEUM AVERAGE RETURN	IT EXPECTED AVERAGE RETURN	EXPECTED AVERAGE RETURN
-2.24	0.89	-0.24	2.61	2.31	0.28	-1.37	0.59	0.26	0.45	-0.05	0.23
0.16	0.49	0.53	-0.74	1.05	-2.71	1.20	0.44	0.11	0.82	-0.05	0.23
5.09	-2.71	-1.19	-3.02	3.33	-1.24	1.02	-1.69	-3.00	-0.69	-0.05	0.23
0.63	-1.75	-0.47	0.60	0.29	0.74	5.54	1.56	-0.56	2.03	-0.05	0.23
2.52	-1.73	-0.65	-3.11	3.42	-2.60	-7.51	-1.41	-2.00	-3.74	-0.05	0.23
0.77	0.39	1.59	0.69	0.39	-0.79	-0.84	-0.47	0.86	-0.43	-0.05	0.23

EVENT TIME	TCS	INFO SYS	WIPRO	HCL TECHNOLOGIES	ONGC	GAIL	PETRO NET LNG LTD.	OIL INDIA	IT EXPECTED ACCUMULATED RETURNS	PETROLEUM EXPECTED ACCUMULATED RETURNS	ACTUAL ACCUMULATED AVERAGE	PETROLEUM ACCUMULATED AVERAGE RETURNS	IT ACCUMULATED AVERAGE RETURNS
0.67	-0.65	0.50	0.23	0.51	-1.99	1.91	0.38	-0.01	0.02	0.20	0.20	0.19	
1.015	-0.38	0.67	0.11	0.43	-3.194	0.64	0.99	-0.02	0.04	0.14	0.03	0.25	
2.299	-1.08	-0.65	-3.35	-3.33	-1.170	1.28	-1.04	-0.03	0.06	-1.60	-1.19	-2.02	
3.598	-3.51	-1.85	-4.26	-2.97	-0.782	0.46	-1.59	-0.04	0.08	-2.56	-1.23	-3.90	
4.735	-4.00	-3.04	-7.15	-2.32	-1.254	-0.97	-1.92	-0.05	0.1	-3.54	-1.69	-5.38	
5.584	-2.72	-0.81	-5.33	-0.74	-0.409	0.68	-0.36	-0.06	0.12	-1.90	-0.13	-3.67	

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