MACROECONOMIC FACTORS ON INDIAN STOCK MARKET

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ABSTRACT
Stock market is a platform where buyers and sellers indulge into buying and selling securities like equity shares or convertible bonds or government securities etc. BSE was the Asia’s first stock exchange to be established. Indian stock market has seen a lot of development since 1990s. Stocks could be traded online after 1992, SEBI was established, there has been increase in the number of investors in India and there has been inclusion of commodity trading. Along with these developments, India’s position has also improved globally because of the presence of stock markets. India currently has a market capital of $2.6 trillion dollars. These developments were possible because of the companies going for IPOs, FPOs and investors investing in the companies, companies contributing towards the objectives and focusing towards the growth of the company. The investors who understand the market trends study the market at a higher rate as compared to anyone else. The factors can be macro or micro economic. Macro economic play a much larger role when it comes to the stock market. We took into consideration 5 economic factors related to and impacting the stock market. These are inflation, interest rate, FDI, exchange rates and money supply. The study found out there exists significant relationship between these factors and Indian stock market but some have much greater impact that is money supply and some have least that is interest rate. Apart from these, there are many other macro and microeconomic factors which need to be studied further for better understanding.

Keywords- Indian stock market, Sensex, interest rate, exchange rate, inflation, foreign direct investments, money supply, investors, impact.

I. INTRODUCTION
Stock exchanges provide a platform to buy and sell various securities such as shares of listed companies, bonds, debentures, public deposits and other instruments of finance. In India stock market has been prevailing since 1875 and currently India boasts 28 stock exchanges in the country. BSE and NSE are the oldest and the most prominent stock exchanges in India. BSE is the 10th largest stock exchange in the world and NSE is the 11th largest when it comes to market capitalization. This study of ours is gonna determine the impact of macroeconomic factors on the Indian stock markets. The scope of our study focuses on money supply, exchange rates, FDI, inflation and interest rates in our country along with their relationship with the Indian stock market.

II. LITERATURE REVIEW
According to all the researchers and analysts, stock exchanges are affected by various macro and micro economic factors. Both of these factors play an important role in determining the attitude of the investors towards buying and selling securities and also they showcase the effect on stock prices. Macroeconomic factors play a much bigger and an important role when comes to stock markets. This study focuses only on one of the macroeconomic factors, i.e. money supply, exchange rates, interest rates, FDI and inflation.

1) Pal and Mittal (2011) investigated the relationship between the Indian stock markets and micro economic variables using quarterly data for the period of January 1995- December 2008 with the Johansen’s co-integrated framework. Their analysis revealed that there was a long term relationship between the stock market index and the macro economic variable. The results also showed that inflation and exchange rate have a significant impact on BSE Sensex but the interest rate was insignificant. (Singh, 2016)

2) FDI refers to the investment which is made by a person or a company in our country from another country. In many sectors now India has liberalized the rule of FDI up to 100%. FDI
shows the interest of people in the economy of our country. According to Asha E Thomas and her study, which is based on the impact of FDI on Indian economy, stock market movements are dependent to a greater extent on the FDI inflows into the country (Thomomas, 2018)

3) Money supply is the total circulation of currency within the country. In our country the currency is printed by reserve bank of India, generally its believed that more the money supply in the economy more is the purchasing power of the investor thereby boosting the overall stock market but some experts argue that stock prices cause change in the money supply and not the other way round, they state that money can be measured in many ways and money can bee used for settlement of debt but according to the research conducted by Leena Shiblee, the strongest variable effect among our collection was money supply. (Shiblee, 2009)

4) Interest rate is the rate at which lendee borrows from the lender. On the basis of this study this process depends on the Fed rates, which are the rates at which the central bank of the world that lends money to the Central Banks of various countries. If the fed rates are increased, the borrowings of the commercial banks of various countries from the Central bank of those specific countries would reduce, but If the Fed rates are decreased then the opposite would happen. Less interest rates mean, more borrowing, which means more investments which proves to be beneficial for the companies (arora, 2010).

5) Exchange rate is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country’s currency in relation to another currency. If the exchange rate collapses sharply, it will trigger a milder fall of the stock market. Because of the joint causality, a collapse in the stock market will trigger exchange rate appreciation. Similarly, if there is a stock market collapse, the exchange rate will appreciate and cause a rebound in the stock market. Thus, the joint relationship between the two markets aids selfrecovery during a financial crisis. (Dimitrova, 2005 )

III. RESEARCH DESIGN

STATEMENT OF PROBLEM
From 1990s, India has emerged as one of the fastest developing economies in the world. Its growth is remarkable and when it comes to factors like GDP, it is the 3rd most developing country on GDP growth basis. There are many factors which contribute towards that. Amongst that factor one of the major factor is stock market growth of the country. With growth comes challenges as well as the risks involved are at a huge level. Stock market, according to some, means wasting money, but this is not backed up by research and these are just assumptions and signs that the study is not carried out efficiently. Therefore, in order to understand some of the major factors which contribute towards fluctuations in stock markets, this research is being carried out and to gain knowledge regarding how some major economic factors come to play in our country.

OBJECTIVES
• To understand the relationship between the macroeconomic factors and stock market.
• To understand the effects of these factors on the stock market

HYPOTHESIS
H1- There exists a relation between economic factors and stock market of India. This is the alternate hypothesis because there exists a relation between economic factors and stock market of our country.

SOURCES OF DATA
We are opting for secondary sources of data that includes the co relation of exchange rate, i.e. We are gonna use graphs for this study by taking past records of all these factors which will showcase the relation with stock market prices within our country.

EXPECTED OUTCOME
The expected outcome of this study will basically determine the relationship between the macroeconomic factors and stock market. By determining the relationship between these factors we can understand how they
influence the stock market of our country and their impact on investors perspective and risk taking ability. We have considered 5 major macroeconomic factors, i.e money supply, inflation, interest rates, exchange rates and FDI. These factors can have either a positive or a negative impact on stock prices.

LIMITATIONS OF THE STUDY
The factors which we are gonna cover in our study are limited to five and there are many more macroeconomic variables like industrial index production, consumer inflation index, etc., which have a huge impact on the stock market and also our study is limited to the population in India only but macroeconomic variables have an impact on a larger basis. Hence, the result of the study would only help us to gain exposure in limited areas.

The second limitation of this study is that, our basis of the study is secondary data and the data which has been updated before is used. So, therefore we are only able to access the past information and are not able to evaluate the current situation and the relation between macroeconomic variables and stock market in this highly growing economy.

DATA ANALYSIS TOOLS

![Chart showing stock market performance and FDI inflows](image)
IV. DATA ANALYSIS AND INTERPRETATION

As shown in the first figure which shows the relation between Exchange rate of Rupee and stock market, we can infer that in 2006 Sensex was at 9390 points when the Rupee was at Rs 45.09 equal to 1 dollar. We can see between 2006 till March 2009 Sensex had increased to almost 20,000 points where Rupee was almost
equal to Rs 40 to one dollar. From 2009 the Sensex had crashed about 12000 points which is seen by a huge fall and where it has been stated that Rupee was at Rs 51.88 to one dollar and Sensex was at 8160 points. In between mid of 2009 till mid of 2013 Sensex was in between 15000-20,000 points and Rupee was also fluctuating between Rs45-50 per dollar. It starts dropping in between 2012- mid of 2013 where it reaches Rs55-60 mark per dollar. It touches all time ever low till that time in August 2013 where Sensex is at 17,906 points and Rupee is being traded at Rs64.04 per dollar. In between end of 2013 and end of 2016 Sensex reaches a little above 30,000 points and Rupee is traded at in between Rs 60-65 per dollar. In start of 2017 Rupee touches an all time low of Rs 69 and the Sensex falls from its 30,000 mark. In June 2017 Sensex touches its highest that is 31,156 and Rupee currently here was trading at Rs 64.24 per dollar.

The second graph shows the relation between FDI and Indian stock market. From June 2005 till November 2006 there have been fluctuations in the FDI as well as the stock market. In December 2006 there’s a boost in the FDI by 5 times that is straight from 1 billion dollars to 5 billion dollars and the market at this time has also reached its highest that near about 12,500-13,000 points. After that there is a decrease in the FDI in our country, but in December 2007 stock market reaches its highest ever mark, touching near about 20,000 above mark for the first time. In March 2008, the FDI is the highest in India according to this data that is nearly 5.5 billion dollars, but at this time the market has fallen from its near about 20,000 mark to nearly ending at the 15,00 mark. The FDI continues to decrease after that till December 2008 and so does the market where it touches its mark of near about 10,000 points. It becomes stagnant in December 2008 but after that it keeps on increasing till it reaches its near about mark of 17,000 points. and this is till March 2010 but the FDI hasn’t gone above 5.5 billion mark since March 2008 and in the march of 2010 FDI stands at little above $2.1 Billion.

The third graph is the relation between inflation and Sensex of our country. This is the data taken for 2 years that is from January 2012-afterwards of May 2014. When inflation rate was a little below 8% the Sensex was at its lowest in between these 2 years that is below 16,000 points. Inflation reached to above 8% and the Sensex crossed the 18,000 mark. When inflation reached above 10% Sensex again fell below 18,000 points and again almost reached 16,00 below mark. Inflation rate remained stagnant from May 2012- September 2012 and the Sensex was also fluctuating but after September 2012 it increased and reached the above 19,000 mark. From January 2013 inflation started increasing and fluctuated between 10- below 11% mark. Sensex was stagnant at this time, but it started to grow after that, it rose above 21,000 points. Inflation reached its highest level ever that is 11% after September 2013 and the Sensex fell, but not that much it was still above the 20,000 mark. Inflation started falling after that from 9-10% to ultimately a little above 8% that is in February 2014. Sensex was ever increasing after that with a little ups and downs and fluctuations were also there in the inflation rates at that time and it reached its all time low in this data that is below 8% and the Sensex was still increasing and was in between 25,000-26,000 mark. Inflation regained its 8% mark back after May 2014 but at that time Sensex had already breached its 26,000 mark.

According to the 4th graph which shows the relationship between the interest rate and the Sensex from September 1996 to September 2016 the interest rate was highest in September 1996 which was a little above 14% the interest rates then drop down to its lowest levels in these 20 years, which was a little below 4% and the Sensex at this time to reach its highest mark in 8 years which was a little above 5000 points. The interest rate started to fluctuate after that, but Sensex was ever increasing and in between July 2007 and May 2008 the Sensex reached its highest point in these 11.5 years and interest rate at that time was a little above 6%. After May 2008 interest rate grew to 9% and the Sensex fell by 5000 points ultimately reaching the 15000 mark. In the start of year 2019 the interest fell till 4-6%, but the stock market again fell by 5000 points reaching its 10000 mark. After March 2009 the interest rate remains stagnant till September 2011 but the market was able to reach its 15000 mark. After September 2011 the interest rate remain stagnant between 7% to 9%, but the stock market started booting up after that where it ultimately reached its highest mark of 30000 points in January 2015 but the interest rate remain stagnant at that point of time.
The 5th graph is the representation of the relationship between money supply in the economy and the stock market as the trend showcases there has been an increase in the money supply throughout 1975 to 2010 with a very little downfall in 2000 and along with that as the graph showcases the market stock has increased from throughout 1975 to a little before 1990. After 1990 there is an increase in the market stock till 1995 at this point the market stock is worth at least 1100 billion dollars. After 1995 the market stock remains stagnant till 2001 it almost reaches 1250 billion dollar mark and falls a little after that, but after 2002 there has been an increase in the market stock till 2010 and the market stock had reached above 1600 billion dollars and the money supply in the economy has also been highest in this point of time.

V. FINDINGS AND SUGGESTIONS
As stated above, we found out the relationship between the 5 macroeconomic factors and the stock market of our country. According to the data analysis all these 5 factors play a major role but the most prominent out of them is the money supply in the economy because as we have seen above with the increase in money supply there has been an increase in market stock as well with the least fluctuations in their relationship and according to the analysis above interest rate plays the least prominent role in regards to its relationship with the stock market because even though interest rate was increasing as seen above the Sensex was also increasing side by side therefore it can be easily stated the interest rate has the weakest impact on the stock market as compared to the other 4 factors while the money supply has the most significant impact on the markets.

VI. CONCLUSION
According to our research conducted above macroeconomic variables have a very important relationship with stock markets and also have a huge impact to any kind of changes in the stock markets. Money, is the important factor according to our research and has the most significant impact as compared to other four macroeconomic variables considered above while interest rate is the least significant factor and hardly impacts the changes in the stock markets. Even though, this research of ours has given us the result of the relationship between these 5 factors and the stock market, there are many other macroeconomic as well as microeconomic variables which affect the stock market of any country. At last, we would like to conclude macroeconomic variables have a huge impact and share a good relation with stock markets. Stock markets are influenced by any change in macroeconomic variables be it positive or negative and hold a major role in any economy’s development and growth.

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