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A Study on Impact of Macroeconomic Variables on Bombay Stock Exchange (BSE) Sensex

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ABSTRACT

The Economic policies of number of countries have been brought changes in the world wide. The world market has integrated through the concept of globalization and liberalization. Through the financial and economic theory, Volatility becomes the important issue to the consumer for risk averse. The level of participation and investment in the stock market activity has been reduced due to increases of risk but the investors in the stock market always likely to adopt more risk in order to return more profit. The financial sector of every economy has been played by a major role of stock markets. The stabilization of financial sector has been driven by the efficient capital market. According to the available new information the stock prices are adjusted swiftly in the capital market. The purpose of this study is to analyze the consequence of Macroeconomic variables on Bombay Stock Exchange Sensex through the data collected from the period of April 2008 to March 2018. Using SPSS software, the Descriptive statistics and Correlation developed which shows the relationship between share price & various factors affecting the same. The understanding of behavior of Macroeconomic variables which affects the stock market indexes is very helpful for policy makers, Institutional investors, traders and all other stakeholders to take investment decision.

Keywords: Macroeconomic, Inflation, Price, Institutional Investor, Investment Decision, Policy.

JEL classification: B22, E31, G23, G11, P42, F68

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INTRODUCTION

Indian economy acts as a world sixth largest economy by nominal GDP and the third largest by purchasing power parity. The Indian Stock Market plays a major role in growth of the Indian economy. Indian stock market is a physically institutionalized set up where instruments such as shares, securities, bonds, debentures etc were traded and it avail the pricing information about trading. Index fulfilled the purpose of projecting the moods of the stock market. The major stock exchanges in India are BSE, NSE, and OTCEI and Bombay stock exchange is the biggest stock exchange in India. It is also the first exchange in the country and second in the world to receive Information Security Management System Standard BS 7799-2-2002 certification for in Bombay On-Line Trading System (BOLT). BSE's popular equity index, the SENSEX is India's most widely tracked stock market benchmark index. It also traded internationally on the EUREX as well as leading exchanges of BROS nations (Brazil, Russia, China and South Africa). It is connected with the four indices such as Sensex, BSE-200, BSE-500, National index. The sensitive index (SENSEX) is a stocks index of the BSE which was enlarged to include 50 stocks in 2000 but soon was cut down to the original value. BSE-200 is a 200 stock share index of the BSE (including the 30 stocks of the SENSEX) which has its Dollar version too – the Dollex. BSE-500 is representing major industries and many sub sectors of the economy with information technology getting a significant weightage. National Index of 100 stocks being quoted nationwide (Bombay, Delhi, Kolkata, etc.) was developed to give broader/wider representation of the stock market since the Sensex consists of only 30 stocks. The

macroeconomic variable is one of the major factor among the numerous factors those made the investors to take decision to invest or withdraw funds in the Bombay Stock Exchange Sensex. The macroeconomic variables that affected the Bombay stock exchange Sensex are gross domestic product, unemployment, inflation, money supply, budget deficits, international trade and exchange rate etc. The recent trend of the economy has been prevailed by the macroeconomic variable. Government can't make their rules, policies, and regulation without contemplating the macroeconomic variables. Macroeconomic indicators are already exhibiting deterioration as rupee is depreciating against dollar, inflation is mounting, interest rates and gold prices are increasing and industrial production has started to decline. The present study selected the four variables such as CMR, FXR, IIP, FIIs, M3, REER, WPI to influence the macroeconomic variable on BSE Sensex which helps the policy makers, institutional investors, traders and all other stakeholders to take investment decision and also it reflect the future performances of corporate houses.

2. LITERATURE REVIEW

BSE Sensex is used as the assignee for the Indian stock market and Macroeconomic variables, which played an important role in Indian economy includes Exchange Rate, Balance of Trade, Average Call Money Market Rate, Inflation Rate, Industrial Production, 3 Months Treasury Bill Yield To Maturity, Money Supply, Gold Rate, MSCI, 3months Treasury Bill Rate of US Market, Volume of BSE, Volatility of BSE, Foreign Institutional Investment and Mutual Fund.

This works "A Study on Impact of macroeconomic variables on BSE Sensex" reveals about the two broad categories. The first one reveals that impact of macroeconomic factors on stock prices and the second one discuss about the relationship between the stock market volatility and volatility in the macroeconomic indicators.

Naik and Padhi (2012) has found that there will be a long run equilibrium relationship exists between the Indian stock market and macroeconomic variables and the analysis are revealed that they are co-integrated by studying the relationship between the Indian stock market and various macro economic variables such as industrial production index, wholesale price index, money supply, treasury bills rates and exchange rates from the time period 1994 to 2011.

The study revealed that stock prices are directly relate with money supply and industrial production but has inversely related with inflation. Stock prices were insignificantly determined by the both the exchange rate as well as short term interest rate. there is bidirectional causation exists between industrial production and stock prices but

unidirectional causation from money supply to stock prices, stock price to inflation and interest rates to stock prices is established.

Mishra and Gupta (2014) by using the multiple correlation and multiple regression to analyze the relationship between Sensex and macroeconomic variables such as IIP, WPI, Interest rate and Morgan Stanley Capital International Index of India during the period from 2006 to 2012 by studying the major factor responsible for up and down movement in Indian stock market shows that the highly positive relationship exists between the Sensex and macroeconomic variables and is significant during the period if the study.

Hirak Ray, Joy Sarkar (2014) has examined the relationship between the Independent Variables such as IIP, WPI, T-bill rates, GB21, ER, MS and Dependent Variables which includes Sensex by using the ADF unit root test, DF-GLS22 test; VAR; Johansen Co-integration test, VECM, Granger causality test on monthly data from Jan 1991- Apr 2008 and found that the Indian stock market leads the economic activities and the core determinants of the asset market are IIP, MS and ER. Weak influence of other macroeconomic variables on stock market.

Venkataraja.B (2014) through his empirical study by using the multiple regression model, ANOVA on monthly data from April 2010 – Jun 2014 to analyze the effect of macroeconomic variables such as IIP, WPI, GP,FII, and REER on Sensex reveals that the combined influence of WPI, IIP, FII, GP and coefficient of all variables are statistically significant except IIP.

Kumar (2014) has examined the study including exchange rate and crude oil prices to understand its influence on Indian stock market through including S&P CNX Nifty. The study obtains the result as significant positive impact of exchange rate and crude oil prices on stock market.

Gurloveleen K and Bhatia BS (2015) has studied the impact of macroeconomic variables such as MS, CMR, OP, ER, FR, FII, GFD, IIP, WPI, T-bill rates on the functioning of Indian stock market: A study of manufacturing firms of BSE 500 (2015) by using the ADF Unit root test, Granger Causality test, Multiple regression on monthly data from Apr 2006- Mar 2015 found that FII and ER found significant under multiple regression. No relationship between variables and BSE 500.

Gurmeet Singh (2016) has examined the impact of macroeconomic fundamentals such as IIP, WPI, MS, T-bill Rates, and ER on stock prices revised: A study of Indian stock market by using the ADF9unit root test to check stationarity, Johansen's Co-integration test, VECM10 and Granger Causality and revealed that Stock prices are positively related to WPI,

MS, IR. IIP and ER negatively related to stock prices and bidirectional causality between ER and stock price index.

3. STATEMENT OF HYPOTHESIS

NULL HPOTHESIS:

H0: There is no normality of macroeconomic variable and BSE Sensex indexes.

H0: There is no relationship between macroeconomic variable and BSE Sensex indexes.

H0: There is no impact of macroeconomic variable on BSE indexes.

ALTERNATIVE HPOTHESIS:

Ha: There is normality of macroeconomic variable and BSE Sensex indexes.

Ha: There is relationship between macroeconomic variable and BSE Sensex indexes.

Ha: There is impact of macroeconomic variable on BSE Sensex indexes.

4. METHODOLOGY

4.1 Statement of the problem:

Investor sentiments, Terrorism and International Political activity, Natural Calamity, Market and Company Information affect the Indian market. Since there is a fluctuation in the market, investors are hesitating to invest in long term funds. The study would be a tool for the investors to make a better investment strategy for long term investment.

4.2 Objectives:

1. To test in a normality of macroeconomic variables and BSE Sensex indexes.
2. To examine the relationship between macroeconomic variables and BSE Sensex indexes.
3. To analyze the impact of macroeconomic variables on BSE indexes.

4.3 Scope of study:

The study reveals the linkage between the Indian stock market and macroeconomic variables such as CMR, FXR, IIP, FIIs, REER, WPI and BSE SENSEX using SPSS during the period of April 2008 to March 2018. The study portrays about that how the macroeconomic variables influence the Bombay Stock exchange Sensex.

4.4 Importance of study:

The economic condition of the country is measured by the barometer called stock exchange. Every major change in country and economy is reflected in the prices of shares. The rise or fall in the share prices indicates the boom or recession cycle of the economy. Stock exchange is also known as a pulse of economy or economic mirror which reflects the

economic conditions of a country. Stock market is important from both the industry's view and investor's view.

Bombay stock exchange plays a major role in the collecting money and encouraging investments, this study is designed to examine the influences of macroeconomic variables on BSE. This study will help investors to analyze the major economic variables that affect the Bombay Stock Exchange Sensex and will provide an advantage to take investment decision.

4.5 Sources and Collection of the Data:

The study will be using mainly secondary data. Information is obtained from www.rbi.org, www.bseindia.com and other sources.

4.6 Sample selection:

The sample selection of the study will include the four macroeconomic variables such as CMR, FXR, FIIs, WPI, REER, M3 and IIP.

1. CMR - Call Money Rate
2. FXR - Foreign Exchange Reserve
3. IIP - Index of Industrial production
4. M3-Money Supply
5. FIIs - Foreign Institutional Investors
6. REER - Real Effective Exchange Rate
7. WPI - Wholesale Price Index

4.7 Study period:

The study of the influence of macroeconomic variable on BSE attempted during the period of April 2008 – March 2018.

4.8 Tools used for analysis:

To test the influences of macroeconomic variable;

1. Descriptive statistics,
2. Correlation,
3. Regression,
4. Coefficient

Descriptive statistics:

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. It enables a reader to easily understand the set of data that has been collected. In our study descriptive statistics is used to

analyze the summary of macroeconomic variables and BSE Sensex. We used measures of central tendency (mean) and measures of variability (standard deviation, range, maximum and minimum) to explain the data set.

Correlation

Correlation analysis is attempts to determine the degree of relationship between variables and testing whether it is significant and establish the cause and effect relationship. When two or more variables have a strong relationship with each other then there is a strong or high correlation, while a weak or low correlation means that the variables are hardly related. Correlation coefficient can range from -1.00 to +1.00. The +1.00 denotes that there will be a perfect positive relationship between the variables and the -1.00 denotes that there will be a perfect negative relationship between the variables. A Zero value denotes that there is no relationship between the variables. The correlation analysis is designed to examine the strength and relationship between Bombay Stock Exchange Sensex and Macroeconomic variables.

Regression:

The regression analysis is a statistical device with the help of which we are in a position to estimate the unknown values of one variable from known values of another variable. The variable which is used to predict the variable of interest is called the independent variable or explanatory variable and the variable we are trying to predict is called the dependent variable or explained variable. The independent variable is denoted by X and dependent variable by Y. The analysis used is called the simple linear regression analysis-simple because there is only one predictor or independent variable, and linear because of the assumed linear relationship between the dependent and the independent variables. The term linear means that an equation of a straight line of the form Y=a+bX, where a and b are constant, is used to describe the average relationship that exists between the two variables.

Here, in our study we carried out this analysis to explore the effect of the macroeconomic variables on Bombay stock exchange Sensex. Here, the dependent variable is BSE Sensex and the independent variables are WPI, PEER, M3, CMR, FII, FXR and IIP.

$$Y = a + bX$$

$$a = \frac{\Sigma y - b\Sigma x}{N} \qquad b = \frac{N\Sigma xy - (\Sigma x)(\Sigma y)}{N\Sigma x^2 - (\Sigma x)^2}$$

1. N = number of observations or years
2. x = a year index (decade)
3. y = population size for given census year

4.9 Analysis and Interpretation:

4.9.1 Descriptive Statistics:

Table 1: Analysis of descriptive statistics of Macroeconomic variables and BSE Sensex

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CMR	120	-.3532710400	.3505154600	.002567181858	.0761020218312	.093	.221	9.123	.438
FXR	120	-.1168312700	.0421291850	.002825222394	.0195318856564	-2.000	.221	10.803	.438
IIP	120	-.5874907000	.1739510400	-.001187497653	.0886509110457	-3.314	.221	19.260	.438
M3	120	-.0188857800	.0431895440	-.2389010300	.0098160110325	.412	.221	.977	.438
FIIs	120	-668.000000000	34.423770000	-6.02282315578	61.140751248852	-10.843	.221	118.376	.438
REER	120	-.0555700770	.0376689020	-.002291816969	.0168334574331	-.680	.221	.857	.438
WPI	120	-.3615520300	.0257856570	.000396719729	.0341902797260	-10.128	.221	107.935	.438
BSE SENSEX	120	-.2389010300	.2825510200	.008201523517	.0630350875642	.111	.221	4.290	.438
Valid N (listwise)	120								

Source: The data of the analysis computed in SPSS 20

Interpretation:

The summary statistics of Bombay Stock Sensex and the four macroeconomic variables are given in the Table 1. Descriptive statistics has been analyzed the materialistic properties of data mean, standard deviation, skewness and kurtosis of each independent and dependent variables. The mean of the BSE Sensex is .008201523517. The maximum of BSE Sensex is .2825510200where as the minimum is -.2389010300.The mean is highest in case of FXR (.002825222394) where as lowest in case of FII(-6.02282315578) when compared with the mean of BSE Sensex. IIP (-.001187497653), FII (-6.02282315578), REER (-.002291816969) and M3 (-.2389010300) are having the negative mean value. The mean of CMR, FXR, FIIs, WPI, REER, M3 and IIP are 0.002567181858, 0.002825222394, -6.02282315578, 0.000396719729, -0.002291816969, -0.2389010300 and -0.001187497653 and the standard deviation of the same are 0.0761020218312, 0.0195318856564, 61.140751248852, 0.0341902797260, 0.0168334574331, 0.0098160110325, and 0.0886509110457 which has significant variability from mean. The standard deviation of BSE Sensex (.0630350875642), FIIs (61.140751248852) and IIP (.0886509110457) are more volatile when compared with the CMR (0.0761020218312) FXR (0.0195318856564) WPI (0.0341902797260), REER (0.0168334574331) and M3 (0.0098160110325). The normality of the data has been determined through the values of skewness and kurtosis. Skewness is the

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measure of asymmetry of the distribution of a real valued random variable. Skewness of a systematic distribution, such as the normal distribution is Zero (0). Kurtosis is a measure of the probability distribution of a real valued random variable. The kurtosis of a normal distribution is 3. The table which was given above no variable equal to 0 and kurtosis equal to 3 which signifies that the data is not normal.

4.9.2 Correlation

Table 2: Analysis of Correlation between Macroeconomic variables and BSE Sensex

Correlations

		CMR	FXR	IIP	M3	FIIs	REER	WPI	BSE SENSEX
CMR	Pearson Correlation	1	.079	.191*	-.150	.019	.053	.091	-.005
	Sig. (2-tailed)		.388	.037	.103	.837	.563	.325	.961
	N	120	120	120	120	120	120	120	120
FXR	Pearson Correlation	.079	1	-.126	.100	.070	.272**	-.010	.545**
	Sig. (2-tailed)	.388		.170	.275	.447	.003	.914	.000
	N	120	120	120	120	120	120	120	120
IIP	Pearson Correlation	.191*	-.126	1	-.228*	.022	-.043	-.027	-.158
	Sig. (2-tailed)	.037	.170		.012	.808	.644	.773	.084
	N	120	120	120	120	120	120	120	120
M3	Pearson Correlation	-.150	.100	-.228*	1	.147	-.053	-.026	.011
	Sig. (2-tailed)	.103	.275	.012		.110	.566	.780	.909
	N	120	120	120	120	120	120	120	120
FIIs	Pearson Correlation	.019	.070	.022	.147	1	-.169	-.022	-.143
	Sig. (2-tailed)	.837	.447	.808	.110		.066	.809	.119
	N	120	120	120	120	120	120	120	120
REER	Pearson Correlation	.053	.272**	-.043	-.053	-.169	1	-.042	.285**
	Sig. (2-tailed)	.563	.003	.644	.566	.066		.650	.002
	N	120	120	120	120	120	120	120	120
WPI	Pearson Correlation	.091	-.010	-.027	-.026	-.022	-.042	1	-.011
	Sig. (2-tailed)	.325	.914	.773	.780	.809	.650		.907
	N	120	120	120	120	120	120	120	120
BSE SENSEX	Pearson Correlation	-.005	.545**	-.158	.011	-.143	.285**	-.011	1
	Sig. (2-tailed)	.961	.000	.084	.909	.119	.002	.907	
	N	120	120	120	120	120	120	120	120

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: The data of the analysis computed in SPSS 20

Interpretation

Table2 indicates the correlation between the Bombay Stock Exchange Sensex and macroeconomic variables. Here we have used Pearson correlation analysis with two tailed and significant level at 1% and 5%. There is a positive relationship between CMR and IIP at the 0.05 level is 0.191. There is a negative correlation between the IIP and M3 at the 0.05 level is -.228.

The negative relationship portrays the inverse relationship between two variable where as the positive relationship indicates direct proportion relationship between the two variable. So CMR and IIP are direct relationship and IIP and Money supply are inverse relationship. Thus there will be a highly significant positive correlation between the Call Money Rate and Index of Industrial Production is 0.191 at 0.05 levels. The correlation between Bombay stock exchange Sensex has weak relationship with the CMR (-0.005), FIIs (-0.143), WPI (-0.011) and IIP (-0.158) and has strong relationship with FXR (0.545) and M3 (0.011). WPI has the low degree of inverse proportion with the FXR (-0.010), IIP (-0.027), FIIs (-0.022) REER (-0.042) and M3 (-0.026).

REER has negatively correlated with the M3 (-0.053), FIIs (-0.169), WPI (-0-042) and IIP (-0.043).

There is a highly significant positive relation exist between BSE Sensex with FXR (0.545) and REER (0.285) at 0.01 level which shows the BSE Sensex has increases with the positive changes with Foreign Exchange rate and Real Effective Exchange Rate. REER has positively significant relationship with the FXR at 0.01 level is 0.272.

We can conclude that the proportion of variation BSE Sensex is week attributed to the macroeconomic variables except FXR and REER. So to make our study more relevant and find out the relationship between the BSE Sensex and variables, we conduct regression analysis.

4.9.3 Regression

Table 3: Analysis of impact of Macroeconomic variables and BSE Sensex

Variables Entered/Removed[b]

Model	Variables Entered	Variables Removed	Method
1	WPI, FXR, FIIs, CMR, M3, IIP, REER		Enter

a. All requested variables entered.

b. Dependent Variable: BSE SENSEX

Model Summaryb

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.592[a]	.351	.310	.0523422644460	1.898

Source: The data of the analysis computed in SPSS 20

Interpretation

This table provides the R and R^2 values. The R value represents the simple correlation between the dependent variable BSE SENSEX and the predictors such as IIP,WPI, REER,FXR, FIIs, CMR and M3 is 0.592 (the "R" Column), which indicates a high degree of correlation. The R^2 value (the "R Square" column) indicates how much of the total variation in the dependent variable, can be explained by the independent variable. The total variation between the BSE Sensex and the other variable is 0.351.

Durbin – Watson test is a test statistics which is used to test the autocorrelation in residuals from regression analysis. The Durbin Watson test reports a test statistic, with a value from 0 to 4, where:

1. 2 are no autocorrelation.
2. 0 to <2 is positive autocorrelation (common in time series data).
3. >2 to 4 is negative autocorrelation (less common in time series data).

In this study the value of Durbin Watson test is 1.898 which portrays that positive auto correlation between the BSE Sensex and predictor variable.

ANOVA

The next table is the **ANOVA** table, which reports how well the regression equation fits the data (i.e., predicts the dependent variable) and is shown below:

Table 4: ANOVA: Analysis of variation between the macroeconomic variable and BSE Sensex

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.166	7	.024	8.655	.000[a]
	Residual	.307	112	.003		
	Total	.473	119			

a. Predictors: (Constant), WPI, FXR, FIIs, CMR, M3, IIP, REER

b. Dependent Variable: BSE SENSEX

Source: The data of the analysis computed in SPSS 20

Interpretation

df – These are the degrees of freedom associated with the sources of variance. The total variance has N-1 degrees of freedom. The Regression degrees of freedom correspond to the number of coefficients estimated minus 1. Including the intercept, there are 5 coefficients, so the model has 8-1=7 degrees of freedom. The Error degree of freedom is the DF total minus the DF model, 119 – 7 =112. F and Sig. – This is the F-statistic the p-value associated with it. The F-statistic is the Mean Square (Regression) divided by the Mean Square (Residual): .024/.003=8.655. In this study the value of F statistic is 8.655 which are significant at the 0.000; through this we conclude that there will be impact of macroeconomic variable on Bombay Stock Exchange Sensex and also there will be a variation between them.

Collinearity Diagnostics

Table 5: Analysis of Collinearity relationship between Macroeconomic variables and BSE Sensex.

Collinearity Diagnostics[a]

Model	Dimension	Eigen value	Condition Index	Variance Proportions							
				(Constant)	CMR	FXR	IIP	M3	FIIs	REER	WPI
1	1	1.842	1.000	.10	.00	.03	.02	.11	.00	.01	.00
	2	1.308	1.187	.00	.01	.23	.05	.00	.04	.33	.00
	3	1.201	1.239	.01	.43	.01	.24	.00	.00	.00	.06
	4	1.061	1.317	.01	.01	.12	.00	.00	.67	.01	.04
	5	1.017	1.346	.01	.00	.00	.15	.00	.01	.01	.75
	6	.730	1.589	.00	.51	.02	.46	.00	.03	.09	.15
	7	.603	1.748	.01	.03	.58	.02	.03	.18	.55	.00
	8	.238	2.783	.86	.02	.00	.06	.86	.06	.00	.00

a. Dependent Variable: BSE SENSEX

Source: The data of the analysis computed in SPSS 20

Interpretation

The Collinearity diagnostics confirm that there are serious problems with multicollinearity. Several eigenvalues are close to 0, indicating that the predictors are highly intercorrelated and that small changes in the data values may lead to large changes in the estimates of the coefficients.

The condition indices are computed as the square roots of the ratios of the largest eigenvalues to each successive eigenvalues. Values are greater than 15 indicate a possible problem with Collinearity; greater than 30, a serious problem. Six of these indices are larger than 30, suggesting a very serious problem with Collinearity

If all the values of the selected variables were within 1 to 10 there is no Collinearity within the variables or if more than 10 indicate that there will be Collinearity between them. In the above table indicates that the value of the BSE Sensex (1.842), CMR (1.308), FXR (1.201), IIP (1.061), M3 (1.071) are more than 1 so there is no linear association between the variables. The value of FIIs (0.730), REER(0603) and WPI(0.238) are close to 0 which indicated that the selected variables are intercorrelated which denotes that the small changes in one variable may lead to large changes in another variables.

Coefficients

The Coefficients table provides us with the necessary information to predict BSE Sensex from CMR, FXR, FIIs, WPI, REER, M3 and IIP as well as determine whether contributes CMR, FXR, FIIs, WPI, REER, M3 and IIP, statistically significantly to the model.

Table 6: Analysis of Coefficients of BSE Sensex from macroeconomic variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.006	.007		.838	.404		
	CMR	-.032	.065	-.038	-.482	.630	.928	1.077
	FXR	1.679	.261	.520	6.427	.000	.884	1.131
	IIP	-.061	.057	-.086	-1.075	.285	.903	1.108
	M3	-.250	.514	-.039	-.486	.628	.904	1.106
	FIIs	.000	.000	-.152	-1.936	.055	.937	1.068
	REER	.426	.303	.114	1.406	.163	.884	1.131
	WPI	-.008	.141	-.004	-.053	.958	.986	1.014

a. Dependent Variable: BSE SENSEX

Source: The data of the analysis computed in SPSS 20

Interpretation

Through this study we conclude that the model column shows the predictor variables (CONSTANT, CMR, FXR, FIIs, WPI, REER, M3, and IIP).

1. CMR – The coefficient for CMR is -.032. when BSE Sensex increases by 1 unit then the value of CMR is decreases by -0.032

2. FXR – The coefficient for FXR is 1.679. when BSE Sensex increases by 1 unit then the value of REER is increases by 1.679
3. IIP – The coefficient for IIP is-0.061. when BSE Sensex increases by 1 unit then the value of IIP is decreases by -0.061
4. M3– The coefficient for M3 is -0.250. when BSE Sensex increases by 1 unit then the value of M3 is decreases by -0.250
5. REER- The coefficient for REER is 0.426. when BSE Sensex increases by 1 unit then the value of REER is increases by 0.426
6. WPI - The coefficient for WPI is -0.250. when BSE Sensex increases by 1 unit then the value of WPI is decreases by -0.250

t and Sig. – These are the t-statistics and their associated 2-tailed p-values used in testing whether a given coefficient is significantly different from zero. Using an alpha of 0.05:

1. The coefficient for CMR (-.032) is significantly different from 0 because its p-value is 0.630, which is greater than 0.05.
2. The coefficient for FXR (1.679) is no significantly different from 0 because its p-value is 0.000, which is smaller than 0.05.
3. The coefficient for IIP (-.061) is statistically significantly different from 0 because its p-value is 0.285 definitely larger than 0.05.
4. The coefficient for M3 (-.250) is statistically significant because its p-value of 0.628 is greater than 0.05.
5. The coefficient for FIIs (0.000) is no statistically significant because its p-value of 0.055 is greater than 0.05.
6. The coefficient for REER (0.426) is no statistically significant because its p-value of 0.163 is greater than 0.05.
7. The coefficient for WPI (-.008) is statistically significant because its p-value of 0.958 is greater than 0.05.

5. CONCLUSION

The paper "A study on impact of Macroeconomic variables on Bombay Stock Exchange Sensex" explored that influences of macroeconomic variables like CMR, FIIs, FXR, WPI, REER, M3 and IIP on the performance of BSE SENSEX. It causes a severe impact on the every sector of Indian economy. The main theme of the study is to ascertain whether the Indian stock market is influenced by the macroeconomic variables to check this effect descriptive statistics, correlation and regression has been used. The data obtained through the

study was not normal while variables are analyzed through descriptive statistics. The study found that there is a direct relationship exists between the FXR, REER and the BSE Sensex at 0.01 levels and the inverse relationship exist between the IIP and M3 at 0.05 levels. Thus the FXR, REER affects positive relationship with BSE SENSEX and also the M3 and IIP inversely affects the BSE stock exchange. The value of FIIs (0.730), REER(0603) and WPI(0.238) are close to 0 which indicated that the selected variables are intercorrelated which denotes that the small changes in one variable may lead to large changes in another variables. The study found that there is no normality between macroeconomic variables and BSE SENSEX indexes and also found that through the various statistical analysis we found that the there will be relationship between macroeconomic variables and Bombay Stock Exchange Sensex and there is a great impact on macroeconomic variables and BSE Sensex. It is observed from the findings that stock prices in BSE Sensex have been direct influenced by the changes in real effective exchange rate and also found that money supply which influence the inverse relationship with the IIP indirectly affects the stock price. The study reveals that the impact of macroeconomic variable has greatly affected the stock market volatility. The findings of the study were helpful for both investors to invest the money in BSE Sensex based on the stock market volatility which in influenced by the macroeconomic variables and also the policy makers as well as regulators to frame policies.

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