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Relationship between Stock Index and Macroeconomic Determinants: A Study of Post Globalization Era

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Abstract

The Indian economy with low level of industrialization and surplus money caused by underdevelopment conditions, the stock market had no footage and could not acquire the significant position. Economic reforms initiated during 1980's brought recognizable state to the stock market by public issues and incentives to private capital, which under the condition of globalization reached to a stage and provided direction to the macroeconomic variables and vice versa. The macroeconomic policy opened the capital market for domestic and transnational capital has not only changed the structure but also the behavior of investors.

The present study is based on secondary data on macroeconomic variables and indices of stock market. The time series data are transformed to comparative units and correlation coefficients are applied to measure the degree of relationship.Further to test the causality in the relationship between sensex and the other macroeconomic determinants the granger causality test have been applied. The post globalization period demonstrate clear concurrence between the Sensex indices and the growth in capital formation, GDP, per capita income, investment by FII's and other macroeconomic variables considered in the study.

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INTRODUCTION:

Globalization and financial sector reforms in India have ushered significant structural change in the financial sector in general and stock market in particular. Until the 1980s, with the focus on self reliance and import substitution domestic and foreign investment in the portfolio was limited, but initiation of reform process in early 1990s, under the WTO regime, have allowed the free play of monopoly capital in the name of competitiveness for industrial licensing, foreign trade, foreign direct investment, exchange rate and the financial sector of the country. In order to promote Industrial development in the country through efficient resource mobilization by the way of corporate securities the concept of stock exchange (a part of capital market), the capital was allowed to penetrate in the economy in a large number of ways in almost all sectors.

The questions of FDI and industrial development have different facets. One may ask what the course of FDI flow is and how far it has helped to the industrial production to generate income and employment in the hands of common masses. A large number of economists designate the process of globalization as globalization of finance. The question is, does the macroeconomic variable show any bearing as the major proportion of FDI has come as portfolio investment through FIIs. A stock market is intricately interwoven currently in the fabric of nation's economic life. With the development of the stock market in India in the post reform period indicating growing participation of institutional investors both foreign and domestic along with the retail investor. As a result analysis of stock market has come to the force as it is assumed that through this segment of market the country gets exposed to the outer world. It has been observed that with the development of capitalistic mode of production in India, the process has widened up the platform for stock market. The underdeveloped nations also participate in the process and the result is that there is a considerable increase of participants who has made this market more popular.The subject matter has acquired importance during recent past and a large number of studies have been carried out on the investment pattern and behavior of the indices related to the stock market. Similarly a good number of scholars have also addressed the phenomena and

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found that there is a concurrence between macroeconomic variable and the sensex indices along with the general impact of stock market behavior on the economy & vice versa.

Theoretically the relation between stock market and economy in general has two diversion perspectives. The market is understood to be as speculative market where no commodity is produced and exchanged therefore it becomes difficult to find any relationship except that the performance of individual industry leads to the change of the index of the stock market. But in case of industrial advancement the economic parameters influenced and get influenced by the market. An equal no. of scholars are of the view that the amount of capital can be made available to the firms through the domestic and foreign investors for expansion which indirectly have the impact on economy and therefore, there can be a direct, indirect relation of stock market indices to the macroeconomic variables. A significant amount of literature exists that examines the relationship between stock market with macroeconomic and financial variables for different stock markets. The literature reveals divergent conclusions where several studies found no relation between them and opposed to this an equal number of studies suggest that there is bearing and macroeconomic variables determine the movement of indices.

The US stock (Poterba and Summer 1988, and Famma and French 1989) and UK stock (Macdonald and Power 1991) are partly predictable because they have a market return tendencies. Similarly, these market also hold the efficient market hypothesis to show strong linkages between stock market and real economic variables such as GDP, industrial production, inflation and employment (Famma1981, Famma and Gibbons1982, Summers 1986 and Chen 1991) .Mukherjee and Naka (1995) have founded that there exist relationship between exchange rate, inflation, money supply, real economic activity, government bond rate and call money rate in the Japanese stock market. Studies on Taiwan and other Asian countries (Fang and Lee 1990 sand 1995) have suggested that the response of the market is mixed. They conclude that the stock return volatility respond to information on trade. Chaudhuri and Koo (2001) investigated the volatility of stock returns in some Asian emerging markets in terms of the volatility of domestic

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and external factors; found that both domestic macroeconomic variables and international variables have significant impact on stock return volatility. Their empirical results suggest the presence of a significant contagion effect and integration of capital market in this region. The results also suggested the role of government in terms of fiscal and monetary policy in smooth functioning of the stock market is crucial in this region. In Indian context, Bhattacharya and Mukherjee (2002) studied the nature of the causal relationship between stock prices and macro aggregates in India by using the methodology proposed by Toda and Yamamoto for the period of 1992-93 to 2000-2001. Their results show that there is no causal relationship between stock price and macroeconomic variables like money supply, national income and interest rate but there exists two way causation between stock price and rate of inflation. According to them index of industrial production lead the stock price. The behavior of stock prices (BSE) in relation to some key macro economic variables in India during the scam period 1992 was studied by Bhattacharya and Chakravarty (1994). Their dynamic forecast indicate the behavior of stock prices is unrelated to key macro variables. Krishna Reddy Chittedi (2007) have done a study on the validity and growth path of Sensex as well as the quantum of contribution of FII's in enhancing the validity of Sensex. The study has described the various milestone achieved by Sensex after the post globalization period, and also highlighted the reason for the same. In the study it has been mentioned that as such there is no correlation between FII's investment and the movement of Sensex. Dharmendra Singh (2010) has derived a relation especially the causal relation between stock market index i.e. BSE Sensex and three key macroeconomic variables of India Economy by using correlation unit root test and Granger Causality test or monthly data from April 1995 to March 2001. The result have indicated that index of industrial production is the only variable having bilateral causal relationship with BSE Sensex where as WPI .

The above stated studies carried on establishing relationship between the macroeconomic variables of the economy and the stock market indices provide the general conclusions that the studies on developed economies have supported the thesis that there is strong bearing of the

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macro variables on the stock market indices. Contrary to this the stock market in the developing countries the said relationship has not been undoubtedly confirmed rather the two studies cited with reference to India has found to be unrelated.

In absence of general disagreement on the relationship of two it seems to be convincing that in the pre reforms period the macroeconomic variables of the economy were tuned to planned development and hence the stock market indices not having bearing does not come to be a surprise. But the post globalization period has tuned the economy domestically to the market and secondly the Indian economy and financial market has been exposed to the global economies. Hence the relationship between these two is expected.

Therefore, the present study is an attempt to explore the direction and nature of relationship between macroeconomic variables like GDP, FII's investment on year basis, gold prices, capital formation, manufacturing industrial output, exchange rate, WPI, Turnover of cash segment, Intrest Rate, savings and Average Sensex (BSE index) movements during post globalization period .The study is expected to fill the existing gap and to answer the basic question.

The broad objectives of the study are to:

1) Establish and analyze the relationship between the macro variables and sensex movements.
2) To understand the Causality between different variables and average sensex.

Data and Methodology:

The study is based on secondary data on macroeconomic variables and indices of stock market.. The secondary data for economic variables such as GDP,savings, capital formation, FII investment, gold price bank interest rate ,industrial production and exchange rates are collected

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from various published and semi published sources of RBI, CSO and other agencies for a period of 1992-2011. The simple and relevant statistics is used to determine the required results. First, the interval data is converted to the comparative units and then the bivariate correlation has been used to measure the degree of relationship and the level of explanation to the stock indices. The test of Granger Causality has been applied to check the directionality.

Hypothesis:

The process of globalization and structural reforms has provided the free hand to the domestic and transnational capital in the name of attraction to FDI and competitiveness. The new economic policies have given boost to the monopoly capital both domestic and foreign and sensex in turn is directly linked with the growth of big industrial houses. The growth of monopoly capital and GDP show the movements hand in hand. Secondly the earlier studies carried out on India fail to establish relation between stock market and macroeconomic variables other that inflation. Therefore the present study under the changed economic policy and structure put forward the hypothesis that the post globalization period has a strong positive relation between the macroeconomic variables and the movement of sensex. Secondly, the structural change in the economic policy is pushing forward the growth of private capital and has created an environment of stability to the movement of sensex.

Results and Analysis:

Growth of Sensex and Macroeconomic variables:

Growth of the economy and its close association with the BSE index over a period of 1992-2011 further provides the insight into their concurrence as how they have differed in their growth over time. Linear and exponential growth rates are calculated to examine and compare so as to identify which of the variables have grown linearly and the other with geometric progression. The two trends also helped in identifying that what trends fit the best and explain the growth

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pattern. The coefficient of determination (r Square) provides this explanation such that whichever has higher (r square) proves better fit to the trend. Further the quadratic function is applied to examine whether the variables over time have shown acceleration or deceleration in their growths . The negative sign of b2 indicates that the growth has slowed down and the positive sign shows the progression in the growth with the increasing time.

The growth of sensex shows that there is a positive growth over time and it was more near to linear growth of 186 points every year with a higher Rsquare =.572.The F value of both linear and exponential b1 are lower but statistically significant at 5 % levels. The general level of index also confirms the trend that the indices were lower for quite some time which picked up showing acceleration in the recent past. The growth rates of GDP at current price, capital formation and savings show quite similar trends. The b1 values are not only high with linear trend and exponential functions but are statistically also significant at 1 5 level of significance with 'f' value being high. The growth trends and the quadratic functions confirm the understanding that the three major macroeconomic variables are not only have increased level after the globalization but shown acceleration during the last twenty years. The quadratic function coefficient b2 are positive and high show that growth has accelerated.

The prices of gold have been slow in general and have not shown significant growth the b coefficients are not significant statistically and the quadratic function also o reveal that the lower growth rates has decelerated during the study period. The b2 coefficient of quadratic function is -46.57. The growth rate of investment by FII's shows more trend fitting of linear nature as the b1 is statistically significant and the r square is higher to the level of .894 compared to the exponential function r square = .55. The linear function expands about 90 % of the variance. This means the period of post globalization era the foreign investment in the portfolio segment has increased linearly but the quadratic function shows that it has slowed down over time as the b2 coefficient is negative and high. Trends of bank interest have been reduced during this period but the reduction in the interest rate is quite marginal. The negative coefficient are not statistically

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significant that shows that there is no significant change in the interest rate but even the marginal change in the interest rate becomes important for the withdrawal of savings from back and to be diverted to other forms. WPI has a positive trend means that the consumer goods have become costlier with increase of prices.

Industrial growth is important to the economy as it constitutes the backbone of sustained growth in terms not only for domestic consumption but also for exports. The growth rate of Industry sector has been slow in terms of percent as it has been between 2-4.5. The absolute values of the industrial output show high positive growth such that the annual linear growth of production has been to the tune of 3200 crores per year which is also significant statistically at 1 % level of significance. Despite of the fact that the growth rate of industrial output is positive and statistically significant the quadratic function clearly indicates that the industrial growth has decelerated means that the growth has slowed down during study period.

The money supply and BSE stock exchange turnover has shown more linear trends of growth rather than the geometric one. The linear growth of the two variables is also significant at 1 % level of significance. The two variables have the acceleration also in the growth rates as revealed by the quadratic function. Similarly the exchange rate of rupees to dollar has been increasing showing that the value of rupee has gradually declined and the exchange rate has increased. The dollar has been costlier 2 rupees per year and this trend has been continued through the period of the study. The acceleration rate of exchange has not been very high as the b2 coefficient of quadratic function equals to only .0293.

The growth trends of the sensex and the macroeconomic variables have shown that they have significant growth over time after the globalization and structural reforms in the economy. The variables such as GDP,Capital formation ,savings ,turnover of BSE and money supply have shown high level of acceleration in growth ,whereas other variable are either have the low level

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of acceleration or have decelerated during this period. The below stated table will support the explanation given for the growth `of sensex and other macroeconomic variables:

Table No. 1

Dependent	Mth	Rsq.	d.f.	F	Significance	B0	B1	B2
Sensex	LIN	.572	4	5.34	.082	2741.15	186.517	6.0664
	QUA	.576	3	2.04	.276	2852.36	124.337	
	EXP	.543	4	4.76	.095	2785.54	.0520	
GDP	LIN	.996	4	926.30	.000	492316	163981	3823.37
	QUA	.999	3	1760.76	.000	562411	124791	
	EXP	.989	4	351.56	.000	641933	.1303	
Capital	LIN	.988	4	337.39	.000	78223.1	46697.1	1387.55
Formation	QUA	.994	3	242.10	.000	103661	32474.8	
	EXP	.979	4	184.12	.000	127819	.1594	
Savings	LIN	.988	4	324.68	.000	74265.5	44492.9	1577.52
	QUA	.996	3	350.74	.000	103187	28323.4	
	EXP	.983	4	235.64	.000	122106	.1586	
Gold Price	LIN	.079	4	.35	.588	4494.44	34.9188	-46.575
	QUA	.980	3	72.81	.003	3640.56	512.312	
	EXP	.085	4	.37	.574	4479.15	.0079	
FII	LIN	.894	4	33.70	.004	3718.27	3238.10	-303.94
	QUA	.944	3	25.32	.013	-1853.9	6353.47	
	EXP	.550	4	4.90	.091	4307.52	.2681	
WPI	LIN	.987	4	302.62	.000	86.5667	7.9125	-.3088
	QUA	.997	3	430.90	.000	80.9054	11.0777	
	EXP	.962	4	101.42	.001	90.0140	.0645	

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Interest	LIN	.025	4	.10	.765	11.2000	.0500	-.0922
	QUA	.567	3	1.96	.285	9.5094	.8952	
	EXP	.030	4	.12	.744	11.1900	.0050	
Industrial Output	LIN	.992	4	502.66	.000	110756	31975.6	-752.73
	QUA	.996	3	340.02	.000	96956.0	39691.2	
	EXP	.950	4	76.75	.001	135546	.1270	
Exchange Rate	LIN	.961	4	98.68	.001	24.7857	2.1977	.0293
	QUA	.962	3	38.11	.007	25.3228	1.8975	
	EXP	.943	4	66.56	.001	25.8320	.0621	
Turnover	LIN	.786	4	14.67	.019	-	118761	23957.7
	QUA	.990	3	141.49	.001	246333	-	
	EXP	.833	4	19.89	.011	192891	126805	
						24676.7	.3701	
Money Supply	LIN	.965	4	110.88	.000	161531	111345	8320.57
	QUA	1.00	3	3122.37	.000	314075	26058.8	
	EXP	1.00	4	11451.3	.000	293259	.1586	

The Relationship between Index and Macroeconomic variables: -

The Pearson coefficient of correlation of product moment was calculated to share the degree and direction of relationship among the BSE indices and the Macro economic variables of India. It is expected from the study that the correlation coefficient of BSE index is supposed to be positive

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encase the index has bearing on its behavior over time. The macroeconomics variables influence the variability of the BSE Sensex index directly because it only the soundness of macroeconomic variables provide the base at which the individuals and institutions participate in the trading and increase in these economic indices leads to the growth of the stock market in terms of growth in the index of the shares.

The zero order correlation coefficient given in the further stated in Table no –Correlation Matrix Shows that, the SENSEX of BSE has a very high correlation coefficient almost with all the macro economics indicators. The average SENSEX shows the highest correlation coefficient with GDP (r=0.95), capital formation (r=0.97), Savings (r=0.97) and industrial output (r=0.95). All the correlation coefficients are significant at 1 percent level of significance. This high relationship signifies that the higher level of growth of GDP reflect higher level of capital formation and saving and is greatly related by industrial growth, show the soundness of the economy. Once the general economic indicators are strong they lead to the phenomena that the SENSEX behaves positively. The strong industrial base always gets reflected in the share prices in the industries particularly those which are included in the determination SENSEX indices of country. In the present case they show a complete bearing an the SENSEX. The growth of FII's investment also has the positive impact on the SENSEX as the coefficient is 0.91 which is also significant at 1 percent level of significance. The gold price and the bank interest are the two indicators which compete with the savings with the share market. The lowering of gold prices and bank interest must provide the increasing trend for the savings in the share market. The negative and significant correlation at 5 percent level of significance clearly indicates that the SENSEX has inverse relation with bank interest rate (-) 0.22 but the relationship with gold price is showing a positive and significant correlation at 1 percent level of significance. This is because the gold price has also increased slowly along with the SENSEX of BSE.

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Table No. 2: Correlation Matrix

	Avg. Sensex	GDP	Capital Formation	Savings	Gold price	FII	WPI	Interest rate	Industrial. Output	Exchange rate	Turnover of cash segment at BSE	Money supply
Avg. Sensex	1	0.95**	0.97**	0.97**	0.93**	0.91**	0.90**	-0.22**	0.95**	0.45*	0.71**	0.94**
GDP	0.95	1	0.99**	0.99*	0.96*	0.94*	0.98*	-0.38*	1.00**	.63**	.91**	1.00**
Cap. Forma	.97	.99	1.00	1.00**	.96**	.94**	.95**	-.39*	.99**	.54*	.91**	.99**
Saving	.97	.99	1.00	1.00	.95*	.94**	.96**	-.42*	.99**	.55**	.91**	.99**
Gold price	.93	.96	.96	.95	1.00	.91*	.88**	-.28*	.95**	.42*	-.18*	.97**
FII	.91	.94	.94	.94	.91	1.00	.92**	-.26*	.92**	.49*	.76**	.92**
WPI	.90	.98	.95	.96	.88	.92	1.00	-.43*	.98**	.70**	.84**	.97**
Interest rate	-.22	.38	-.39	-.42	-.28	-.26	-.43	1.00	-.48*	-.74**	-.54*	-.47*
Industrial. Output	.95	.00	.99	.99	.95	.92	.98	-.48	1.00	.63**	.85**	.99**
Exchange rate	.45	.63	.54	.55	.42	.49	.70	-.74	.63**	1.00	.90**	.60**
Turnover of cash segment at BSE	.71	.91	.91	.91	-.18	.76	.84	-.54	.85	.90	1.00	.96**

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Money supply	.94	1.00	.99	.99	.97	.92	.97	-.47	.99	.60	.96	1.00

** 1% level of significance
*5% level of significance

The correlation coefficient among the macro economics variables themselves is very high and significant for all the variables. This high correlation coefficient is the indication that all the parameters of the economics are integrated with each other and the growth of one variable is closely associated with other variables. The GDP and other variables such as capital for nation, industrial output and saving have strengthened serving this period and almost all the variables have grown very fast having very close association with each other. This high and strong relationship has indicates that the post globalization period particularly after the structural reforms and policies towards foreign direct investment have provided the multiplier effect to the overall development of the economy resulting into the soundness of the macro economics variables. A large number of economist see that the growing macro economics parameters of the economy will trick down to the other areas and lower income group and will benefit the country as a whole and the wellbeing of the massed or the other hand it is also been argued that although the economy at the macro level has been growing but this is resulting into the growing regional and interpersonal disparities and the problems of inflation poverty and unemployment are not addressed as much they deserve. The economy has grown a balanced manner taking care of the other entire sector than only that of gross domestic product.

Table No.3 – Results of Causality by Granger Causality Test

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
GDP does not granger cause Average Sensex	2	2.19	.15
Average Sensex does not granger cause GDP	2	.00	.99
GDP does not granger cause Average Sensex	4	4.47**	.04
Average Sensex does not granger cause GDP	4	.30	.86

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GDP does not granger cause Average Sensex Average Sensex does not granger cause GDP	5 5	37.05* 1.73	.00 .30

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
Capital Formation does not granger cause average Sensex Average Sensex does not granger cause capital formation	2 2	11.07* 1.49	.00 .26
Capital Formation does not granger cause average Sensex Average Sensex does not granger cause capital formation	4 4	11.10* .48	.00 .74
Capital Formation does not granger cause average Sensex Average Sensex does not granger cause capital formation	5 5	9.12** .25	.04 .91

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
Savings does not granger cause average Sensex Average Sensex does not granger cause	2 2	9.01* 3.95	.00 .35

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Savings			
Savings does not granger cause average Sensex Average Sensex does not granger cause Savings	4 4	10.65* .16	.00 .94
Savings does not granger cause average Sensex Average Sensex does not granger cause Savings	5 5	6.42*** .04	.07 .99

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
Gold Price does not granger cause average Sensex Average Sensex does not granger cause Gold Price	2 2	13.05* 1.13	.00 .35
Gold Price does not granger cause average Sensex Average Sensex does not granger cause Gold Price	4 4	11.60* .48	.00 .74
Gold Price does not granger cause average Sensex Average Sensex does not granger cause Gold Price	5 5	7.29 1.05	.06 .5

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
FII does not granger	2	1.35	.29

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cause average Sensex Average Sensex does not granger cause FII	2	.16	.85
FII does not granger cause average Sensex Average Sensex does not granger cause FII	4 4	29.24* 3.80**	.00 .05
FII does not granger cause average Sensex Average Sensex does not granger cause FII	5 5	20.1* 3.16	.00 .14

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
WPI does not granger cause average Sensex Average Sensex does not granger cause WPI	2 2	1.88 .82	.19 .45
WPI does not granger cause average Sensex Average Sensex does not granger cause WPI	4 4	1.83 18.2*	.22 .00
WPI does not granger cause average Sensex Average Sensex does not granger cause WPI	5 5	1.53 2.68	.35 .17

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
Intrest Rate does not granger cause average Sensex Average Sensex does not granger cause Intrest rate	2 2	3.07*** .19	.08 .82
Intrest Rate does not granger cause average	4	3.14***	.08

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Sensex	4	.30	.86
Average Sensex does not granger cause Intrest rate	5 5	2.72 .29	.17 .89

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
Industrial output does not granger cause average Sensex Average Sensex does not granger cause Industrial output	2 2	5.26** 1.16	.02 .34
Industrial output does not granger cause average Sensex	4 4	2.19 2.66	.18 .13
Average Sensex does not granger cause Industrial output	5 5	3.09 6.44***	.19 .07

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
Exchange Rate does not granger cause average Sensex Average Sensex does not granger cause exchange Rate	2 2	2.94*** 3.99**	.08 .04
Exchange Rate does not granger cause average Sensex Average Sensex does not granger cause exchange Rate	4 4	4.23** 10.11*	.04 .00
Exchange Rate does not granger cause average Sensex Average Sensex does not granger cause	5 5	7.51** 8.38**	.03 .03

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exchange Rate			

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
Turnover of Cash segment does not granger cause average Sensex Average Sensex does not granger cause turnover of Cash Segment	2 2	7.19* .59	.00 .56
Turnover of Cash segment does not granger cause average Sensex Average Sensex does not granger cause turnover of Cash Segment	4 4	1.21 .15	.42 .94
Turnover of Cash segment does not granger cause average Sensex Average Sensex does not granger cause turnover of Cash Segment	5 5	3.08 24.8	.40 .15

Null Hypothesis	**No. of Lags**	**F statistics**	**P value**
Money Supply does not granger cause average Sensex Average Sensex does not granger cause Money Supply	2 2	4.35** 6.36***	.03 .01
Money Supply does not granger cause average Sensex	4 4	2.91 3.26***	.11 .09

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Average Sensex does not granger cause Money Supply			
Money Supply does not granger cause average Sensex	5	2.10	.28
Average Sensex does not granger cause Money Supply	5	1.90	.31

*1 %,**5% *** 10%

After applying the relevant test for checking the causality between average sensex value and other macroeconomic variables, the results have been drawn. The results stated in the above mentioned tables clearly depicts that the null hypothesis of Granger Causality can't be reject even at the level of 5 lags from average sensex to GDP,capital formation ,savings, gold price ,interest rate ,Industrial output ,turnover of cash segment whereas it can be rejected from GDP to Average sensex at 5 %level of significance, capital formation to Average sensex at 5 % level of significance ,savings to average sensex at 1% level of significance ,gold price to Average sensex at 1 % level of significance ,Interest rate to average sensex at 10 % level of significance and industrial output to average sensex at 5 % level of significance. It is evident from the results that the causality between average sensex and the variables like GDP, capital formation, savings, gold price, Intrest rate, and Industrial output is unidirectional. The rationale behind these findings is that all these variables are the indicators of economic movements in the country. Any change in the policy framework in production levels has a direct bearing on the composition of these variables. The sensex is a comprehensive index of the share prices of the major thirty companies out of the listed companies in the Bombay stock exchange on the basis of their capitalization. This index is considered as a benchmark to reflect the market the market movements on a whole term basis. A fluctuation or alteration in the macroeconomic determinants produce a considerable effect on the business environment across the corporate society and which leads to make the alteration in the capital structure composition on long term basis. The fluctuations in

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the variables under study have a drive force to make the alteration in the movement of index as these are the predictors to foresee the changes in the business environment. Any increase or decrease in the level of GDP level will certainly have a direct bearing on capital levels and saving levels among the society which in turn will have a significant bearing on the movement of index (average sensex). The changes in the global economy alter the interest rate levels in the country which again leads to produce changes in the composition of average sensex. Apart from this some variables like FII, Exchange rate and money supply have a bidirectional relationship with average sensex …….. levels of significance.FIIs (Foreign Institutional Investor) are mainly recognized as portfolio investors. The main aim of these institutions is to invest money in the market to get the immediate returns in the most profitable way. These are considered as one of the major driving force of the Indian stock market. These institutions produce a considerable fluctuation in the composition of the index. On the other hand the fluctuation in the sensex movements has also a considerable bearing on the psychology of these institutional investors. The trends in the movement of the index give a base point to these institutions to frame their decisions regarding the investment. Both the variables can be taken as predictors of each other to foresee the changes. As the money invested I the Indian stock market is at the global level the fluctuations in the values of currency against the foreign currency will certainly have a strong bearing on the fluctuations in the index. The influence of the index is although very minute on the movements in the exchange rate ,but it can be taken as a predictor to foresee the fluctuations in the exchange rate levels of the currency as it is indirectly leads to the flow of money in the market. To regulate the liquidity in the market the money supply is being regulated by the apex body of our country i.e. RBI. The stock market is the most liquid market. Policies have been framed to regulate the money supply in the economy which in turn regulates the liquidity in the market and thus it affects the trends of the sensex movements. On the other side the investment patterns, level of capital composition in the market have a drive on the flow of money in the market

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Conclusion:

The behavior of the Indian stock market has been studied by large number of scholars and found that the macroeconomic variables are not having Strong bearing except that of inflation .The present study based on correlation reveals that the macroeconomic variables like GDP, savings, capital formation, Gold price, industrial output, Money supply,FII,Exchange rate ,WPI turnover of cash segment ,interest rate have concurrence with the variability of the sensex index during post globalization period. Further it is also clear that the causation in this relationship is one way with the maximum variables but with certain variables like money supply, exchange rate and FIIs shows the bidirectional relationship with the sensex.

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