Relationship between Macro-Economic Indicators and Stock Market

[1]Sonal B. Shah, [2] Mala Dani
Author[1]Research Scholar, GLS University Ahmadabad Gujarat. India.
Author[2] Assistant Professor at GLS (Faculty of commerce) Ahmadabad. Gujarat. India

Abstract

Finance being a major part in the growth of any economy, also depends on indicators of economy. The present study focus on the impact of macro -economic indicators on Nifty 50. The data for fulfilling the objectives of the study will be collected from Secondary data. It is strongly believed by many economist that there is a strong relationship between growth of economy and financial system. Stock market plays a key role in enhancing the growth of any economy. In the study period Nifty 50 being a major stock exchange of India considered as dependent variable of study and FII, M3 , WPI being the dependent variable. The statistical technique of multiple regression is used to analyzed the impact of macro- economic indicators to Nifty50.The study concludes that all the macro- economic indicators have influence on Nifty 50 in a period of April 2001 to march 2010.

Keywords*: Economic growth , Nifty 50, Macro -economic indicators*
Jel classification : A10, E44

I. INTRODUCTION

Industrialization is consider to be a major determinant for the growth of any economy. Most of the develop nations accepts industrialization as their main economical policy like Canada, U.S.A. ,Germany, U.K. India being a fastest growing economy of world with GDP of 7.11 percent in the year 2016. has to keep eagle eye on promoting and implementing this sector to generate more employment. After implementation of L.P.G. policy in the year 1991 the government change their economic policy from mixed economy to open economy with liberalization in all the sectors of economy. These economic reforms brings a sea change in all the sectors of the economy be it agriculture industrialization or service sector. Finance has the central importance among all the sectors of an economy. It is consider to be the backbone of any economy.

Consequently, various changes took place in Indian Capital market includes FDI, FII, changes in govt. policy regarding capital market, rise and growth in capital market. The reforms changes affect so many sectors be it Agriculture, Industry, or Finance. Therefore, investigations in the dynamic linkages of individual markets over time have crucial importance to investors and financial policy makers.

Forex reserve now a days, has increase more than 425 billion $ (as per RBI statistics March 2018) which indicates, success of policy consider by government. Moreover, Indian stock market Sensex, which is the oldest stock exchange in Asia has crossed all time high increase with 35000 and nifty has crossed more than 11000 index. Sensex and Nifty are true indicators of National economy. Apart from that, as per world bank and IMF figures Indian economy now a days, already became third largest economy of the world as per GDP (ppp) and fifth largest economy as per nominal rate of GDP. Over crossing England France and Germany as well.

Stock market development has a key role to play in reforms of system by generating finance all over the country and allocating the same to the capital market investments through which growth of economy can be enhanced.

Finance being a major part in the growth of any economy, also depends on indicators of economy. Economy of any country relies on macro & micro indicators. Micro indicators belong to some individual or entity only, which do not have impact on whole economy. Macro- economic indicators are those, which affect the whole nation.

A well established and regulated capital market always attracts the global investors, as investors like to choose more stable investment portfolio. There is a general phenomenon that if the stock market increased investors it will further increase the flow of their savings into globally developed countries. Whereas, when stock market declines the investors, being panic to the situation decrease their savings flow for investments and withdrawn their investments which leads to slow down in the economy.

A. Review of Literature

Jareno and Negrut (2016) analyze that stock market index tends to advance the behavior of economic cycle with period of up to twelve months. Variables like GDP, consumer price index, industrial production index , unemployment rate ,and long term interest rate using Correlation analysis. The statistical results confirms that U.S. stock market has positive and significant relationship with GDP and IPI whereas, negative but statistically significant with variables like unemployment rate and interest rate. M.

Subramaniam (2015) analyzed stock market is consider to be relevant for economic growth by channelizing capital towards entrepreneur and investor using variables like GDP , Money supply M3, Inflation rate, Interest rate ,Industrial production , Exchange rate as independent variable and BSE as dependent variable using quarterly time series data. Correlation and Regression method used to analyze the data. Researcher concluded that all the selected variables influence the stock market using correlation and regression technique. Barasa (2014) included the macro-economic indicators like inflation rate, money supply and real GDP with Nairobi Stock Exchange – NSE 20 share index for the study purpose. In their research they found that there is a weak positive relationship between macro economic variables like inflation money supply and GDP together. They find that Inflation and stock market performance has inverse and insignificant relationship. Antonio and Fulzi (2013) make the comparative study between Indonesia and Malaysia. They examine the short term and long term relationship among global and domestic macro-economic variable from each country,- fed rate, crude oil price, dow jones index, interest rate, exchange rate and inflation for Indonesia and Malaysia Islamic capital market. They used vector error correction model using monthly data. The research reveals that in the short run no economic variable significantly affect indices. While in the long term all macro-economic variable has significant impact on both stock market except Dow Jones variable. Parmar (2013) select macroeconomic variable like reverse repo rate, CRR, SLR ,Repo rate, inflation rate, CPI , Index of industrial production, gold rate , oil rate, exchange rate to identify the relationship with stock market movement and predict market in future. Statistical methods used are correlation and ANOVA test. The research concludes that domestic macro economic variables affect stock market in long term. Ray Hirak , Sarkar Joy (2014) also suggests that some macro -economic indicators like output and exchange rate positively affects equity market behavior in a long run and negatively affect long term interest rates , money supply and inflation using unit root test and causality test.

B. Objectives of the study

The present study outlines analysis on macro-economic indicators influencing the capital market in India - Apr 2001 TO Mar 2010. To elaborate upon this theme the study examine the effects of FII, M3,WPI (wholesale price index) on leading stock market of India as NIFTY 50.

HYPOTHESIS

H01 - There is no significant impact of FII on NIFTY 50 of India.

H02 - There is no significant impact of M3 on NIFTY 50 of India.

H03 – There is no significant impact of inflation – WPI on NIFTY 50 of India.

II. RESEARCH METHODOLOGY

A. Secondary Data Collection

The secondary data for understanding capital market and macro-economic indicators will be collected through central statistical organization, government of India, NSE Nifty, RBI handbook, and various other sources such as previous research work, internet, books, and journals. As far as technique is concern, Multivariable Regression analysis is used to analyze the data.

The proposed model for this study is as follows.

- Nifty 50 = $\alpha o + ß1FII + ß2M3 + ß3WPI + \varepsilon$

  αo = Constant

  ε = Error term

ß1, ß2, ß3 are the coefficients of independent variables FII , M3 , and WPI respectively.

III. ANALYSIS & INTERPRETATION OF THE STUDY

The impact of macroeconomic determinants on the stock price is analyzed using regression analysis. As the independent variables have strong association among them that may bring spurious results, correlation analysis and multiple regression analysis is used in the study for model.

IV. CORRERLATION ANALYSIS

Table 1

Variable	NIFTY50	FII	M3	WPI
NIFTY 50	1	0.227	0.87	-.545
FII	0.227	1	0.214	-.134
M3	0.87	0.214	1	-.45
WPI	-.545	-.134	-.45	1

**Correlation is significant at the 0.05 level.(2 - tailed) **Correlation is significant at the 0.01 level.(2 - tailed)*

The correlation results reveals that there is a positive and significant relation between Nifty 50 with respect to M3 which shows at .87.It shows that an increase in the flow of of money supply boost up the stock market. The table no.1 shows that WPI and Nifty has a negative association with at - .545 Furthermore, it explained significantly positive association with FII and Nifty 50 at 0.227 but not significant in the researchers study period. Also table no 1 shows that there is a negative relation exist between WPI and money supply at - .45. There is a negative relation between WPI and FII at -.134. Furthermore, FII and M3 shows the positive correlation at .214.

V. ANALYSIS OF MULTIPLE REGRESSION

The impact of macro-economic indicators on the stock market NIFTY 50 is analyzed with regression analysis.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.888[a]	.788	.783	693.187	.788	143.715	3	116	.000

a. Predictors: (Constant), VAR00004, VAR00002, VAR00003 (Table no. 2)

b. Dependent Variable: VAR00001

Table no. 2 reveals the following results.
R is the square roots of R Square and which is correlation between the observed and predicted values of dependant variable NSE.R Square shows the percentage of the total variation of dependent variable which can be explained by the independent variables. Here R Square also recommends how the sample regression line fits the data. In the Table no 2 R Square is .788 , which means that about 78 percent variation can jointly explained by dependent variable of FII, M3 and WPI. The p value which is associated with sig F change is very small (.000) so the independent variables FII , M3 and WPI can jointly explain the variation in dependent variable NSE.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	207168217.087	3	69056072.362	143.715	.000[b]
	Residual	55738942.257	116	480508.123		
	Total	262907159.345	119			

a. Dependent Variable: VAR00001

b. Predictors: (Constant), VAR00004, VAR00002, VAR00003

The column of estimates provides the values for ß0,ß1,ß2,ß3 for this equation. The regression equation Y is

$Y = 454.263 + 0.009\ X1+0.001X2-10.711X3$

Here, Y = NSE , X1= FII, X2= M3,X3= WPI.

The results derive from co-efficient reveal the following result.
The co-efficient for FII is 0.009 which is significant at 10% confidence interval because its p value is less than 0.1. So the H01 null hypothesis rejected in FII. The co efficient of M3 and WPI is .000 which is less than 0.1.So the H02 and H03 also rejected. From the results it is reveal that though FII , M3 and WPI all the macro-economic indicators plays a significant role in NSE but FII plays a very important role in the NSE.

VI. CONCLUSION OF THE STUDY

The study concludes that India's leading stock exchange Nifty 50 influence by key macro-economic indicators like foreign institutional investors. As the Government increase the limits of FDI in LPG policy flow of FII increase which influence the stock market positively. Also the money supply M3 and WPI influence the NIFTY 50.

The empirical results exhibits that Indian stock market NIFTY50 have a significant impact of macro-economic indicators. The macro- economic indicators should be study carefully to increase the flow of investments from the nation.

Further study can be enhanced through choosing more economic indicators like CPI, money supply, interest rate, FII, to get more realistic results about stock market in the long run. The linkages between macro-economic indicator and stock market leads to economic growth which is maintained with sustainability will lead to stable governance and positively affected by government polices leads to economic growth.

REFERENCE

[1] Antonio Muhammed and Fauzi Hafidoh 2013,"The islamic capital market volatility A comparative study between Indonesia and Malaysia" in bulletin of monetary economics and banking p.no. 378-400.

[2] barasa job 2014,"Macro economic determinants of stock market performance in Kenya- case of nairobi stock exchange,research project in school of business university of nairobi p.no. 1-62.

[3] Jareno francisco and negrut Loredana 2016,"U.S. stock market and macro- economic factors "journal of applied business research vol. 32,no.1

[4] Parmar Chetna 2013,"Empirical relationship among various macro economics variables on Indian stock market" November vol.1 issue 6.

[5] Ray ,H. and Sarkar J. (2014),in "Macroeconomic link to Indian capital market :a post liberalization evidence Modern economy ,5,272-288.

[6] Subramaniam M.2015,"A study on impact of macro - economic variables in the stock market "international journal of economics and management studies, vol. 2 issue 10