International Research Journal of Management and Commerce
ISSN: (2348-9766)
Impact Factor- 5.564, Volume 5, Issue 2, February 2018
Website- www.aarf.asia, **Email** : editor@aarf.asia , editoraarf@gmail.com

IMPACT OF MACRO-ECONOMIC VARIABLES ON THE STOCK PRICES OF NIFTY IT

Ritika Luthra

Research Scholar,

IBMR, IPS Academy, Indore

Dr. V.S. Kushwaha

Director, IBMR, IPS Academy, Indore

ABSTRACT

This paper is an attempt to study the impact of macro-economic variables on the stock prices of NIFTY IT. There are a number of macro-economic variables that impact the different sectors of the economy, among them the exchange rate vis-à-vis dollar and crude oil have been taken up for the study at this juncture on account of valid reasons. The purpose of the study is to give insight to investors about the factors that majorly influence the IT sector. The study is spread over a longitudinal data for five years and simple statistical tests like correlation and regression have been employed so as to find out the impact of these two variables upon the stock prices of NIFTY IT. The study has helped to discover that the crude oil prices are insignificant and USD is significant in the determination of the stock prices of IT sector, particularly, NIFTY IT. The paper also develops the regression equation which can be used to determine the value of NIFTY IT, given the value of crude oil price and exchange rate vis-à-vis dollar. This will prove to be significant for those who either invest for profits or to those who have interest in the movement of stock prices.

Key words: Macro-economic variables, NIFTY, NIFTY IT, exchange rate vis-à-vis USD, crude oil prices, correlation, regression.

Introduction:

"Look at market fluctuations as your friend rather than your enemy; profit from the folly rather than participate in it."

- Warren Buffet.

The share market has always been of much interest to budding researchers and scholars. Looking at the extent of volatility in the market, research in the same is of much significant contribution to the society. There are two major stock exchanges in India, namely the Bombay Stock Exchange(BSE) and the National Stock Exchange(NSE). NSE, located in Mumbai, is the leading stock exchange in India. The vision behind the establishment of NSE was to bring more transparency in the capital market of India. The performance of NSE as a whole can be studied from NIFTY 50, which acts as the flagship index of NSE. It reflects the portfolio behaviour of blue chip companies and consists of 50 companies, which are selected on the basis of free float- adjusted market capitalization weighted index for India, out of 1600 companies that are traded on NSE. The following are the sectoral weightage in NIFTY 50:

Sector	**Weight (%)**
FINANCIAL SERVICES	35.98
ENERGY	13.61
IT	11.71
AUTOMOBILE	10.84
CONSUMER GOODS	9.91
PHARMA	4.22
METAL	4.06
CONSTRUCTION	3.86
TELECOM	2.19
CEMENT & CEMENT PRODUCTS	2
SERVICES	0.84
MEDIA & ENTERTAINMENT	0.78

(Source: Official Website of NSE)

The Sectoral Indices under NIFTY are- NIFTY Bank, NIFTY IT, NIFTY PSU Bank, NIFTY Fmcg, NIFTY Private Bank, NIFTY Metal and NIFTY Financial Services. This research paper intends to track down the impact of crude oil prices and exchange rate vis-à-vis USD on NIFTY IT particularly.

Macroeconomic Variables are indicators that signal the current and upcoming trend in the economy. They help in the assessment of overall economic growth of the country. The major economic variables in India are the GDP, the inflation rate, the unemployment rate,the interest rate, the exchange rate and the like. This study focuses on how the crude oil prices and exchange rate vis-s-vis USD impacts the NIFTY IT Index.

Review of Literature:

1. Chen, N., and Richard, R., et al., (1986) in their work have highlighted that stock returns are vulnerable to economic news that which can be measured in terms of variables through financial theories.
2. Sharma, G., and Mahendru, M., (2010) have taken the macro economic variables-exchange rate, gold price, foreign exchange reserves and inflation rate for the study. They then found that independent variables other than inflation rate and foreign exchange reserve impact the stock prices. Also, inflation rate and gold price do not impact the stock returns.
3. AbdelbakiHandal, H, (2013) in his study has shown that the Bahrani stock market is affected by the stock market liquidity, domestic investment, banking system development and the level of income. It also reveals that an important factor in the development of stock market is the macroeconomic stability.
4. Bhunia, A., (2013) in his work has observed that there is a relationship between world crude oil prices and Indian gold prices and Sensex. He also mentioned that in order to study the market prices, certain macroeconomic variables need to be studied.
5. Bhunia, A., and Pakira, S., (2014) in their paper have brought it clearly that there stands a long term relationship among the three macroeconomic variables namely gold prices, exchange rates and the Sensex. It also supports the existence of a causal relationship between the gold price and the exchange rate in respect of the time period taken for the study.
6. Guan-Ru, C., and Wu H.M., (2014) in their study have proved that the changes in the interest rates significantly and positively impact the stock prices. The studies earlier have proved that the interest rate increase only beyond a certain level impacts stock prices, but this study has shown a difference in the previously accepted approach.
7. Kibra, Mehmood, et al, (2014)in their study have found that exchange rate and GDP savings Granger cause the money supply, and, GDP savings Granger cause the stock market returns of Pakistan. It was also seen that the stock returns of Pakistan are

positively impacted by GDP savings, Exchange Rate, Money Supply, GDP Per-capita and Inflation.

8. Khanna, Srivastava, et al, (2015) have proved that there exists a significant impact of the changes in the macroeconomic environment and the short –term and long-term choice of finance by the firm. It has discussed the impact of macroeconomic variables on the capital structure decisions of the firm.

Research Methodology

Objectives:

1. To study the impact of exchange rate vis-à-vis dollar on the stock prices of NIFTY IT.
2. To study the impact of crude oil prices on thestock prices of NIFTY IT.

Hypothesis:

1. Exchange Rate vis-à-vis US Dollar does not impact the stock prices of NIFTY IT.
2. Crude Oil Prices does not impact the stock prices of NIFTY IT.

Variables:

There are three variables taken for the purpose of this study, namely, the stock prices of NIFTY IT, the rate of exchange vis-à-vis dollar and crude oil prices. For the study, the stock prices of NIFTY IT are taken to be the dependent variables and exchange rate and crude oil prices are taken to be the independent variables. The variables have been selected on a rational basis and not randomly. With the growing relevance of major changes in the economy like Globalization, FDI and FII, the IT sector has gained more and more importance. The IT sector of any economy forms its strong foundation, owing to this, more and more people invest their funds and trade in IT stocks, and therefore to examine the movements into the same, it has been taken up for the study.

The crude oil prices is the first independent variable taken for the study, the reason for selecting the same being that crude oil is a very important item of the international market, and hence it either directly or indirectly affects the economy of every nation. Exchange Rate is another independent variable taken up for the same, because dollar highly influences various assets. This currency acts as a global benchmark. Dollar index has an influence on all the markets, which are, currency, equity, bond and commodity markets and so it is taken up as the independent variable.

For the ones who have the real idea about the market, they know that there exists a relationship between exchange rate and crude oil prices. The crude oil prices are quoted in USD only. When there is an increase in the oil prices, the dollar depreciates against the currencies of oil exporting countries, and, the currencies of oil importing countries depreciate.

India's rising competitiveness has made it a blooming export country inviting FDI and external commercial borrowings, and major inflows are in USD, therefore, the USD is also an important variable for the study.

Data Analysis and Interpretation:

The daily closing stock prices of NIFTY IT, crude oil price and USD from April 2012 to March 2017 have been taken as the longitudinal time period for the study.

The data was then matched date wise and edited accordingly. Further log return was performed so as to ensure that the data is stationary. It was done using the following formula:

Log return= ln (current value/previous value) * 100

The data was then analysed further.

From the table 1.1 we can conclude that crude oil and the stock prices of NIFTY IT have a weak or low degree of positive correlation which means that an increase in crude oil prices leads to a slow increase in the stock prices of NIFTY IT. It can be seen that the USD and the stock prices of NIFTY IT have a weak negative or low degree correlation which means that an increase in USD leads to a mild decrease in the stock prices of NIFTY IT. So we can conclude that the USD is significant and crude oil is insignificant in determining the stock prices of NIFTY IT.

From the table 1.2 we can see that R is 0.140, R represents the simple correlation which is of a low degree in this case. Further, the value of R^2 indicates how much of the total variation in the stock prices of NIFTY IT can be explained by crude oil prices and USD. Its value is 1.9%, which is very low.

From the table 1.3 we can see that the significance level of regression is 0.001 which is less than 0.05, which means that regression model statistically significantly predicts the stock prices of NIFTY IT.

Table 1.4 can help us in the prediction of the stock prices of NIFTY IT when crude oil prices and USD is given. The regression equation being:

NIFTY IT= 0.000 + 0.012(crude oil) – 0.488(USD)

Thus we can say that dollar has a negative impact upto the extent of 48% and crude oil is insignificant in determining stock prices of NIFTY IT.

Table 1.1 Correlations

		NiftyIT	CrudeOil	USD
Pearson Correlation	NiftyIT	1.000	.045	-.137
	CrudeOil	.045	1.000	-.133
	USD	-.137	-.133	1.000
Sig. (1-tailed)	NiftyIT	.	.116	.000
	CrudeOil	.116	.	.000
	USD	.000	.000	.
N	NiftyIT	716	716	716
	CrudeOil	716	716	716
	USD	716	716	716

Table 1.2 Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.140[a]	.019	.017	.0112667

a. Predictors: (Constant), USD, CrudeOil

b. Dependent Variable: NiftyIT

Table 1.3 ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	2	.001	7.078	.001[a]
	Residual	.091	713	.000		
	Total	.092	715			

a. Predictors: (Constant), USD, CrudeOil

Table 1.3 ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	2	.001	7.078	.001[a]
	Residual	.091	713	.000		
	Total	.092	715			

a. Predictors: (Constant), USD, CrudeOil

b. Dependent Variable: NiftyIT

From the table 1.3 we can see that the significance level of regression is 0.001 which is less than 0.05, which means that regression model statistically significantly predicts the index of NIFTY IT.

Table 1.4 Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1 (Constant)	.000	.000		.624	.533	-.001	.001
CrudeOil	.012	.016	.027	.721	.471	-.020	.043
USD	-.488	.137	-.133	-3.564	.000	-.756	-.219

a. Dependent Variable: NiftyIT

Conclusion:

Although the area of share market has been of prime importance for researchers always, there is always a scope for further investigation as the market is volatile and in influenced by various factors. This research paper is mainly focussed upon the IT sector specifically, the stock prices of NIFTY IT and the degree and extent to which they are influenced by the exchange rate vis-à-vis dollar and crude oil prices so as to enable the investors to understand how the dollar and crude oil impact the IT sector. The paper has discovered that the crude oil prices are insignificant and USD is significant in the determination of stock prices. Moreover the NIFTY IT can be further determined by means of regression equation when the change in crude oil prices and USD is given to us. The paper is an attempt to find the degree of influence that these two variables are likely to have upon the IT sector. There is also a scope further so as to analyse which other factors are likely to have an impact on IT and to what extent.

References:

1. Abdelbaki, H. H., (2013), “Causality relationship between macroeconomic variables and stock market development: evidence from Bahrain”, The International Journal of Business and Finance Research, Vol 7(1), pp 69-84.
2. Bhunia, A., (2013), “Relationships between Commodity Market Indicators and Stock Market Index-an Evidence of India”, *Academy of Contemporary Research Journal,* Vol 3, pp 126-130.
3. Bhunia, A., and Pakira, S., (2014), “Investigating the impact of gold price and exchange rates on sensex: an evidence of India”, *European Journal of Accounting, Finance and Business,* Vol 2(1), pp 1-11.
4. Chen, N., Roll R., et al, (1986), “Economic Forces and the Stock Market”, *The Journal of Business,* Vol 59(3), pp 383-403.
5. Guan-Ru, C., and Wu, H.M., (2014), “A non-linear relationship between stock prices and interest rates: evidences for G8 countries”, *Global Business and Economics Research Journal,* Vol 3(11), pp 1-17.
6. Khanna, S., Srivastava, A., et al, (2015), “The Effect of Macroeconomic Variables on the Capital Structure Decisions of Indian Firms: A Vector Error Correction Model/Vector Autoregressive Approach”, *International Journal of Economics and Financial Issues,* 2015, Vol 5(4), pp 968- 978.
7. Kibra, U., Mehmood, Y., Kamran, M, et al, (2014), “The Impact of Macroeconomic Variables on Stock Market Returns: A Case of Pakistan”, *Research Journal of Management Sciences,* Vol 3(8), pp 1-7.
8. Sharma, G., and Mahendru, M., (2010), “Impact of macro-economic variables on stock prices in India”, *Global Journal of Management and Business Research,* Vol 10(7), (1556-5068).