IMPACT OF FINANCIAL FACTORS ON STOCK MARKET:
EMPIRICAL EVIDENCES FROM INDIA, U.S. AND U.K.

A
SUMMARY OF THESIS
SUBMITTED
FOR THE AWARD OF DEGREE OF DOCTOR OF PHILOSOPHY
(PH.D.)
IN
DEPARTMENT OF ACCOUNTANCY & LAW
(COMMERCE)

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INTRODUCTION

The segment of a financial market of an economy from long-term capital is raised via instruments such as shares, securities, bonds, debentures, mutual funds is known as the security market of that economy. A security market has components such as a security regulator (Like SEBI in India), stock exchanges, different share indices, brokers, FIIs, jobbers, etc. There are different kinds of transactions which take place in a security market such as badla, reverse badla, future trading, private placement, etc.

Stock Market refers to the market provided by different stock exchanges to the securities which include share, debenture, bond and other government securities. It is a market place where buyers and sellers of shares and securities admitted to dealings, can do business and competitive open prices.

The Stock Exchange is an organized market for purchase and sale of listed industrial and financial securities. The securities traded on Stock Exchange include shares and debentures of public limited companies, Government securities, etc. It serves the following major functions:

- Makes a floor available to the buyers and sellers of stocks and liquidity comes to the stocks. It is the single most important institution in the secondary market for securities.
- Makes available the prices of trading as an important piece of information to the investors.
- By following institutionalized rules and procedures, it ensures that the participants in the stock market live up to their commitments.
- Passes updated information to the enlisted companies about their present stockholders (so that they can pass on dividends etc., to them).
- By publishing its ‘Index’, it fulfills the purpose of projecting the moods of the stock market.

As we know there is no. of variables which affect the economy directly or indirectly, some variables are long term and some are short term in nature, in this study researcher considered
long term variables, known as macroeconomic variables, through various literature researcher found the another name of macroeconomic variables is financial (economic) variables, there are many studies which considered the variables, relates to monetary, fiscal policy and financial market (represented by their Indices), used the word analysis of financial variables (Jesper Bank Wulff & Jakob Husted Simonsen 2013) that’s why instead of using macroeconomic variable researcher used financial economic variables.

MOTIVATION FOR RESEARCH
The Stock market is an important element of the economic structure of a country. The stock market plays a critical role in the development of the industry and commerce of the area that eventually affects the economic structure of the country to a great extent. The Stock market is viewed as a very significant element of the financial sector of any economic structure. Furthermore, it plays a crucial role in the mobilization of capital in many of the emerging economies. There are many factors which affect the stock market behaviour rapidly. The variation due to the different factors reflects its impact on the economy also. It is said that if one wants to discover the economic structure of the country, he/she should read out the behaviour of the securities markets. So, in the above context, there is a need to conduct present research to investigate the relationship between stock market and economic financial factors.

REVIEW OF LITERATURE
To develop a clear understanding about research topic, a detailed review of previous studies on stock market has been organized during the course of this study. The review of literature is classified in to following four broad categories:

- Theoretical Framework
- Literature related to developed countries
- Literature related to developing countries
- Literature related to group countries

Above mentioned classification of the earlier literature has been done to understand the various issues of the impact of financial (economic) variables on stock market and whether Indian
empirical result behaves differently when compared to other countries results. Basically, this classification also helps to find the model which gives conflicting results in case of developed and developing countries. And found the mixed results and conclusion, means some studies says there is a strong positive relationship between macroeconomic variables and stock market returns and some says relationship is a bit weak.

**RESEARCH OBJECTIVES:** - Researcher aimed at achieving the following objectives:

1. To examine the stock markets of India, U.S. and U.K. with regard to State influence.
2. To identify and analyse the economic financial factors in selected stock markets.
3. To investigate the relationship among India, U.S. and U.K. stock markets on economic financial factors.
4. To analyse the impact of economic financial factors on selected stock markets.
5. To recommend an action plan for sound investment decisions in international scenario.

**RESEARCH METHODOLOGY**

The study investigated the impact of financial (economic) variable such as: Gross Domestic Product (GDP), The Index of Industrial Production (IIP), Consumer Price Index (CPI), Foreign-exchange reserves (also called forex reserves or FX reserves), International Crude Price (CP) as Independent Variables on selected stock market, namely Indian Stock Market (S&P BSE SENSEX (BSE 30) index, S&P CNX Nifty index (NIFTY 50), London Stock Exchange (Financial Times Stock Exchange 100 Index (FTSE 100) and New York Stock Exchange Dow Jones Industrial Average (Dow 30) as Dependent Variables. The data sets of all variables have been considered from April, 2001 to March, 2013 on a monthly basis. All the required information for the study has been retrieved from the International Financial Statistics (IMF Data Base).
RESEARCH ASSUMPTION

The researcher hypothesized that selected financial (economic) variables and selected stock markets are independent.

<table>
<thead>
<tr>
<th>Name of Variables</th>
<th>Symbol Used</th>
<th>Proxy Used</th>
<th>Source</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombay Stock Exchange- Sensitive Index</td>
<td>SENSEX, Nifty</td>
<td>As a proxy to Indian Stock Market</td>
<td>IFS</td>
<td>Index</td>
</tr>
<tr>
<td>Financial Times Stock Exchange 100 Index</td>
<td>FTSE_100</td>
<td>As a proxy to United States Market (New York</td>
<td>IFS</td>
<td>Index</td>
</tr>
<tr>
<td>Dow Jones Industrial Average (Dow 30)</td>
<td>DJI</td>
<td>As a proxy to United Kingdom Market (London Stock Exchange)</td>
<td>IFS</td>
<td>Index</td>
</tr>
<tr>
<td>Consumer price index</td>
<td>CPI</td>
<td>As a proxy to inflation</td>
<td>IFS</td>
<td>Index</td>
</tr>
<tr>
<td>Crude Oil Price</td>
<td>CP</td>
<td>As a proxy to International Crude Oil Price</td>
<td>IFS</td>
<td>US Dollars per Barrel (Average)</td>
</tr>
<tr>
<td>Gross Domestic Product</td>
<td>GDP</td>
<td>As a proxy to economic growth</td>
<td>IFS</td>
<td>National Currency Millions</td>
</tr>
<tr>
<td>Index of Industrial Production</td>
<td>IIP</td>
<td>As a proxy to economic growth</td>
<td>IFS</td>
<td>Index</td>
</tr>
<tr>
<td>Foreign-exchange reserves</td>
<td>FX</td>
<td>As a proxy to Reserve Assets</td>
<td>IFS</td>
<td>USD Millions</td>
</tr>
</tbody>
</table>
The justification of variables selection is supported by the table 1.2.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Variables</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>FXRE</td>
<td>Maghayereh, Sikalao-lekbobane, et, al.</td>
</tr>
<tr>
<td>5.</td>
<td>CP</td>
<td>Sadiye Çiftçi, Martin Sirucek, Samveg Patel, Olowe, Rufus Ayodeji, Robert D. Gay, Jr., Hosseini, et, al.</td>
</tr>
</tbody>
</table>

**TOOLS FOR ANALYSIS**

Descriptive statistics (to know the subject knowledge of the variables considered in the whole research work), Augmented Dickey Fuller Test (ADF) (to check the stationarity of data) Ordinary least square (to test the relationship between the selected financial (economic) variables and the stock price index), Johansen Co – integration test (to check the long run relationship between selected variables), Granger Causality test (to examine the relation between individual explanatory variables and selected indexes, either unidirectional, bidirectional or no relation have been employed to examine the objectives of the study.)
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Objectives</th>
<th>Methodology/ Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>To examine the stock markets of India, U.S. and U.K. with regard to State influence.</td>
<td>Researcher, Studied, following securities exchange law:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The U. S. Securities and Exchange Commission (SEC)</td>
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<tr>
<td></td>
<td></td>
<td>• The Financial Conduct Authority (FCA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• SEBI (Securities and Exchange Board of India)</td>
</tr>
<tr>
<td>2.</td>
<td>To identify and analyse the financial factors in selected stock markets.</td>
<td>Through Review of literature</td>
</tr>
<tr>
<td>5.</td>
<td>To recommend an action plan for sound investment decisions in international scenario</td>
<td>Through findings</td>
</tr>
</tbody>
</table>

**DATA ANALYSIS, RESULTS, FINDINGS AND CONCLUSION**

The descriptive or summary statistics of all the dependent, namely, the S&P BSE SENSEX (BSE 30) index, S&P CNX Nifty index (NIFTY 50), Financial Times Stock Exchange 100 Index (FTSE 100) and Dow Jones Industrial Average (Dow 30) and independent variables, namely, Gross Domestic Product (GDP), The Index of Industrial Production (IIP), Consumer Price Index (CPI), Foreign-exchange reserves (also called forex reserves or FX reserves), International Crude Price (CP) with their logarithm returns. The main objective of this is to develop subject knowledge of the variables considered in the whole research work. Summary statistics are presented through E-Views.

“The presentation of summary statistics for all the selected variables through the frequency distributions of the data series of selected variables is shown by Histogram divides the series range (the distance between the maximum and minimum values) into a number of equal length intervals or bins and displays a count of the number of observations that fall into each bin. A complements of standard descriptive statistics are displayed along with the histograms.
Descriptive statistics include the Mean, Median, Maximum, Minimum, Standard Deviation (Std. Dev.), Skewness, Kurtosis, Jarque-Bera and its probability.”

By Augmented Dickey Fuller Test (ADF), In case of India researcher found all selected variables are stationary at I(1) except LGDP (log of Gross Domestic Product) and LIIP (log of Index of Industrial Production), these variables are stationary at I(2) because t- statistics is less than the critical value (5% level) at I(1). In case of United State, all selected variables are stationary at I(1) except LGDP (log of Gross Domestic Product) and LIIP (log of Index of Industrial Production), these variables are stationary at I(2) because t- statistics is less than the critical value (5% level) at I(1). In case of United Kingdom, all selected variables are stationary at I(1) except LCPI (log of Consumer Price Index), LGDP (log of Gross Domestic Product) and LIIP (log of Index of Industrial Production), these variables are stationary at I(2) because t- statistics is less than the critical value (5% level) at I(1).

Ordinary Least Square (OLS) method, show the impact of the financial (economics) variables on stock market. Here, “Both the predicted and all the predictor variables are log-transformed. This is associated with the price elasticity meaning that the percentage change in Y is caused by one percentage change in X”. For example in the case of this study, 1% change in IIP will cause stock prices to decrease by 6.69%. The coefficient of determination ($R^2$) are 0.5956(SENSEX), 0.5765(Nifty), 0.5957(DJI), 0.4283(FTSE_100) which are considered as 59%, 57%, 59%, and 42%. This indicates that about 59%, 57%, 59% and 42% of the total systematic variations in the SENSEX, Nifty, DJI and FTSE_100 are explained by the variation in the explanatory variables, namely CPI, GDP, IIP, CP and FX. The remaining 41 %( SENSEX), 43 % (Nifty), 41 %( DJI) and 58 % (FTSE_100) could be attributed to the some other factors and stochastic error term which are not included in the model.

Through Johansen Co- integration model, researcher found that all the series are integrated an order one or I(1). Means there is at least 1cointegrated equation, or we can say all selected variables have long run association.
Through granger causality test, researcher, found unidirectional relation, bilateral relation (Feedback) and Exogeneity (Independence) among the variables.

**CONCLUSION**

The study investigated the impact of financial (economic) variable such as: Gross Domestic Product (GDP), The Index of Industrial Production (IIP), Consumer Price Index (CPI), Foreign-exchange reserves (also called forex reserves or FX reserves), International Crude Price (CP) on selected stock market, namely Indian Stock Market (S&P BSE SENSEX (BSE 30) index, S&P CNX Nifty index (NIFTY 50), London Stock Exchange (Financial Times Stock Exchange 100 Index (FTSE 100) and New York Stock Exchange Dow Jones Industrial Average (Dow 30). The data sets of all variables have been considered from April, 2001 to March, 2013 on a monthly basis. All the required information for the study has been retrieved from the International Financial Statistics (IMF Data Base).

Descriptive statistics (to know the subject knowledge of the variables considered in the whole research work), Augmented Dickey Fuller Test (ADF), to check the stationarity of data, Ordinary least square (to test the relationship between the selected financial economic variables and the stock price index), Johansen Co – integration test (to check the long run relationship between selected variables), Granger Causality test (to examine the relation between individual explanatory variables and selected indexes, either unidirectional, bidirectional or no relation have been employed to examine the objectives of the study. The study reveals long run relationship among the variables and the results of Granger Causality test reveals unidirectional, bilateral relation (Feedback) and exogeneity (Independence) among the variables.

**LIMITATIONS OF THE STUDY**

Every empirical work has to pass through certain limitations, so, this study also has its own limitations. Few unavoidable limitations of the present study are presented below:
• Data collected for the present study is completely secondary in nature along with 12 years’ time span.

• While compiling the monthly data for the purpose of analysis, some adjustments have been made because data on some variables was available only on quarterly basis like Gross Domestic Product (GDP) and International Crude Oil Price (CP).

• The study is limited only to long term factors not short term.

• The study has focused the stock market behavior from the financial year 2001-2013. Therefore, financial (economic) variables statistics have been used and analyzed accordingly.

• The nature of this study has been primarily a desktop study. It could not incorporate the views and opinions of the stock market practitioners and investors on the sphere of effect of financial (economic) variables on stock market.

FUTURE RESEARCH POTENTIAL

In the present research work, an attempt has been made by the researcher to apply various econometric techniques for analysing impact of financial (economic) variables on stock market. But, there are some areas of research which could not take up in the study. It would be worthwhile for the future researches to investigate these areas as listed below:

There is a scope for further research by extended the study period.

• Data collected for the present study is completely secondary in nature. Researcher could not incorporate the views and opinions of the stock market practitioners, investors, dealers etc. So, there is a scope for further research by collecting views on the sphere of impact of financial (economic) variables on stock market of these parties.

• The study is focused only on long term variables. So there is a wide scope of further research by considering the long term as well as short term.

• Additional researches can be done using some other linear or non-linear mathematical modeling techniques, namely, Hidden Markov Models, Wavelet Neural Networks etc.
• Presently researches about only developing and developed country. So, there is a wide scope of further research for grouped countries as well.

REFERENCES AND BIBLIOGRAPHY


• Anayochukwu, O. B. The Impact of Stock Market Returns on Foreign Portfolio Investment in Nigeria. Journal of Business and Management (IOSRJBM), 2(4), 10-19


