

**AN ENQUIRY INTO THE EFFECT OF MACROECONOMIC  
VARIABLES ON SECURITY PRICES IN INDIA  
DURING THE LIBERALISED PERIOD**

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## **ABSTRACT**

Economic growth of any country is largely associated with the changing dynamics of its stock market. The stock indices may be considered as a barometer for national economies and as a manifestation of the economy and business performance. The Indian economy was liberalized significantly to promote private capital and opened up considerably so as to allow even the foreign investors to invest their fund in the Indian market. Opening up of the economy ensures more choices to the investors for taking their investment decisions. To make their investment more profitable they need to analyse the behaviour of stock price movement. Moreover, the growing linkages and integration of the Indian economy and its financial system with the world have meant that India has become more vulnerable to external developments. It is often argued that the movement of stock indices is highly sensitive to the changes in the fundamentals of the economy and to the change in expectations about future prospects. The reaction of prices to the macroeconomic information has long been the subject of various studies in economics and finance. Although a number of studies have been conducted earlier to explain the behaviour of stock market movement, the impact of macroeconomic variables on stock prices remains one of the challenging issues before the investors, portfolio managers, policy makers and academicians. Most of the earlier studies typically focused on developed economies and the effects of these macroeconomic factors on the stock prices in emerging country like India were not adequately studied. Further, the results of the earlier studies are contradictory. Accepting the present value theory, some of the earlier researchers have maintained that it is possible to forecast an increase or decline in stock prices through economic indicators. Dealing with the subject from the perspective of the efficient market theory, others have argued that stock prices reflect all future expectations and thus, one cannot estimate future price changes on the basis of economic data of the past.

These contradictory findings of the earlier studies are the principal motivation behind conducting this research work. The present study is an endeavour to investigate the impact of macroeconomic variables on Indian stock market in the short and the long run using a series of econometric analysis. A wide range of Vector Autoregression models including Johansen cointegration test, vector error correction model, Granger causality test, impulse response

analysis and variance decomposition analysis are used to estimate and interpret the long run, short run and causal relationships between Indian stock prices and eleven macroeconomic variables over the period from April 1993 to March 2013. These macroeconomic variables consist of six internal macroeconomic variables, namely inflation rate, interest rate, money supply, index of industrial production, gold price and foreign exchange reserve and five external macroeconomic variables namely, crude oil price, exchange rate, foreign institutional investments, foreign trade, and US S&P 500 stock index. The monthly closing value of Sensex and Nifty have been considered as a proxy of the Indian Stock Market and used to obtain a measure of market price movement of Indian securities.

In this study we have presented extensively the evidences on the relationships between selected macroeconomic variables and the stock prices in India. The estimated results indicate that the Indian stock market is sensitive to changes in macroeconomic fundamentals in the long run. However, in short-run very few macroeconomic variables like consumer price index, foreign trade and exchange rate affect the stock prices. The results of the multivariate analysis reject the hypothesis that there is no long-term causal relationship between the variables and observe that there exists a bidirectional relation between stock prices and the macroeconomic variables considered in the study. The Granger causality test shows a short-run unidirectional relationship from consumer price index to stock prices, while a bidirectional causality is observed between stock price movement and each of the two macroeconomic variables, namely exchange rate fluctuation and foreign trade. The impulse response function analysis and variance decomposition analysis reveal that the stock prices are more sensitive to the shocks in the stock prices themselves. It indicates that in short term the stock prices are relatively exogenous in respect of the selected macroeconomic variables in the system. This may be due to the fact that speculative trading continues to dominate the Indian stock market and the stock prices may follow a random walk pattern in short-run. In the long term, the technological improvement or the evolution of the economy and change in the policies governing the stock market operation may lead to reach this significant relationship. Hence, all macroeconomic variables have impact on the Indian stock market to some extent in long-run. Therefore, the study suggests that the Indian stock market is approaching towards informational inefficiency in the long-run. It implies that the sensible investor in India can attain super-normal returns using historical data of stock prices, and macroeconomic indicators in long-run. This may enable the traders and investors to work out profitable strategy for trading or to take investment decision in long-run. Further, the study

concludes that the potential investors should pay more attention to domestic macroeconomic variables because in long-run the Indian stock market is driven more by domestic macroeconomic factors in comparison to the global factors, which are determined externally.

This extensive research regarding the effect of macroeconomic variables on security prices in India addresses several dimensions of this basic question for the specific case of the stock market. Findings of this study provide a comprehensive understanding of the dynamic relationship between macroeconomic variables and stock prices in India. It discusses the theoretical hypotheses on this relationship and compares with empirical evidences as available from earlier research works. The present study is expected to add several primary contributions to the existing literature. The findings of this investigation should enable the investors and portfolio managers- both local and foreign to make effective investment decisions. At the same time, the study is expected to offer some insights for financial regulators and policymakers for formulating economic and financial policies. A precise prediction of the relationship may help the government agencies in designing policies to encourage more capital inflows into the capital market. It is worth to carry out such studies on emerging economies like India as the study contributes to the managerial science by providing scientific elements through identification and validation of the effects of macroeconomic variables on the stock market performance. Therefore, more efficient risk measurement and management models can be established allowing greater confidence levels to the decision making process in stock market investments.

This study suggests some future research to enhance our understanding about the dynamic relationship between real economic activity and the behavior of the stock market in India. The possible extension of this study is to consider the impact of the selected macroeconomic variables along with the other important macroeconomic determinants which might jointly influence the Indian stock market. Apart from understanding Indian stock markets pricing mechanism based on the contributions of the selected macroeconomic variables, there remain other important issues that affect the price generating process. These issues are the cost of equity capital, asset valuation, industry analysis, a firm's management and operational efficiency analysis, and so on. Moreover, instead of using only the quantitative macroeconomic variables the study suggests the inclusion of socio-economic and political factors as dummy variables on these grounds. Further, the study could empirically test the relationship by considering the potential structural breaks in the time series data. But, this is beyond the aim of the present study. It is left for further research.