Indian Stock Market Reaction to Macroeconomic Events

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Abstract

Announcements/ events related to macroeconomic data such as GDP growth, Inflation, Monetary policy (such as repo rate) and Budget are events keenly awaited and closely watched by stock market participants, policy makers, analysts and other prominent institutes/ agencies. This is because such events / data announced help in understanding the country's performance on the economic front, and help in drafting policies that are important for the cumulative growth of the economy. It was observed that these event announcements first propagate to the stock markets (Bernanke, S. Ben & Kuttner, 2005). For example, it was observed that data related to GDP growth, Inflation (CPI), Monetary policy, Industrial output, Forex reserves, Exchange rate etc. gets special attention in understanding the behavior of the stock market as data related to these variables carries important information for the economy and thus for the stock markets (Stock exchange provides a barometer of the economy's health and prospects)[1]. Also, an event like budget announcement carries great importance in the economy and is keenly awaited. Darrat F. Ali (1990) showed that fiscal policy deficit exerts a significant lagged effect on Canadian stock prices. Similarly, Ewing T. Bradley (1998) presented that budget deficit exerts significant influence on stock markets in Australia and France.

When such announcements happen, stock market shows abrupt variations - that is, stock market swings in relation to the released data/ announcement. These variations in stock market are due to the possibility of 'abnormal' returns related to the announcements. A number of studies have been performed to understand and analyze the variations in stock market due to such events in India, but to the best of our knowledge, the results of these studies -

a) are limited only to Nifty (which accounts for only 70.28% of the market capitalization);

b) do not consider the impact of macroeconomic variables/ events on sectors in the broader market index CNX500; and,

c) are based on monthly closing data for Nifty returns.

In the current research work, CNX500 (Index of 500 stocks covering 97.3% of market capitalization) is used as a reflection of a broad stock market index (market index). Key sectoral indices such as, IT, Financial Services, Consumer Goods and Energy, are used to understand and analyze the variations in these sectors due to data/ policy announcements/ events related to Repo rate, GDP growth, Inflation (CPI) and Budget, and to analyze if there

[1]http://www.bdlive.co.za/opinion/columnists/2013/06/24/stock-exchange-provides-barometer-of-economys-health-and-prospects

exists a possibility for analysts, prominent institutes/ agencies, and fund managers to make more selective choices for their investments in the stock market.

Usage of a broader index CNX500 and analysis of sector specific variations are important to cover the depth of the stock market across sectors and to come closer to any conclusion on the possibility of abnormal returns in the stock market and in specific sectors. For example, financial services sector gets impacted due to monetary policy announcements and since this sector has maximum weight in the Nifty, it influences the returns of Nifty more than any other sector represented in Nifty. Hence it is important to consider for study a broader index that includes more stocks and provides a more comprehensive analysis of the stock market.

Event study methodology is used to calculate abnormal returns in CNX500 due to announcements/ events. Importance of the event study arises from the fact that abnormal performance returns at the time of an event provide a measure of the impact of this type of event on the stock market (Kothari, S.P., and Warner, Jerold B, 2006). Event window and an event date for the above variables are so chosen to provide a surprise element in the data that was not much expected by market participants or stock markets. Such events have the potential to provide abnormal returns and hence help understand the related market reaction. Daily return data of securities in CNX500 is used in the study which allowed more accurate measurement of abnormal returns. Long estimation windows of around 150 days are used in the study to calculate the alpha and beta of each security, and to remove biases of other events. Calculated alpha and beta are used to calculate the expected return of each security in CNX500 during the event window. Abnormal returns and cumulative abnormal returns for each event during the event window are used to calculate the swing/ variation in the overall market and in key sectoral indices as mentioned above.

A few results presented in this thesis showed similar reactions in the CNX500 and sectoral indices when compared with the results arrived using Nifty as market index. However, in many cases results are the opposite of results arrived with Nifty as market index. A few results showed statistically insignificant returns around event dates for some events when used with Nifty as market index, but received statistically significant returns with CNX500, thus showing that there exists a possibility of abnormal returns if we chose a broader market index. Similar results are obtained for sectoral indices as well. For example, it is observed that while repo rate announcement has significant impact on the financial sector in Nifty stocks, it has non-significant impact on the finance sector in CNX500 stocks. The study also helped in presenting a view that in case of a repo rate decrease announcement, IT sector shows the most statistically significant abnormal return; hence IT stocks may provide better opportunity for abnormal returns than any other sector if we choose a broader stock market. Similarly, we got contrasting results for other announcements/ events - GDP Growth, Inflation (CPI) and Budget announcements - for Nifty or CNX500 as market index.

The study contributes to the existing literature of measuring abnormal returns in the stock market due to events such as monetary policy announcement (Repo rate), macroeconomic

data announcement (GDP growth, Inflation (CPI)), and policy announcements (Budget) in three ways. Firstly, it provides a comprehensive view of the broader stock market and sector specific abnormal returns using a comprehensive CNX500 index as proxy for market index. Results thus arrived are more reliable because CNX500 covers 97.3% of market capitalization covering not only the large cap stocks but also stocks from mid-cap and small-cap categories. Secondly, the results provide a comprehensive and comparative view of sectoral abnormal returns using CNX500 and Nifty as market index, thus providing an option to stock markets, policy makers, analysts and other prominent institutes/ agencies, to take informed decisions on sectoral stocks or sectors in the case of such events. Thirdly, the results are based on the daily closing prices of stocks, CNX500 and Nifty.

In the next stage, the current research work can be extended to cover analysis of all sectors of the economy, to cover other events that are important for the economy, and can possibly be extended to analyze the impact of such events announced in key foreign markets and their impact on the Indian stock market.

Key Words: Stock Market, Nifty, CNX500, Sectoral Indices, Monetary Policy, Budget, GDP Growth, CPI, Events, Abnormal Return.

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Acronyms Used

GDP Growth	-	Gross Domestic Product Growth
STD	-	Standard Deviation
RR	-	Repo Rate
Repo Rate	-	Repurchase Rate
IIP	-	Index of Industrial Production
CRR	-	Cash Reserve Ratio
CPI	-	Consumer Price Inflation
WPI	-	Wholesale Price Inflation
VECM	-	Vector Error Correction Model
SLR	-	Statutory Liquidity Ratio
AR	-	Abnormal Return
AAR	-	Average Abnormal Return
CAAR	-	Cumulative Average Abnormal Return