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A STUDY OF THE IMPACT OF FII ON THE SECTORAL MARKET INDICES

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Abstract *One of the major reasons boosting the economic growth of India has been the unparalleled globalization resulting competition and improved innovations. As a result inflow of foreign capital has become a benchmark of economic growth. Foreign Institutional Investors (FIIs) have become mediums of international assimilation and growth incentive. Foreign capital provides domestic markets with improved technology, enhanced products, complimentary services etc. Policy initiatives to attract FII in India have also had diverse impact on the markets. The current paper makes an attempt to study the relationship and impact of FII on the sectoral market indices of the Bombay Stock Exchangeusing simple statistical tools like Correlation coefficient and Granger-Causality test. Based on the last 14 years data from 2001-2014 it was found that FII has significant impact on some of the sectoral indices in India. This has improved opportunities of financial integration enabling the returns from the sectoral indices to be favorable for the investors.*

Keyword: *Globalisation, Granger-Causality Test, Regression Analysis, Financial Integration*

INTRODUCTION

Foreign investments can be understood as investments which are made across countries in their financial assets and production processes. A country may benefit by gaining access to technology of advanced nature or may be at a loss due to foreign investments posing threat and competition to its domestic and infant industries. Foreign investments may lead to a better balance of payments situation and high factor productivity. Foreign investments may also be a source of rise of multinational corporation monopolies and repatriation of large amount of funds from the host country. Foreign investment finds its way to a country in two ways: foreign direct investment (FDI) and foreign institutional investment (FII). FDI is a medium to long-term investment which is a major source of production. FII is a short-term investment, mostly directed towards financial markets.

India opted for market oriented reform measures in response to the BoP crisis it faced in the early 1990s. The crisis was manifest in significant deterioration in external sector indicators. Thus, there was a conscious move to build forex reserves to meet future contingencies as a part of the structural reform measures in the post-crisis period. In the beginning, onlypension funds, mutual funds, investment trusts, asset management companies, nominee companies, and institutional portfolio managers were permitted to investdirectly in the Indian stock markets. Gradually, since1996–1997, the investment basket diversified to include registered university funds, endowment funds, foundations and charitable trusts. It is since 1996–1997 that foreign flowshave come to form a substantial part of the foreign portfolioinvestments in the Indian markets.The impact of the various reform measures was seen in the growing number and volume of operations of the FDIs and FIIs. FIIs are often criticized in many quarters for their potential to destabilize the Indian capital market. Unlike FDIs which are more stable in character, FIIs indeed could be quite volatile.

The movement of the Indian stock market, in the years 2003–2004 and 2004–2005, showed a remarkable rise and was evidentlydriven by the robust actions of foreign flows especially FIIs. The FII flows ledto a net equity purchase of as much as US$ 6.6 and US$ 8.5billion in 2003 and 2004 respectively according to reports from the Bombay Stock Exchange. This is clearly a signal of the significant contribution made by FIIs in Indian stock market. The FII flows during 2007 made a net investment of about US$ 17 billion in Indian stock markets. This investment was nearly 10 times higher than the domestic mutual funds' net investment. In 2008,due to the world wide financial crisis the foreign investors withdrew over US$ 3.2 billion from Indian equities alone in the first three months of 2008. Till the end of 2009–2010, foreign flows remained negative. These contrasting figures over theyears show the importance of foreign investments in the overall investment structure of Indian stock market. The current paper makes an attempt to study the relationship and impact of FII on the sectoral market indices of the Bombay Stock Exchange using simple statistical tools like Correlation coefficient and Granger-Causality test using the last 14 years data from 2001-2014.

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LITERATURE REVIEW

Chousa *et al*. (2008) tried to review whether stock markets are simply known to be centre of all speculative activities, or whether they are importantly able to draw firm level FDI in the form of cross-border mergers and acquisitions activities. They applied pooled regression technique by covering nine leading emerging economies for the period of 1987-2006. They found a strong positive impact of stock markets oncross border mergers and acquisitions deals and values. Foley *et al*. (2005) made an effort to understand the relationship betweenoutbound FDI and levels of domestic capital formation through regression analysis for amuch broader sample of countries for the 1980s and 1990s and concluded that it had been natural to assume that foreign investment was introduced at the cost of domestic investment.

According to Jo (2002) FII flows induce greater volatility in markets compared to domestic investors. Gordon & Gupta (2002) show that lagged domestic stock market returns are an important determinant of FII flows. Agarwal (1997) observed that FII inflows depend on stock market returns, inflation rates (both domestic and foreign) and risk. He showed that, in terms of magnitude, the impact of stock market returns and the risk turned out to be the major determinants of FII inflow. Chakrabarti (2001) has observed that FIIs and domestic investors are at par with each other as far as the access to knowledge is concerned in the Indian markets. Mukherjee et al. (2002) suggested that though FII flows to and from India are significantly affected by returns in the domestic equity market; the latter is not significantly influenced by variation in these flows. They also found that apart from the return in the domestic market there are other covariates of such flows. David et al. (2004) have shown that macro-economic factors like current account surplus and higher interest rates have been responsible for increase in FII inflows to an emerging country.

Trivedi *et al*. (2006) showed that foreign investors can play the role of market makers and book their profits. Prasanna (2008) has empirically examined the contribution of foreign institutional investment, particularly among companies included in BSE Sensex. The relationship between foreign institutional investment and firm specific characteristics in terms of ownership structure, financial performance, and stock performance, was also examined. It is observed that foreign investors invested more in companies with a higher volume of shares owned by the general public. Kumar (2006) emphasizes that FII inflows influences share price movements and various indices. He also affirms that the movement of indices in Indian markets depends on the trade done in limited number of stocks leading to volatility. Sandhya *et al*. (2005) related foreign capital flow and stock market volatility. The study found that unexpected flows have a greater impact than the expected flows on the stock indices. A study conducted by Kumar (2002) on the role of FIIs in Indian stock market found that FIIs and Indian mutual funds combined together is the most powerful force in driving the Indian market.

METHODOLOGY

The current paper makes an attempt to study the relationship and impact of FII on sectoral indices of Bombay Stock Exchange using different statistical tools based on the last 14 years data from 2001-2014. The data of the stock market indices are taken from the website of Bombay Stock Exchange and the data on FII is taken from www.indiastat.com. Initially the relation between FII and the stock market indices has been assessed by examining the correlation which exists between various indices of the financial market in India. The paper also tries to explore the causal relationships

Table 1: Descriptive Statistics

	FII	SENSEX	AUTO INDEX	CAPITAL GOODS INDEX	CONSUMER DURABLES INDEX
Mean	57580.40	20.14	37.15	41.09	31.83
Median	41856.30	17.78	27.28	41.40	29.51
Standard Deviation	58113.33	36.83	66.11	65.20	56.85
Range	220890.10	133.48	261.02	232.82	187.00

FMCG INDEX	HEALTHCARE INDEX	IT INDEX	METAL INDEX	OIL & GAS INDEX	BANKEX
16.55	20.52	17.33	41.87	29.16	27.87
14.20	19.40	13.76	16.77	16.57	33.18
22.79	32.97	45.86	89.66	52.58	43.62
69.91	128.66	183.60	307.63	181.83	160.68

Source: Author's compilation

between foreign flows and stock market indices. Through the causality analysis it is tried to infer whether foreign flows drive the market returns or returns guide the FII flows. The most widely accepted nomenclature for causality is Granger Causality.

DATA ANALYSIS

The empirical analysis is initiated with a simple understanding of the descriptive statistics of the various financial parameters used in the present research as shown Table 1.

Correlation is applied to study the statistical relationship of the variables FII, BSE Sensex and the various sectoral indices. Table 2 presents the output. Based on the results it can be concluded that there is a moderate positive correlation between FII and BSE Sensex. All the sectoral indices enjoy a positive correlation with FII signalling an increase in returns from these sectors as FII increases across the different industrial sectors. It is seen that FII has a significant impact on Consumer Durable index, FMCG index, and Healthcare index at 10 percent level of significance.

Table 2 clearly shows that FII has a positive association with all the sectoral indices considered. The degree of association is moderate for Sensex (0.410), Consumer Durable index (0.51), FMCG index (0.641), Healthcare index (0.471) and Bankex (0.418), whereas the level of association is very low for Auto index (0.286), Capital goods index (0.196), IT index (0.354), Metal index (0.176), and Oil and Gas index (0.125).

Since the reliability of results of the Granger causality test depends on whether the variables are stationary or not, we first tested unit root of the variables using Augmented Dickey-Fuller test. The result of the unit root test is reported in Table 3. It shows that all the variables are stationary at 5 percent level of significance and the Consumer durable index and FII at first difference. It is well-known that Granger causality test is sensitive to the choice of lag length. To avoid this problem we have applied Akaike information criterion to choose the optimum lag length. The critical value at level is -3.911 and at first level of difference is -3.175.

The results of pair-wise Granger Causality tests are reported in Table 4. It is observed that FII Granger causes BSE Sensex. This implies that the Bombay Stock Exchange is influenced

Table 2: Correlation Matrix

	SENSEX	AUTO INDEX	CAPITAL GOODS INDEX	CONSUMER DURABLES INDEX	FMCG INDEX
Pearson correlation	0.410	0.286	0.196	0.51*	0.641*
Significance (2 tail)	0.145	0.322	0.503	0.062	0.014
Relationship	Positive	Positive	Positive	Positive	Positive

	HEALTHCARE INDEX	IT INDEX	METAL INDEX	OIL & GAS INDEX	BANKEX
Pearson correlation	0.471*	0.354	0.176	0.125	0.418
Significance (2 tail)	0.089	0.214	0.547	0.670	0.177
Relationship	Positive	Positive	Positive	Positive	Positive

Source: Author's compilation

Table 3: Unit Root Test Results

VARIABLES	AUGMENTED DICKEY-FULLER TEST STATISTIC
AUTO INDEX	-4.437
BANKEX	-5.353
CAPITAL GOODS INDEX	-4.149
CONSUMER DURABLES INDEX	-4.799*
FII	-4.743*
FMCG INDEX	-4.696
HEALTHCARE INDEX	-4.972
IT INDEX	-4.582
METAL INDEX	-4.697
OIL AND GAS INDEX	-4.379
SENSEX	-5.044

Source: Author's compilation

by the trend of FII in the country. It signals that the returns expected from this market will have to be analyzed and accounted for after carefully understanding the investment pattern of FII in the market. It is a clear trend of foreign investments being attracted into the Indian stock market and influencing the returns generated from it.

Table 4: Granger Causality Test Results

Null Hypothesis	F-Statistic	Prob.
SENSEX does not Granger Cause FII	1.54	0.28
FII does not Granger Cause SENSEX	4.09	**0.07**
AUTO_INDEX does not Granger Cause FII	2.11	0.19
FII does not Granger Cause AUTO_INDEX	2.40	0.16
CAPITAL_GOODS_INDEX does not Granger Cause FII	2.01	0.20
FII does not Granger Cause CAPITAL_GOODS_INDEX	5.83	**0.03**
CONSUMER_DURABLES does not Granger Cause FII	0.54	0.61
FII does not Granger Cause CONSUMER_DURABLES	3.29	0.10
FMCG does not Granger Cause FII	0.13	0.88
FII does not Granger Cause FMCG	0.04	0.96
HEALTHCARE does not Granger Cause FII	0.77	0.50
FII does not Granger Cause HEALTHCARE	1.25	0.34
IT does not Granger Cause FII	1.87	0.22
FII does not Granger Cause IT	0.07	0.94
METAL does not Granger Cause FII	0.62	0.56
FII does not Granger Cause METAL	8.05	**0.02**
OIL___GAS does not Granger Cause FII	2.98	0.12
FII does not Granger Cause OIL___GAS	4.04	**0.07**
BANKEX does not Granger Cause FII	1.49	0.29
FII does not Granger Cause BANKEX	5.72	**0.03**

Source: Author's compilation

The output shown in Table 4 also signals unidirectional causality of FII towards specific indices like Capital goods index, Metal index, Oil and Gas index and Bankex. This leads to conclusion that if FII increases in these sectors, it will have a positive impact on the respective sectoral indices thereby propelling more investments in the sectors of the economy.

Therefore the empirical analysis leads to understand that FII has an impact on almost all the sectoral indices at varying degrees. FIIs flow into the stock market which increases the returns. The flow of FII in the Indian equity market with respect to the banking sector has been seen since 2002. The relationship between FII flows and Bankex is positive. The high level of causality between FII flows and Metal index clearly indicates that major FII flows are directed towards the metal sectors. Any rise in the FII flows to the metal sectors will yield higher stock returns of the companies in the metal sectors of the Indian markets. This is also visible in the ever-increasing flows of foreign investment into these sectors and the high rate of returns achieved. FII net flows have a positive and direct impact on the Capital index and Consumer Durables index. Oil and gas index, FMCG index, and Healthcare index.

FINDINGS AND CONCLUSION

The surge of FDI and FII hastened the Indian economy and also gave prospects to Indian industry for technological progress, gaining entrée to global managerial skills, optimizing utilisation of human and natural resources and global competitive advantage with greater competence This can be understood in context of India's enhanced integration with international markets through various channels like portfolio investments, participatory notes and ADR/GDR route. With major policy changes and synchronisation across the globe at different levels there is an increasing importance of FDI especially in the fields of financial services, manufacturing, information technology, construction etc. Overseas investments from India also reflected large acquisition deals by Indian companies to gain market share. These aspects of FDI made the Indian stock market very dependent on the pattern of foreign long term investments. FIIs are considered to be the most predominant player in the equity market. It was seen that the liquidity sustenance from FIIs, the growth opportunities, and corporate profitability provided much impetus to the Indian stock markets. This had a favourable impact with rising share prices and improved price earning ratios of scrips in the domestic markets. The total assets held by these institutional investors were also much greater than the other market participants. Thus a continuous rise in foreign investments reflects an increase in the confidence of international investors on the domestic markets with an anticipation of increased returns.

The present research aims to understand the impact of FII on the sectoral stock market indices. It was found out that the markets are influenced by FIIs. Most of the sectoral indices move according to the trend of FII pattern received in the country having a strong bearing on the returns of the companies. This automatically has influence on the market expectations of the listed companies as reflected by the returns generated from these scrips. This analysis will be helpful to investors in creating s portfolio and also to policy makers in the light of policy implementations. Since these funds form a part of forex reserves of India, a sudden outflow can lead to a major decline in reserves leading to exchange rate fluctuations and vulnerability.The focus of the policy makers should be on preserving strong macroeconomic benchmarks, relatively higher returns, lesser volatility, and overall stability of markets through appropriate institutional reforms.

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