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RELATIONSHIP BETWEEN FII, SENSEX AND MARKET CAPITALISATION

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ABSTRACT

The investments from most developing countries are not made through the domestic savings alone but are complemented by various investments from abroad. Foreign investments have made a profound impact on the Indian economy. Portfolio investments in India channeled via foreign institutional investors have been the most dynamic source of capital. Hence, it is necessary to study the causal relationship between net FII, stock market and market capitalization. The study has been conducted for a period starting from April 2005 to April 2009 by using Granger Causality Test. The result indicates that there is bi-directional causality between FII and market capitalization. It further states that there is uni-directional causality between FII and return and also between return and market capitalization.

KEYWORDS

Foreign Institutional Investor, Granger Causality test, Unit Root Test.

INTRODUCTION

Until the 1980's India's development strategy was focused on self-reliance and import-substitution. Current account deficits were financed largely through debt flows and official development assistance. There was a general disinclination towards foreign investment or private commercial flows.

The 1990's began with major crises. In the wake of the Gulf war and the consequent expulsion of Indian expatriate labour from the Middle East, foreign exchange remittances fell down. As the balance of payments position deteriorated, a panicked withdrawal of funds deposited in India by Non Resident Indians. As a part of the reforms agreed with the IMF, the rupee was devalued by 20%. The trade regime and the regulatory framework were liberalized and industrial licensing was abolished in all. Foreign investment was invited in a wide range of industries, including consumer goods. The Government dropped its insistence that foreign equity participation provide specific benefits in terms of technology transfer or export earnings. The limit on foreign equity participation was raised to 51% for most industries and even 100% in some cases.

Foreign investment was especially sought in the infrastructure sector previously monopolized by state enterprises, i.e power generation, highway and port construction, telecommunications, oil and natural gas exploration, etc. and the services sector, where foreign capital had been gradually eliminated as a matter of deliberate policy was reopened to foreign investors. They were invited to invest in financial services, retail banking, life and general insurance. Restrictions on the use of international brand names were removed. Reforms in the technology policy have provided greater recognition of intellectual property rights. This liberalization coincided with growing interest in emerging markets especially among the global pension funds. In a major break from the past, foreign institutional investors were allowed to make portfolio investments in Indian companies, subject to overall limits on ownership within each firm (Kumar 2002).

FOREIGN INSTITUTIONAL INVESTMENT

With the ongoing globalization, the role of foreign institutional investors in foreign capital flows has increased to a great extent. They are regarded as kingpins of financial globalization. The developing countries have a chronic shortage of capital which is supplemented by the FIIs. The increased participation by foreign investors increases the potentially available capital for investment and thus lowers the cost of capital. The purchases of FIIs give an upward thrust to domestic stock prices and thus increase the price-earning ratio of firms, leading to an overall level of investment in an economy.

Portfolio investment is expected to improve the functioning of domestic stock exchange. The host country seeking foreign portfolio investment has to improve its trading and delivery system. Consistent and business friendly policies have to be followed in order to retain the confidence of foreign investors. These factors catalyze the development of domestic stock exchange which will be benefited by the domestic investors as well (Rao, Murthi and Rangarajan, 1999). Portfolio investors have access to advanced technology, best possible information and vast and global experience in investment business. Due to these qualities, the entry of FIIs can substantially increase the allocative efficiency of domestic stock market.

In an increasingly complex scenario of the financial world, it is of paramount importance for the researchers and policy makers, to know the scenario of economic and financial system to achieve the regulatory goals of stability and efficiency of the system. Keeping this in view, this study examines the relationship between stock market, market capitalization and net FII investment in India. It also tries to analyze the impact of market capitalization and net FII investment on the stock market in India.

This paper aims to examine whether there is any causal relationship between the Net FII, BSE Sensex and the Market Capitalization for the period April 2005 to April 2009.

REVIEW OF LITERATURE

Using a monthly data-set for the period May 1993 to December 1999, Chakrabarti (2001) finds that the FII net inflows were not only correlated with the return in Indian equity market but was more likely the effect than the cause of the Indian equity market return.

Batra (2003) uses daily data on FII equity purchases and sales and equity returns between January 2000 - December 2002 on the BSE sensex and monthly data from January 1994 to December 2002. He examines three issues, firstly if trading by FIIs reveals any trends of positive feed back trading (he finds strong evidence of positive feedback strategy followed by FIIs on a daily basis whereas no evidence on a monthly basis). Secondly, if there is evidence of herding by the FIIs (He indicates that foreign investors have a tendency to herd on the Indian equity market even though not on the same day. In times of pressure in the stock market, there is excessive selling side herding). And lastly the destabilizing impact, if any, of the FII trading strategies on stock prices in India.

Kulwant Rai and N. R. Bhanumurthy in their paper," Determinants of Foreign Institutional Investment in India: The role of Return, Risk and Inflation" tries to examine the determinants of Foreign Institutional Investments in India. They found that FII inflow depends on stock market returns, inflation rate (both domestic and foreign) and ex-ante risk.

Suchismita Bose and Dipankor Coondoo (2004) tried to find the impact of the FII Regulations in India in their work,"The Impact of FII Regulations in India: A Time-Series Intervention Analysis of Equity Flows", during the period January 1999 to January 2004, through a multivariate GARCH regression model. Their results strongly suggest that liberalization policies have had the desired expansionary effect and have either increased the mean level of FII inflows and/or the sensitivity of these flows to a change in BSE return and/or the inertia of these flows.

Basabi bhattacharya & Jaydeep mukherjee (2006) in their paper "An Analysis of Stock Market Efficiency in the Light of Capital Inflows and Exchange Rate Movements: The Indian Context" tries to determine the lead and lag interrelationships between the Indian stock market, net foreign institutional investment, and exchange rate. To test this, they employed Granger non-causality for the sample period January 1993 to March 2005. The result suggests a bi-directional causality between stock price and the net foreign institutional investment, an uni-directional causality from change in exchange rate to stock returns (at 10% level of significance) and the absence of any causal relationship between exchange rate and net investment by FIIs.

Duk Ahm Kong and S. Sakthivel (2004) in their work "A Study on Foreign Investment in India since 1990s" tried to analyze the trend and pattern of foreign investment in the country in the pre and post liberalization period. Secondly, they examined the spread/concentration of foreign investment in the different regions of India. Thirdly, they identified the major source of countries from which foreign investment flow into India. Finally, they tried to assess the vital sectors that attract foreign investment into India.

Indrani Chakraborty (2001) in his study, "Economic Reforms, Capital Inflows and Macro Economic Impact in India", attempts to explain the effects of inflows of private foreign capital on some major macroeconomic variables in India using quarterly data for the period 1993-99. The analyses of trends in private foreign capital inflows and some other variables indicate instability. Co integration test confirms the presence of long-run equilibrium relationships between a few pairs of variables. Granger Causality

Test shows unidirectional causality from FINV to nominal effective exchange rates- both trade-based and export-based-, which raises concern about the RBI strategy in the foreign exchange market. Finally, instability in the trend of foreign currency assets could be partially explained by the instability in FINV with some lagged effect.

Merton shows that the expected return in the market with unrestricted investor base is higher than restricted investor base. The entry of foreign investors in the stock market broadens the investor base, which increases diversification and risk sharing, lowering the ris premium for country specific volatility.

N P Tripathy studied the dynamic relationship between stock market, market capitalization and net FII investment in India during the period from June 2002 to June 2005 by using Granger Causality Test and Vector Auto Regression Model. The result indicates that there is a unidirectional causal relationship between market capitalization and stock market, net FII investment with stock market. Again the VAR analysis shows that stock return and market capitalization have an impact over net FII investment in the expected direction over a short horizon.

METHODOLOGY

DATA

The data used in our study comprises the monthly data of the net Foreign Institutional Investors, BSE Sensex and the Market Capitalization. The monthly data have been collected from the SEBI Bulletin for a period of 4 years from April 2005 to April 2009. The data for the BSE Sensex has been taken from the website of the Bombay Stock Exchange. Net FII Investment in Rupees is used in our study. The rationale behind choosing the market capitalization is that, returns only incorporate the price changes, whereas market capitalization takes into consideration not only price changes but volume of trading as well.

DATA ANALYSIS

UNIT ROOT TEST

Time series data, especially data relating to financial variables exhibit a trend pattern. Therefore, it is necessary to detrend the data so as to apply further test on it. A variable that is being de-trended is said to be stationary series. The two test namely Augmented Dickey Fuller (ADF) and Phillips Perron (PP) tests are used. When Augmented Dickey Fuller test is taken into consideration we use lagged values of the variable itself whereas Phillip Perron test uses residuals from Dickey Fuller Regression.

GRANGER CAUSALITY TEST

The dynamic linkage is examined using the concept of Granger's Causality Test. Testing causal relationship between two stationary series X_t and Y_t, can be based on the following two equations.

$$Xt = \alpha + \sum_{j=1}^{k} \beta_j x_{t-j} + \sum_{j=1}^{K} \lambda_j y_{t-j} + U_{xt}$$

$$Yt = \mu + \sum_{j=1}^{k} \delta_j x_{t-j} + \sum_{j=1}^{K} \phi_j y_{t-j} + U_{yt}$$

Where, k is a suitably chosen positive integer, γ_j and β_j, j = 0, 1, …k are parameters and α's are constants, and U_t's are disturbance terms with zero means and finite variance. The null hypothesis that Y_t does not Granger-cause X_t is not accepted if the β_j's, j>0 in the above first equation are jointly different from zero using a standard joint test. Similarly, X_t Granger causes Y_t, if the γ_j's are j>0, coefficients in the above second equation are jointly different from zero.

EMPIRICAL ANALYSIS

The analysis part consists of a general descriptive statistics followed by a unit root testing comprising of ADF and PP tests and finally by the causality testing. The unit root test confirms that the data are stationary, hence Granger Causality test is conducted on the data.

Table 1: Descriptive Statistics

	Net FII	BSE Sensex	Market Capitalisation
Mean	0.000759	0.010016	15.05157
Median	0.000783	0.029052	15.03062
Maximum	0.004682	0.193071	15.78541
Minimum	-0.00323	-0.278871	14.30762
Std. Dev.	0.001849	0.080225	0.361594
Skewness	0.11236	-1.085869	0.024876
Kurtosis	2.56173	5.331929	2.346423
Jarque-Bera	0.495267	20.73178	0.877179
Probability	0.780646	0.000031	0.644945
Observations	49	49	49

The BSE return is negatively skewed but the FII and the MC are positively skewed. Net FII and MC are leptokurtic but BSE return is mesokurtic. The Jarque-Bera test shows that the JB statistics is about 0.495267, 20.73178and 0.877179 for BSE, FII and MC. As the values of JB statistics is very high, we do not reject the null hypothesis, in other words, the residuals are normally distributed. Hence there is no heteroskedasticity.

Table 2: Pair-wise Granger Causality Tests between Net FII, BSE Sensex and MC

Null Hypothesis:	Obs	F-Statistic	Probability
LR does not Granger Cause SFII	48	0.08113	0.77707
SFII does not Granger Cause LR		7.57652*	0.0085
LMC does not Granger Cause SFII	48	4.98588*	0.03057
SFII does not Granger Cause LMC		2.45697*	0.12401
LMC does not Granger Cause LR	48	3.21234*	0.07981
LR does not Granger Cause LMC		0.09526	0.75902

* and ** statistically significant at 1% and 5% level respectively.

The above table shows the Granger Causality Test results which concerns with examining the impact of FII investment on stock market. The reported F-values and P-values suggest that there is bi-directional causality between FII and market capitalization. It further states that there is uni-directional causality between FII and return and also between return and market capitalization. In other words, any change in FII will influence MC and vice versa. Whereas any change in return will not influence FII but change in FII will definitely influence return i.e, FIIs entry into the stock market is not due to the change in stock return. Similarly any change in MC will not influence return whereas change in return will influence MC.

SUMMARY AND CONCLUSION

In this paper we examined the causal relationship between FII inflows and stock market returns in Indian economy. The issue assumes relevance in light of the mixed results reported earlier for time periods when the quantum of inflows was substantially less, compared to the recent times. Granger causality test reveals that there is bi-directional causality between FII and market capitalization. It further states that there is uni-directional causality between FII and return and also between return and market capitalization.

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