CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

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Conclusions and Recommendations

6.1 Summary and Conclusions

The current study is aimed at investigating and modelling probable causal relationship between FII holdings in equity shares of Indian companies, and informational efficiency of the stock prices, stock liquidity and stock return volatility. The objectives have been set on the basis of the research gaps identified in the literature on the Indian evidence. To achieve such objectives, chapters II to IV have built up a conceptual understanding as summarised in paragraphs below.

Chapter II has analysed the nature and causes of FII/FPI flows from the point of view of the investors and the host countries. The benefits of international diversification, participation in the growth of the foreign markets and abnormal returns arising out of market segmentation are the major driving forces behind demand for foreign securities. As economic cycles across countries tend to evolve differently over time, and also industrial compositions of national markets can significantly vary, returns on national markets are not perfectly positively correlated. Therefore, a judiciously diversified international portfolio can achieve higher return for a given level of portfolio risk, or lower risk for a given level of portfolio return. While, higher economic and capital market growth prospects of some countries may attract FPIs, market segmentation leads to different expected excess returns across countries’ having similar level of risk, and creates opportunity for international portfolio investments.

The host countries invite FPIs as their participation induces development in terms of regulatory reforms, institutional reforms and better functioning of the capital markets, which enhances investor confidence and participation. Development effect catalyses resource effect
as increased investor confidence and participation in capital markets leads to increase in
domestic savings and external resources. Increase in availability of risk capital increases
equity prices and reduces cost of raising capital.

An analysis of international trend in FII/FPI flows in chapter III has shown manifold growth
in international portfolio investments in last one and a half decade. In spite of the annual
growth rate fluctuating widely, total global foreign portfolio investment assets grew at a
compounded annual growth rate of 11.77 percent between the years 2001 and 2014. The only
major decline was witnessed during the global economic crisis of 2007-08. Although GDP
growth rates and average stock market returns are higher in emerging economies than those
in developed economies, and also the returns of the stock markets in the source countries of
FPIs have significantly lower correlations with those from stock markets of emerging
economies than among themselves, over two third of total global FPI assets in equity are
invested in developed countries with large amounts of cross investments among the top FPI
asset holding countries. This may stem from the fact that higher returns of the emerging
markets are associated with significantly higher risk (i.e. standard deviation of returns) than
that in developed markets. Also, positive skewness and negative excess kurtosis of return
distributions from most of the emerging economies indicate high risk of extreme loss
whereas, negative skewness and positive excess kurtosis of the return distributions from stock
markets of most of the developed countries signify greater stability of return and lower risk of
extreme outcomes. Marginally positive kurtosis of return distributions of the emerging
economies of Asia as a group (excluding the Middle East) shows comparatively lower risk of
extreme outcomes than other emerging economies, and renders it as the safest group of
emerging economies for international equity investments.
The analysis in chapter IV has found that periodic amendments and modifications in The Securities and Exchange Board of India (Foreign Institutional Investors) Regulations, 1995, and the policies of the RBI are made to turn India into a globally competitive destination for FPI flows. The modifications are aimed at accessing greater amount of international risk capital for the Indian industries as a whole, and also for specific core sectors to boost up economic growth of the country. The SEBI (Foreign Portfolio Investors) Regulations, 2014, by substantial easing of the entry norms, rationalizing and simplifying foreign portfolio investments in India, is expected to further enhance FPI flows into Indian capital markets.

Chapter V has empirically investigated the existence of any definite relationship of FII holdings with informational efficiency (Part-A), liquidity (Part-B) and volatility (Part-C) at both firm and index levels. In Part-A, for firm level analysis, Damodaran’s Price Adjustment Coefficient is calculated as a proxy for informational efficiency of 49 firms over 48 quarters of the study period. Any significant relationship between informational efficiency, as measured by the Price Adjustment Coefficient, and FII holding in a firm’s equity capital, is refuted by the findings of comparison of the price adjustment coefficients between top and bottom quartile firms (on the basis of FII holdings at the beginning of each quarter). Results of vector autoregression and Granger Causality test, involving Price Adjustment Coefficients of the stocks under study, do not find any evidence of causal linkage between informational efficiency of a stock and FII holding in either direction. This leads to the conclusion that FII holdings neither affect nor are affected by informational efficiency of Indian equity stocks or vice versa.

At index level, Damodaran’s Price Adjustment Coefficient for NIFTY is calculated and analysed for its relationship with net FPI flows into Indian equity markets. The results reiterate the findings of the firm level analysis as it finds absence of any significant impact of
FII flows into Indian equities on NIFTY returns and vice versa. One very significant finding in this part of the study is that a new market wide information is discounted in the prices faster than a new firm-specific information. A new firm specific information is fully reflected in the prices by the end of the 12th day of the release, whereas a new market-wide information is fully reflected only by the end of 2nd day.

In Part-B of chapter 5, Amihud’s Illiquidity is estimated as a proxy for liquidity, where an increase in Amihud’s Illiquidity signifies a decrease in liquidity and vice versa, for all the sample companies over the entire study period. Results of bivariate causality analysis find unidirectional causal influence of liquidity on FII holdings. The results of vector autoregression reveal significant positive relationship between a stock’s liquidity during a quarter and FII holding in the stock during the next quarter. Findings of VAR Granger causality tests reiterate those of bivariate causality analysis, and confirm that liquidity of a firm’s stock during a quarter cause FII holdings during the next quarter, whereas vice versa is not true.

To test the existence of the aforesaid relationship at index level, Amihud’s Illiquidity estimates for NIFTY are calculated. Vector autoregression and VAR Granger causality tests refute existence of any significant causal relationship from both directions leading to the conclusion that liquidity at index level neither affects nor is affected by net FII flows into and out of Indian economy.

In Part-C, bivariate causality analysis of firm level data does not find any causal relationship between stock return volatility and FII holdings. The findings are reiterated by the results of vector autoregression and VAR Granger causality tests. The index level analysis find absence of any significant causal influence of FII flows into and out of Indian equity markets on index return volatility or vice versa. Also, no evidence of a causal relationship is found between FII
flows and the expectations about index return volatility in the near term as reflected in the India VIX, which rejects the popular belief that FII flows increase return volatility. But index return individually and all the variables together are found to significantly Granger cause the FII flows. Very high R-squared values of the VAR equations signify high explanatory power of the models. VAR Granger causality tests involving changes in volatility index of Chicago Board Option Exchange reveal that volatility expectations in the equity markets in US may positively influence FII flows to Indian stock markets.

Besides summarising the previous five chapters, the concluding chapter VI also lays down the implications and limitations of the present study, and outlines the scope for further research in the sections that follow.

6.2 Implications of the Study

The implications of this study for investors, policy makers and regulatory agencies are as detailed below.

Implications for Investors and Traders

- As Price Adjustment Coefficients (PAC) signify the speed of incorporation of a new information into stock prices or the market index, they can be used to identify undervalued or overvalued stocks when and after a relevant information is released. Thus profit potential from equity portfolios or index portfolios can be significantly enhanced by using PAC.

- The time taken by a stock’s price or the value of an index to fully adjust to new information can be reasonably estimated using PAC. Therefore, for short term traders, use of PAC can help in deciding the right time of exit from a stock, stock or index options or futures.
• Efficient and early identification of undervalued or overvalued stocks followed by trade decisions by a larger investor base shall help in faster price discovery.

• The VAR models developed in the study provides insight into the behaviour of FII investments. Dependable forecasts about net FII flows into and out of Indian equity markets over a coming quarter can dent widely varying and fast changing speculations about their behaviour and may reduce market volatility in short term, enhance investors’ confidence and keep the market liquidity stable.

Implications for Policy Makers and Regulatory Agencies

• The significant difference in time required for incorporation of index level and stock level information indicates lack of transparency in corporate affairs, high level of information asymmetry between insiders and outsider investors, and between different groups of investors, and slow dissemination of firm specific information. Measures to ensure faster and quality disclosure of corporate developments are required to be taken in order to protect the interests of the minority shareholders.

• The study does not find any significant evidence to term FIIs as a destabilising force for Indian equity markets. The belief of destabilising FII flows may be a behavioural bias towards FIIs. The short term surge in stock return volatility after increased FII movements are due to volatile speculations about future events including FII flows. As preventive measures, spreading rumours about corporate and regulatory events, baseless stock recommendations in public space, selling of insider information and insider trading must be stopped. Stringent disclosure requirements, norms and regulations, stronger and faster enforcement mechanism are needed to be in place to
reduce chance of market manipulation from exploitation of informational asymmetry by all market participants including FIIs.

- Retail investors are needed to be educated to enable them to differentiate between fundamental information and rumours. A real time updated common and free access database is to be built to help investors access economy and company specific financial and non-financial value relevant information.

- Benefits of FII capital must be tapped to a greater extent to fund huge investment requirement in infrastructure and other core sectors in India. To attain this objective, FII investment ceilings should be raised gradually in all such sectors.

- As a result of increasing FII participation, stock market liquidity, volatility and efficiency may become dependent on FII flows in future. The VAR models developed in the study might help to identify such dependence and forecast any large movements in liquidity or volatility due to FII activities. This, in turn, may help the regulatory authorities to adopt requisite pre-emptive steps to foil such aberrations.

6.3 Limitations of the Study

In spite of the importance of the present study for modelling the behaviour of FII and its impact on stock market, it suffers from the following limitations –

- Firm level FII holdings data in Indian context are available only at the end of each quarter as firms disclose them at quarterly intervals and CMIE collects and compiles these data from quarterly financial statements of the firms. Analysis of data of higher frequency could have revealed more about the relationships and the VAR models could be made more efficient for forecasting purpose.
As calculation and reporting of volatility index in India has started from the year 2008, the span of time available for study involving it is quite small. Also, firm level study involving implied volatility could not be performed as for many stocks the option volumes were very thin over most of the study period.

Future regulatory changes with wide and heavy impact on domestic and world economy, and shifts in international econo-political relationships, may bring regime changes causing structural breaks. The empirical findings and their interpretation may be subject to changes due to structural breaks in the data series as the values of the parameters of the model may not remain same through all the time periods.

Notwithstanding the above-mentioned limitations, the present study explores true relationships between FII holdings and various market microstructure variables and also breaks some myths with sound empirical evidence.

6.4 Scope for Further Research

A few areas for further research on the same subject are identified below.

- Analysis of behaviour of FII flows before and during global economic crisis and country specific economic turmoil can be made which, in turn, may help in examining the possibility of forecasting economic crisis by modelling such flows.

- FIIIs globally exhibit a trend of preference for investing in the economies where the stock market return distributions are negatively skewed and leptokurtic. Cross sectional analysis of the effect of relative skewness and kurtosis of the equity return distributions on portfolio flows across economies can be made.
- The existence or non-existence of relationships between FII holdings, informational efficiency of the stock prices, stock liquidity and stock return volatility, as explained by the VAR models, can be tested for time-invariance, i.e. whether they remain same during bull and bear phases or before and after major crisis periods.

- The response pattern of FIIs and domestic institutional investors (DII) to idiosyncratic volatility shocks can be studied and compared, which may throw light on various important aspects of institutional behaviour.

- Another area of research interest could be whether FIIs are better informed than domestic institutional investors (DII) in India, and how such informational asymmetry, if exists, affect stock price discovery in Indian market.