Main Findings and Conclusions

The findings emerged from the present study have already been presented in the preceding five chapters in an appropriate manner but in order to measure the significant effect of foreign institutional investors on underlying stock market and to give self contained and precise conclusion, the summary of the broad findings is essential. This would facilitate in giving suggestions, if any, based on the findings. Therefore, the present chapter provides major findings and their policy implications. The chapter has been divided into six parts. First section covers the major objectives, hypothesis of the present study and research methodology used to achieve the desired objective of the study. The second section covers the results and evidence related to the impact of foreign institutional investment on the return of the underlying stock market. The third section provides the result related to the impact of foreign institutional investment on the volatility of the underlying stock market. The fourth section summaries the results related to the impact of foreign institutional investment on the trading volume and market capitalization of the Indian stock market. The major push and pull forces affecting the arrival of foreign institutional investments in Indian stock market forms the subject matter of the Fifth section. Last section gives some suggestions that would help policy markers and regulators in strengthening India’s stock market.

9.1 Objectives, Hypotheses and Methodology

Research Objectives & Hypotheses: This study was undertaken primarily to measure the impact of foreign institutional investors investment on the Indian stock market. More specifically, the present study was aimed to achieve the following objectives:

1) To bring out the impact of FIIs investment on the return of Indian stock market;
2) To assess the impact of FIIs on the volatility of the stock market in India;

3) To examine whether arrival of FIIs have affected trading volume and market capitalization of Indian stock market;

4) To identify the determinants of FIIs investment and assess their impact on FII flows; and

5) To suggest policy guidelines regarding FII flows to India on the basis of findings emerging from this study.

Keeping in view the above-mentioned objectives of the study, it was intended to test the following hypotheses:

a) There is no relationship between India’s stock market return and FII flows;

b) The economic fundamentals such as exchange rate, interest rate, economic growth rate, differential interest rate don’t affect the flow of FIIs in India;

c) The stock market return in India is equal for the pre and post introduction of FIIs investment;

d) There is no change in market volatility after the introduction of FIIs investment;

e) There is no relation between the trade volume in Indian stock market and FIIs investment; and

f) There is no impact of arrival of foreign institutional investors on the Indian stock market capitalization.

*Database:* To achieve the various objectives of the study, we utilized the secondary data on various parameters pertaining to stock markets and economy of both India and US. These parameters include daily as well as monthly opening and closing index value, trading volume and market capitalization.

The reference period for the study ranges from January 1986 to December 2007. In order to determine the impact of foreign institutional investments on return and volatility of Indian stock market return the study period is subdivided into pre and post FIIs period. The period from January 1986 to August 1992 denotes the pre FIIs arrival period and the period from September 1992 to December 2007 denotes the Post FIIs period.
arrival period. As National stock exchange was incorporated in November 1992 and FIIs were also allowed to invest in Indian stock market in September 1992 so it was not appropriate to consider the NSE data for the above mentioned purpose. Accordingly, daily basis closing BSE Sensex was taken to calculate the return of the Indian stock market for the study period. Beside the FIIs, some other variables such as Risk in the Return of Domestic Market, Return of the US Market, Risk in Return of US Market, Exchange Rate US $ v/s Indian Rupee, Growth Rate of the Economy represented by Index of Industrial Production, Indian Interest Rate, Federal Bank Interest Rate were also considered to explain the return behavior of the Indian stock market with response to FIIs investment. Further, analysis based on monthly data has also been carried out to determine the impact of the FIIs investment on the stock market return and volatility. The reference period for the purpose ranges from January 1993 to December 2007.

To find out the impact of foreign institutional investors on trading volume and market capitalization monthly data have been taken from March 1993 to August 2007.

To identify the determinants of foreign institutional investments in Indian stock market, the daily data for the period ranging from April 1999 to December 2006 was taken. The daily data regarding FII investments were not available for time period before April 1999. Hence, the study period is restricted for the aforesaid duration. FIIs sale (FIIS), purchases (FIIP), net investment (FIIN) and 7 days moving averages of all net, sales and purchases by FIIs have been taken as dependent variables. The explanatory variables include the following: BSE Return, BSE one day lagged return (L_BSE), BSE seven day moving average (BSE_MA) and risk of BSE measured by the Standard deviation (R_BSE), NSE return, NSE one day lagged return (L_NSE), NSE seven days moving average (NSE_MA) and its risk (R_NSE), return of the US market represented by S&P 500 return, S&P 500 one day lagged return (L_S&P), S&P 500 seven days moving average (S&P_MA) and its risk (R_S&P), return of the other emerging countries represented by MSCI index, MSCI one day lagged return (L_MSCI) and risk associated with the same (R_MSCI), Federal Bank three months treasury bills rate (FBIR), Indian interest rate of three months treasury bills (TBR), one day lagged investment by foreign institutional investors (L_FIIN), exchange rate between of US$ and Indian rupee (US_EX), beta of BSE with MSCI (BETA_MSCI) and S&P 500(BETA_S&P),
difference of the Indian stock market return (BSE) and MSCI (D_RET2), and the difference of the former one with the S&P 500 (D_RET1).


Statistical and Econometric Tools: The statistical tools applied to analyze the data include percentage, ratios, arithmetic mean, standard deviation, maximum, minimum, kurtosis, skewness, simple and multiple regression, compound annual growth rate, two-tailed T-test and F-test. The structure regression techniques namely: ARMA model, ADF Unit Root Test, Augmented Engle-Granger Test (AEG) test, Granger Causality test, GARCH model are the econometric tools applied for the analysis.

9.2 Findings Concerning Impact of FIIs on Return

This section encompasses the main findings regarding the impact of foreign institutional investment on stock market return in India. The study brought out that after the introduction of foreign institutional investment in the Indian stock market the daily return of the market (BSE) has decreased. But, this decline is not found statistically significant at 5 percent level, rather it is significant at 10 percent level.

The impact of the foreign institutional investments on India’s stock market return was further analyzed by using the ARMA model. In this model the study used the 1 lag AR term and 2-lag MA term prescribed by the Auto Correlation Function and Partial Auto Correlation Function. The result of this model brought out that the past news as indicated by the AR (1) has a significant bearing on the stock market return, which implies that, the return of the preceding day affects the current day return. Analogously, 2
lagged error indicated by error term also found a significant but negative impact on the return of the stock market. It refers that the change in the residual values take a long time to die out in Indian stock market. Beside the AR and MA terms, one more variable which turned significant is risk in US market. The risk in US market is found to have a negative relation with Indian stock market return. It can be interpreted from the above said relationship that when more fluctuations occur in the US market then investors lose the confidence in Indian market too and they may start booking profit in Indian market also which probably leads to decline in the share prices in the Indian market. Index of industrial Production showed positive relation with stock market return. It offers a conclusion that increases in the growth rate of economy is discounted positively by the stock market.

The foreign institutional investments were found having negative relation with return of the Indian stock market which implies that due to arrival of FIIs return of Indian stock market have declined. This decline can’t be attributed to FIIs solely because the Indian stock markets remained in the clutches of ‘bears’ for a longtime during 1993 to 2002. The return for this period was alarming low which have affected the average return between 1992 to 2007. So to find out the isolated impact of FIIs on return second stage analysis has been conducted.

The second stage analysis which was made on the basis of monthly data of FII investment brought out that return and risk of the National Stock Exchange affect the return of the Bombay Stock Exchange. It means both markets move in the same direction at a time. The above indicates the absence of the arbitrage opportunities in the Indian stock market. Further, risk of BSE have shown a positive relationship with return which is consistent with the theory ‘more the risk more the return’. The study has also shown that the return of the US market is positively related with the Indian stock market. This time no significant affect of FIIs was found on Indian stock market return. Thus, it can be concluded that the foreign institutional investments have no impact on Indian stock market. The same is supported by Granger-Causality test.
9.3 Findings Concerning Impact of FIIs on Instability

Regarding the impact of FIIs on volatility of Indian stock market, the study revealed a significant decrease in the volatility after introduction of the foreign institutional investment in India. But this can’t be attributed exclusively to FIIs arrival since after their entry the Government of India and SEBI have initiated a number of reforms to ensure operational as well as informational efficiency. Thus, decrease in volatility may be caused by these reforms also. To make an in-depth investigation, we also used GARCH, an econometric technique.

The use of GARCH technique to find out the impact of FIIs on stock market volatility brought out that the past volatility as indicated by the GARCH (1) and recent news indicated by the ARCH (1) coefficient have had a significant bearing on the volatility. However, the effect of the recent news is found higher than the historical volatility. It refers that shocks to conditional variance take a long time to die out in Indian market. The foreign institutional investments have significant negative impact on the stock market volatility. Which implies that after introduction of foreign institutional investment in India, our stock market has been strengthened and has become more disciplined as the fluctuations have decreased adequately. The impact of the recent news as measured by the ARCH (1) has increased after the arrival of the foreign institutional investors in Indian market. It means information is quickly disseminated and quality of information has improved after arrival of the foreign institutional investors

The analysis carried on the monthly basis data offered that The GARCH term is significantly associated with the stock market volatility. It implies that historical volatility leads future volatility. ARCH term is found insignificant. FII investment also turned insignificant this time. So we can conclude that regulations by the SEBI on stock market during the liberalization period have led to the reduction in the volatility in post FIIs arrival period. However, as the specific impact of the FII investments have turned insignificant, hence, it can be concluded that foreign institutional investments have no impact on Indian stock market volatility.
9.4 Findings about Impact of FIIs on Indian Stock Market Capitalization and Trading Volume

This section is devoted to the impact of foreign institutional investment on Indian stock market capitalization and trading volume. The market capitalization and market turnover have increased at a compound annual growth rate of 15.66 percent and 22.35 percent respectively. Similarly, CAGR of FIIs net investments and BSE Sensex are 16.64 and 7.74 percent respectively. Hence, the liquidity has improved in the equity market because of the presence of FIIs. However, the average P/E ratio has declined at an annual rate of 5.02 percent. The number of listed companies indicated 1.71 percent CAGR for the study period. From the above, it can be concluded that Indian stock market has grown phenomenally with the presence of FIIs.

The study has shown that the net investment made by the foreign institutional investors (FIIN) in Indian stock market proved as a casual force of Market Capitalization. It refers that arrival of the foreign institutional investors increase market capitalization. But in case of casual relationship between FIIs investment and trading volume, FIIs investment turned as a result of trading volume which implies that as domestic investors start investment in the national market it boost the confidence of foreign investors also which pulls them to invest in the host country market.

Trading volume is found possessing a positive association with the purchases done by the foreign institutional investors which implies that the trading volume of the host country market attracts foreign investors and resultantly their purchase increases. The purchases have shown bi-directional causality with market capitalization, which implies that rise in the market attract purchases of FIIs which in turn increases market capitalization. Study also reveals that sales done by foreign institutional investors in Indian stock market also have a bi-directional causality with the market capitalization.

9.5 Determinants of FIIs in Indian Stock Market

This section presents a summary of the results with regards to the determinants of foreign institutional investments on the Indian stock market.
The study brought out that the explanatory power of all the determinants of FII inflows to India varies from 24 to 52 percent. It was highest (52%) when moving average of purchases by FIIs was taken as dependent variable. $R^2$ is the lowest in case of net investment as dependent variable. However, when 7 days moving average of either of the basic dependent variables was taken as an additional independent variable, the $R^2$ rose to 0.44, 0.85 and 0.83 in case of FIIN, FIIS and FIIP respectively. Similarly, on taking seven days moving average of net investments, sales and purchases by FIIs with one lag as an additional independent variable, the explanatory power of the concerning equations rose to 0.915, 0.991 and 0.988 respectively. The above reveals that, the past information about foreign investments play a significant role in attracting FIIs to Indian stock market.

The results of multivariate regression equations fitted to identify the important determinants of FIIs offers numerous revelations. First, FII flows to India are significantly affected by return in the domestic equity market. Second, the stock market return is not influenced by variation in FII flows. Third, one day lag return is found as a significant determinant of FIIs. Fourth, the dependence of the net FII flows on daily return in the domestic equity market- at a day’s lag, to be more specific – is suggestive of foreign investors return chasing behavior. Fifth, decision of FIIs get affected by the recent history of the market return and the volatility in international and domestic markets as well. Sixth, the exchange rate shows a negative relationship with all of the dependent variables except the sales by the foreign institutional investors. With the sales it has shown a positive association. Seventh, the Granger causality test which was applied to establish the casual relationship of exchange rate of rupee and US dollar with FIIN, FIIP and FIIS, showed affect on purchases by foreign institutional investors. Eighth, index of industrial production has also shown a positive relationship with foreign portfolio investment. Hence, the growth of the Indian economy is an important factor that influences the foreign investors towards that. Ninth, the foreign institutional investors reap the benefits of portfolio diversification by investing in Indian market as the betas of the BSE Sensex with respect to the MSCI world and S&P 500 indices turned positively associated with FIIs purchase and sales.
9.6 Proposal and Policy Insinuation

The study has offered numerous useful points based on which policy makers may find a path to strengthen the Indian capital market in general and stock market in particular. Here we have made some suggestion based on the findings on this study in this regard.

First, Indian equity market return is found as the prime mover of the FII net flows into India. Hence, the rate of FII flows into the country would be governed by the performance of the domestic equity market and/ or foreign investors expectations about this performance. Given the fact that a drop of return in the Indian equity market may result in sudden massive withdrawals of FII, which may result in quite disturbing consequence on the country’s economy. Similarly, the rise in return would attract a lot of foreign capital to India. The above behavior of FIIs would cause variation in the country’s foreign exchange reserve and to some extent, and then they may be outside the monetary authority’s control as is being observed in the last quarter of the previous year. Policy implications of the findings just mentioned above are that a move towards a more liberalized regime in the emerging market economies like India should be accompanied by the further improvements in the regulatory system of the financial sector. For instance, the policy makers in India should stop justifying the need of capital account convertibility without considering its side effects. India could survive in the midst of Asian crisis 1997 simply because of its proper foreign exchange regulations. The same need to be stressed in future too. While liberalizing capital account, they (policy makers) must come up with genuine grounds.

Second, there is a need to stabilize the frequent ups and downs in the domestic stock market. This market has undergone peaks and troughs since the starting of economic reforms, many a time because of non-fundamental factors such as speculation, sentiments, and manipulation of the institutions and so on. Without stabilization, there might be an adverse impact of these non-fundamental factors on FII behavior through volatile returns in the stock market.

Third, more focus should be on regaining investor’s confidence in the equity market so as to strengthen the domestic investors base of the market. A survey by the
SEBI and NCAER showed that alleged malpractices like insider trading, low confidence in brokers and sub-brokers and company management/auditors were the main causes behind lack of domestic saver’s confidence in the equity market. The participation of domestic institutional investors specially pension funds should be ensured to strengthening the base of the domestic stock market and would also end the anomaly of the existing situation where foreign pension funds are extensive users of the Indian equity market but domestic pension fund are not.

Fourth, the stability of foreign institutional investment in India will be enhanced if FIIs are able to switch between equity and debt investments in India, depending in their view about future equity returns. Greater flexibility for FIIs to participate into bond market will induce more balanced strategies and mixing equity and debt.

Fifth, concerning the impact of FIIs on volatility of stock market return, there prevails an opinion that they destabilize the market. But, this study provides vice-versa findings. It puts forward that FIIs are not ‘villains’ as our study suggested no impact of foreign institutional investors arrival on Indian stock market. In most of the market crashes which took place after arrival of FIIs, they were net buyers. For instance, in case of 17 May 2004 Black Monday episode, FIIs were not the culprits. Though there was a net outgo there was also a come back in the next month June as a net inflow. Thus, we argued that FIIs tend to support stock market purely to ensure stability and safety of their own investments and supports the broad base hypotheses. FIIs add liquidity to the local market and reduce volatility. So it would be beneficial for the India to promote FIIs.

Next, in order to stimulate FII flows, the government must set up FII investments caps over and above the FDI sectoral limits. In cases, where the limits have to be combined, they should be sufficiently at high levels. FII flows may be encouraged by greater volume of issuance of ‘good quality equities’ in the Indian market. This would be assisted by public sector units disinvestments. As it has been seen in the case of the initial public offering (IPOs) of Gas Authority of India Limited (GAIL), Oil and Natural Gas Corporation (ONGC) and National Thermal Power Corporation (NTPC), the response of institutional investors including FIIs registered with SEBI was extremely positive.

We further suggest that in order to attract the portfolio investment and retain the confidence of them, the Indian government must follow stable macro-economic policies.
The fact is that developing countries such as India have their own compulsions arising out of the very state of their social, political and economic development. FIIs view the domestic situations from their own point of view. So both ruling and opposite parties, legislatures and other responsible leaders must retrain on their speech while talking about the issues of national importance like foreign capital, 123 nuclear treaty with US, inflationary scenario etc.

As FIIs are not the subject of volatility in the case of Indian stock market, still control on capital inflows may be necessary in response to surges, so as to retain autonomy in monetary policy, to minimize cost of sterilization, to restrain appreciation of exchange rate and so on. So it is suggested to establish flexible or temporary capital controls through either quantitative restrictions or price based restriction so that impact of the external shocks such as financial crisis in some other country or great turbulence in international interest rate can be restricted. It is further suggested to move from quantitative restriction based control to price –based contingent restriction as it is found by the expert group appointed by the Ministry of Finance that quantitative controls generally give rise to economic rents: an entity which is permitted by India to be an FII or sub-account in such a contingent situation earns a rent from other prohibited entities. They also place onerous responsibilities upon the government, which are charged with formulating limits and enforcing them.

It is also suggested that The SEBI must follow the “Know your Client” principle and have information about the end-investors. So that proper implementation of policies can be ensured.

Last suggestion is that the regulatory authority must look into alleged restrictive practices by FIIs like price rigging. Once this is achieved, a built-in –cushion against possible destabilizing effects of sudden reversal of foreign inflows might drop. Only then it would be possible to reap fully the benefits of capital market integration.